

360iResearch

Ultra Fine Grinding Mill Market

Global Forecast 2026-2032

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1. Preface

1.1. Objectives of the Study

- Which suppliers can document in-scope mill offerings and the ownership, licensing, or supply relationships behind them, and how do those offerings differ between Standalone Mills and Integrated Milling Packages?
- What qualification requirements, switching considerations, support commitments, and procurement economics shape equipment selection across the included buyer industries and deployment scales?
- How do standalone and integrated purchasing arrangements allocate responsibility for equipment supply, interfaces, integration, warranty, and continuing support, and what must a buyer verify before choosing either arrangement?
- Which commercial offerings support the included technology, material, processing-state, and operating-mode categories, and where does a buyer need offering-specific evidence before treating alternatives as substitutes?
- How do Manufacturer-Direct Sales, Agent-Mediated Sales, and Independent Reseller Sales differ in commercial authority, customer accountability, and support commitments within the territories they serve?
- Which licensing, regulatory, distribution, procurement, and service conditions govern supplier access to buyers within the Global market, and which conditions require jurisdiction-specific verification?
- How should changes in supplier portfolios, ownership relationships, channel appointments, and purchasing conditions across the study periods inform commercial comparisons without treating announcements as completed business?

1.2. Market Definition

The Ultra Fine Grinding Mill market covers the commercial supply of Standalone Mills and Integrated Milling Packages worldwide. It includes the full Mill Technology hierarchy and equipment serving Laboratory, Pilot, and Industrial Production deployments. Dry Grinding, Wet Grinding, and Wet and Dry Grinding offerings are included, as are Batch, Continuous, and Batch and Continuous operating modes.

Buyers across every listed Buyer Industry are within scope. Processed Material provides a separate application lens: it describes what an offering serves without replacing the identity of the purchasing industry. Inclusion of a technology or application category does not establish that every supplier offers it or that every combination of categories is commercially available.

The value-chain boundary is the mill or milling package as supplied. Associated equipment and commercial support are relevant when they form part of that package, but their inclusion does not extend the market to every activity of an equipment supplier or integrator. Upstream materials, separately supplied contract-processing services, and downstream processed products remain adjacent activities rather than standalone offerings in this equipment market.

1.3. Market Segmentation & Coverage

Supply Scope distinguishes Standalone Mills from Integrated Milling Packages. This axis organizes the commercial object being purchased and the breadth of supplier responsibility; it should not be interpreted as evidence that the two scopes are directly interchangeable.

Mill Technology includes Gas-Jet Mills, with Spiral Jet Mills, Opposed-Jet Mills, Loop Jet Mills, and Target Jet Mills; Media Mills, with Stirred Media Mills, Rotary and Planetary Ball Mills, and Vibratory Media Mills; Mechanical Impact Mills; Roller Mills; Disc and Colloid Mills; Cutting Mills; and Wet-Jet Mills. These categories establish technology coverage without implying common application suitability or supplier capability.

Processed Material includes Metal Ores and Concentrates; Industrial Minerals; Inorganic Chemicals, Ceramics, and Glass; Metals and Alloys; Carbonaceous Materials; Organic Chemicals; Polymers and Elastomers; Biomass and Natural Ingredients; and Formulations and Composites. This axis supports application comparisons while keeping the equipment market separate from the market for the materials themselves.

Buyer Industry includes Mining and Mineral Processing; Chemical and Fuel Manufacturing; Pharmaceutical Manufacturing; Food, Beverage, and Feed Manufacturing; Rubber and Plastics Product Manufacturing; Glass, Ceramics, and Construction Materials Manufacturing; Metals and Fabricated Metal Manufacturing; Electrical and Electronic Product Manufacturing; Wood, Pulp, and Paper Manufacturing; Power and Heat Generation; Materials Recovery and Recycling; and Research, Education, and Testing. The purchasing organization, rather than a material label alone, anchors this commercial perspective.

Deployment Scale includes Laboratory, Pilot, and Industrial Production. All are included equipment contexts. Comparison should address the offering and purchasing requirements at the relevant scale rather than assume that participation at one scale establishes capability at another.

Sales Channel includes Manufacturer-Direct Sales, Agent-Mediated Sales, and Independent Reseller Sales. This lens distinguishes routes to the purchaser and supports examination of commercial authority, contractual accountability, and support obligations without presuming equivalent rights among channel participants.

Processing State includes Dry Grinding, Wet Grinding, and Wet and Dry Grinding. These are offering classifications, not instructions for processing materials; membership requires evidence about the particular commercial offering.

Operating Mode includes Batch, Continuous, and Batch and Continuous. Together with the other axes, this describes the offering rather than a separate additive opportunity. The axes remain independent comparison lenses and do not imply that every cross-category combination is available.

Table 1. Global Ultra Fine Grinding Mill Market Segmentation & Coverage

Segmentation	Coverage
Buyer Industry	• Chemical and Fuel Manufacturing • Mining and Mineral Processing • Pharmaceutical Manufacturing • Food, Beverage, and Feed Manufacturing • Research, Education, and Testing • Materials Recovery and Recycling • Electrical and Electronic Product Manufacturing • Glass, Ceramics, and Construction Materials Manufacturing • Metals and Fabricated Metal Manufacturing • Wood, Pulp, and Paper Manufacturing • Rubber and Plastics Product Manufacturing • Power and Heat Generation
Deployment Scale	• Industrial Production • Laboratory • Pilot
Mill Technology	• Media Mills o Stirred Media Mills o Rotary and Planetary Ball Mills o Vibratory Media Mills • Gas-Jet Mills o Opposed-Jet Mills o Spiral Jet Mills o Loop Jet Mills o Target Jet Mills • Mechanical Impact Mills • Roller Mills • Disc and Colloid Mills • Wet-Jet Mills • Cutting Mills
Operating Mode	• Continuous • Batch • Batch and Continuous
Processed Material	• Inorganic Chemicals, Ceramics, and Glass • Organic Chemicals • Metal Ores and Concentrates • Biomass and Natural Ingredients • Formulations and Composites • Carbonaceous Materials • Industrial Minerals • Polymers and Elastomers • Metals and Alloys
Processing State	• Dry Grinding • Wet Grinding • Wet and Dry Grinding

Table 1 - continued

Segmentation	Coverage
Sales Channel	• Manufacturer-Direct Sales • Agent-Mediated Sales • Independent Reseller Sales
Supply Scope	• Integrated Milling Packages • Standalone Mills

Sources & Evidence

1. Comminution - NTNU

· Taxonomy evidence: The university inventory distinguishes jet, stirred, planetary, and tumbling equipment and explicitly associates jet, stirred, and small-scale planetary mills with ultrafine grinding. It does not qualify every inventoried crusher or coarse mill for this market. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))

· Taxonomy evidence: The institution identifies stirred mills among its ultrafine-capable platforms and separately inventories a stirred attritor, independently corroborating the retained stirred-media constituent. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))

· Taxonomy evidence: Planetary milling is explicitly identified as an ultrafine-capable laboratory platform. This supports that constituent, not standardization of the combined rotary/planetary category. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))

· Taxonomy evidence: The equipment belongs to a university mineral-processing laboratory. Its mineral subject matter does not make the operating establishment a mining company, supporting separation of institutional buyer activity from processed material. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))

· Taxonomy evidence: The institutional equipment inventory records processing state, operating mode, and deployment scale as separate attributes, supporting their treatment as independent classification questions. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))

· Taxonomy evidence: The installed jet-mill/classifier rig is identified as dry-grinding equipment. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))

· Taxonomy evidence: The inventory identifies wet/dry capability for its stirred attritor and planetary mill, independently corroborating dual-state equipment terminology. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))

· Taxonomy evidence: The inventory distinguishes batch from continuous operation independently of processing state and scale. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))

· Taxonomy evidence: The planetary mill and stirred attritor have batch operation identified in the institutional inventory. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))

· Taxonomy evidence: The laboratory jet-mill/classifier rig is identified as continuous. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))

· Taxonomy evidence: Continuous operation appears parenthetically alongside batch for the attritor. That qualified notation does not establish both modes in a current commercial purchase. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))

2. NRRI advances efficient grinding technology on the Iron Range
   - Taxonomy evidence: The May xx.xx 2024 institutional account identifies a loaned pilot stirred mill and a separate bench-scale purchase at the research institute. This independently establishes an institutional operating context and demonstrates that deployment role and buyer industry need not coincide. ([nrri.umn.edu](https://nrri.umn.edu/news/stm-vertical-grinding))
   - Taxonomy evidence: The institute describes its own installation separately from iron-industry clients and a client's equipment purchase. Those distinctions support assigning industry to the actual operating establishment rather than its clients or research beneficiaries. ([nrri.umn.edu](https://nrri.umn.edu/news/stm-vertical-grinding))
   - Taxonomy evidence: The May xx.xx 2024 institutional account distinguishes an installed pilot vertical stirred mill from a separately planned bench-scale purchase and identifies ultrafine grinding among the technology's applications. ([nrri.umn.edu](https://nrri.umn.edu/news/stm-vertical-grinding))
   - Taxonomy evidence: The institution identifies its vertical stirred mill as pilot-scale and loaned. This supports the deployment distinction but does not establish an equipment-sale receipt. ([nrri.umn.edu](https://nrri.umn.edu/news/stm-vertical-grinding))
   - Taxonomy evidence: The institution separately states that it is purchasing a smaller version for bench research and proof-of-concept work. ([nrri.umn.edu](https://nrri.umn.edu/news/stm-vertical-grinding))
   - Taxonomy evidence: The account names an agreement with the mill manufacturer, but does not disclose a complete sales contract or independent commission arrangements; it cannot conclusively classify the selling route. ([nrri.umn.edu](https://nrri.umn.edu/news/stm-vertical-grinding))
3. UNSD Classification Detail - ISIC Rev.4, Class 3830: Materials Recovery
   - Taxonomy evidence: ISIC Rev.xx.xx class xx.xx expressly includes reclaiming used tires and processing plastic or rubber waste into secondary raw materials. It excludes manufacture of new final products from recovered inputs. This establishes an activity boundary, not ultrafine-equipment adoption. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Detail/EN/xx.xx/xx.xx))
   - Taxonomy evidence: ISIC Class xx.xx separately identifies materials recovery under waste-management activities. Together with the manufacturing notes, this supports distinguishing secondary-raw-material recovery from production of new manufactured products. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Detail/EN/xx.xx/xx.xx))
   - Taxonomy evidence: The class excludes new final-product manufacturing, including tire retreading, from materials recovery. The retained buyer allocation therefore depends on establishment output, not merely the use of recovered rubber or plastics. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Detail/EN/xx.xx/xx.xx))
   - Taxonomy evidence: The materials-recovery notes exclude making pulp from waste paper and direct it to manufacturing. Recovered feed alone therefore does not move pulp/paper establishments into the recovery buyer category. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Detail/EN/xx.xx/xx.xx))
   - Taxonomy evidence: The notes exclude remelting ferrous scrap and production of new metal from scrap from this recovery class, supporting the retained manufacturing-versus-recovery distinction without establishing a qualifying mill sale. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Detail/EN/xx.xx/xx.xx))

4. UNSD Classification Detail - ISIC Rev.5, Class 4610: Wholesale on a Fee or Contract Basis
   - Taxonomy evidence: ISIC Rev.xx.xx class xx.xx includes central purchasing units only when they act as intermediaries without owning goods, and includes Internet-mediated principal-account transactions. Thus neither a purchasing-unit label nor an online transaction independently determines the retained selling route. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))
   - Taxonomy evidence: The international classification distinguishes fee- or commission-based intermediation without ownership from wholesale activity on the seller's own account. This supports a contractual-role partition rather than a geography-specific channel taxonomy. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))
   - Taxonomy evidence: The class's central-purchasing and Internet examples reinforce that agency classification depends on non-ownership and principal-account facilitation. This is a contractual-role reference, not evidence that any particular mill award used an agent. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))
   - Taxonomy evidence: Commission agents and brokers facilitate transactions on a principal's account without owning the intermediated goods; intermediaries assuming ownership are excluded from this class. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))
5. Jet Mill - Contract History | CanadaBuys
   - Taxonomy evidence: The contract history connects tender notices published July xx.xx and September xx.xx 2025 with the May xx.xx 2026 award. These are distinct procurement stages; the 2025 requirements must not be counted as completed 2025 equipment sales. ([canadabuys.canada.ca](https://canadabuys.canada.ca/en/tender-opportunities/contract-history/cw2408170-xx.xx))
   - Taxonomy evidence: The award identifies a recipient, a contracting department, and a buying department, but does not establish manufacturer ownership, equipment title transfer, or commission arrangements. Its named recipient alone cannot conclusively distinguish the three retained selling routes. ([canadabuys.canada.ca](https://canadabuys.canada.ca/en/tender-opportunities/contract-history/cw2408170-xx.xx))
   - Taxonomy evidence: The jet-mill contract was awarded on May xx.xx 2026 and classified as laboratory grinding equipment. The record distinguishes the contracting organization, PSPC, from the buying organization, Natural Resources Canada; it does not identify the precise operating laboratory or establish a 2025 purchase. ([canadabuys.canada.ca](https://canadabuys.canada.ca/en/tender-opportunities/contract-history/cw2408170-xx.xx))
   - Taxonomy evidence: The separation of contracting and buying organizations demonstrates why an administrative purchaser must not automatically be treated as the operating end user.
   - Taxonomy evidence: The May xx.xx 2026 jet-mill award is classified under laboratory grinding equipment. It supplies purchaser-side evidence for a laboratory deployment category, not a 2025 sales observation. ([canadabuys.canada.ca](https://canadabuys.canada.ca/en/tender-opportunities/contract-history/cw2408170-xx.xx?utm_source=openai))
   - Taxonomy evidence: The contract identifies Natural Resources Canada as buyer and assigns the jet mill to a laboratory-equipment commodity classification. ([canadabuys.canada.ca](https://canadabuys.canada.ca/en/tender-opportunities/contract-history/cw2408170-xx.xx?utm_source=openai))

6. Comminution Testing | Core Resources

· Taxonomy evidence: The operator lists one named Metprotech vertical stirred-bead inventory item as continuous or batch. This strengthens dual-mode category recognition, but the page does not disclose an order or the complete supplied configuration.
([coreresources.com.au](https://coreresources.com.au/services/metallurgical-services/laboratory-testing/comminution-testing/))

· Taxonomy evidence: The operator distinguishes batch and continuous milling availability while separately describing stirred-media ultrafine capability. These are separable commercial attributes; a specific dual-mode purchase remains only partially supported.
([coreresources.com.au](https://coreresources.com.au/services/metallurgical-services/laboratory-testing/comminution-testing/))

· Taxonomy evidence: The company's own inventory and service disclosure identify operation of stirred-media equipment for ultrafine grinding, corroborating an operating-user context rather than relying solely on a machinery supplier portfolio.
([coreresources.com.au](https://coreresources.com.au/services/metallurgical-services/laboratory-testing/comminution-testing/))

· Taxonomy evidence: The company describes its own laboratory and pilot equipment used in commercial metallurgical testing services. This supports the independent testing-establishment context, not equipment ownership by its mining clients.
([coreresources.com.au](https://coreresources.com.au/services/metallurgical-services/laboratory-testing/comminution-testing/))

7. Rare earths (magnetic raw materials) - Hosokawa Micron Powder Systems

· Taxonomy evidence: The manufacturer's own offering identifies MJT as a target jet mill while its narrative also uses opposed-jet terminology. This exposes a naming overlap; giving an explicit target-platform label precedence is an analytical allocation convention, not a claim of technical equivalence.
([hmicronpowder.com](https://www.hmicronpowder.com/industry/mineral/rare-earths-magnetic-raw-materials/))

· Taxonomy evidence: The same commercial page separately identifies its AFG fluidized-bed jet offering and its MJT target offering. These named product facts supplement independent category nomenclature but do not establish the global sibling partition or category sales.
([hmicronpowder.com](https://www.hmicronpowder.com/industry/mineral/rare-earths-magnetic-raw-materials/))

8. Details of micromeritics | HOSOKAWAMICRON CORPORATION

· Taxonomy evidence: Within its ultrafine-equipment discussion, the company identifies its own AS spiral jet mill. This refreshes a named offering only; independent literature remains the basis for category nomenclature.
([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Taxonomy evidence: The company identifies its AFG/TFG counterjet families and expressly states that AFG-CR and AFG-CRS have been marketed. These are attributed own-product facts, not verification of every counterjet alias or a market share.
([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Taxonomy evidence: The company identifies its own MJQ and MJT collision-jet series within the ultrafine discussion. Combined with the explicit MJT target label in its separate offering, this supplements current named-platform recognition without proving purchaser adoption.
([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Taxonomy evidence: The company identifies its Innovomizer as a mechanical ultrafine grinding mill. This corroborates one named qualifying offering, not eligibility of all hammer, pin, or rotor-impact equipment.
([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

9. Frequently Asked Questions - Wholesale
   - Taxonomy evidence: The Census wholesale instructions include gross selling value negotiated on commission and several service or rental receipts within broad reporting items. Consequently, such wholesale totals are not directly equivalent to qualifying new-mill revenue; deduplication and boundary exclusions are analytical requirements. ([census.gov](https://www.census.gov/programs-surveys/economic-census/year/2022/about/faq/faq-wholesale.html))
   - Taxonomy evidence: The official definitions distinguish own-account wholesalers, manufacturer-affiliated sales establishments, and commission intermediaries; they are not ultrafine-mill channel shares. ([census.gov](https://www.census.gov/programs-surveys/economic-census/year/2022/about/faq/faq-wholesale.html))
   - Taxonomy evidence: The instructions distinguish title-taking merchandise purchases for resale from equipment bought for the establishment's own use. That accounting distinction supports separating intermediary turnover from operating-buyer equipment acquisition, without providing an ultrafine-mill market total. ([census.gov](https://www.census.gov/programs-surveys/economic-census/year/2022/about/faq/faq-wholesale.html))
   - Taxonomy evidence: Manufacturer sales branches are defined through ownership or corporate affiliation with the manufacturer. ([census.gov](https://www.census.gov/programs-surveys/economic-census/year/2022/about/faq/faq-wholesale.html))
   - Taxonomy evidence: Merchant wholesalers buy merchandise on their own account and resell goods produced by other firms. ([census.gov](https://www.census.gov/programs-surveys/economic-census/year/2022/about/faq/faq-wholesale.html))
10. Process Plant and Equipment - Product directory
   - Taxonomy evidence: The machinery directory separately recognizes jet, stirrer, ball, vibrating, impact, roller, colloid, disc, and cutter mills. It is a broad equipment-terminology reference, not an ultrafine-specific market partition or sales dataset. ([vdma.eu](https://www.vdma.eu/documents/xx.xx/xx.xx/171025_Brosch_HLV_Verfahrenstechnik_M%2BA_DS.pdf/316c351e-174b-xx.xx-2d48-c86d3e851827?t=xx.xx))
   - Taxonomy evidence: Jet mills appear as a named machinery category; the directory does not distinguish gas-jet subtypes.
   - Taxonomy evidence: Stirrer mills are separately listed, supporting distinct commercial platform nomenclature.
   - Taxonomy evidence: Ball and drum mills are listed; these support constituent terminology, not the full combined rotary/planetary grouping.
   - Taxonomy evidence: Tube vibrating and oscillating mills are separately recognized equipment categories.
   - Taxonomy evidence: Impact, pin, hammer, beater, and sifter mills are separately named equipment categories.
   - Taxonomy evidence: Roller and rolling mills are listed, without establishing ultrafine eligibility for every offering.
   - Taxonomy evidence: Colloid and corundum disc mills are listed as recognized equipment categories.
   - Taxonomy evidence: Cutter mills are listed; ultrafine-specific qualification requires additional evidence.

11. Regulatory and Inspection Manual for Nonmetallic Mineral Processing Plants, Revised
    - Taxonomy evidence: The official manual distinguishes hammer, roller, rod, pebble/ball, and fluid-energy mills in nonmetallic mineral processing. Its classification is broader than the captured market. ([nepis.epa.gov](https://nepis.epa.gov/Exe/ZyPURL.cgi?Dockey=50000B1W.TXT))
    - Taxonomy evidence: The manual expressly identifies gas-driven fluid-energy mills as ultrafine grinders, supporting the gas-jet family independently of supplier portfolios.
    - Taxonomy evidence: Its fluid-energy description includes circular or elliptical particle paths and loop classification, supporting historical loop-platform terminology.
    - Taxonomy evidence: The manual identifies rotating-drum ball and pebble mills, supporting the tumbling constituent of the proposed combined family, not planetary or orbital variants.
    - Taxonomy evidence: Hammermills are described as mechanically driven impact equipment; this does not establish that every hammermill qualifies as ultrafine.
    - Taxonomy evidence: Roller mills remain a distinct platform even when an integral separator is present.
12. Stirred media mills in the mining industry: Material grindability, energy-size relationships, and operating conditions
    - Taxonomy evidence: The peer-reviewed review distinguishes stirred media milling from conventional ball milling and identifies established fine and ultrafine mineral-processing applications. ([fiberlean.com](https://fiberlean.com/wp-content/uploads/2025/xx.xx/POWTEC-D-xx.xx-00094R13postprintmanuscript.pdf))
    - Taxonomy evidence: The review identifies commercially established gravity-induced and fluidized stirred-mill platforms, including horizontal and vertical examples, within ultrafine grinding.
    - Taxonomy evidence: The academic review distinguishes ultrafine grinding for mineral liberation from industrial-mineral grinding for functional material properties, supporting separate ore and industrial-mineral families. ([fiberlean.com](https://fiberlean.com/wp-content/uploads/2025/xx.xx/POWTEC-D-xx.xx-00094R13postprintmanuscript.pdf))
    - Taxonomy evidence: The review identifies ultrafine grinding of metalliferous ores for mineral liberation, supporting the ore/concentrate commercial duty.
    - Taxonomy evidence: Industrial minerals are identified as grinding targets whose particle properties are tailored for functionality rather than metallic-mineral liberation.
    - Taxonomy evidence: The review establishes mining-industry use of stirred-media mills for ultrafine mineral grinding.
    - Taxonomy evidence: The commercial-context discussion identifies established pharmaceutical-industry use of stirred-media mills.
    - Taxonomy evidence: The review identifies pigments as an established industrial context for stirred-media milling; this supports a chemical-industry connection, not the fuel-manufacturing portion.

13. Fine grinding of wood - Overview from wood breakage to applications
    - Taxonomy evidence: The review distinguishes gas-jet milling from rotor-impact and grinding-media milling, and recognizes gas choice separately from jet-platform type. ([oulurepo.oulu.fi](https://oulurepo.oulu.fi/bitstream/handle/xx.xx/xx.xx/nbnfi-fe201803266180.pdf%3Bjsessionid%3DC41BCC8185A9D1DD6061389E12A5E827?sequence=xx.xx))
    - Taxonomy evidence: Spiral jet mills are explicitly identified as a jet-mill category.
    - Taxonomy evidence: Opposed jet mills are explicitly identified and discussed for fine-powder production.
    - Taxonomy evidence: Oval-chamber jet mills are explicitly identified; mapping them to the loop label is an analytical terminology harmonization.
    - Taxonomy evidence: Target jet mills are explicitly identified, without establishing current subtype sales.
    - Taxonomy evidence: The review distinguishes media driven by the mill casing from media driven by an agitator.
    - Taxonomy evidence: Planetary and tumbling ball milling are identified separately, supporting constituent families rather than a standardized combined label.
    - Taxonomy evidence: Vibration milling is identified separately from planetary and tumbling ball milling.
    - Taxonomy evidence: Rotor-impact mills include screened and integrated-classifier configurations; classifier presence does not define a separate principal milling platform.
    - Taxonomy evidence: Roller and disc milling are distinguished as separate equipment families.
    - Taxonomy evidence: Disc milling is distinguished from media and rotor-impact milling; the review does not define the full combined disc/colloid family.
14. Particle size distribution control during wheat milling: nutritional quality and functional basis of flour products-a comprehensive review
    - Taxonomy evidence: The review's milling-equipment table identifies ball milling for ultra-fine flour refinement, while separately describing ordinary roller milling. This supports an ultrafine application context for ball mills, not the proposed grouping's complete platform definition or equipment sales. ([academic.oup.com](https://academic.oup.com/ijfst/article/xx.xx/xx.xx/xx.xx/xx.xx))
15. Supply and Installation of a Large Scale Powder Processing Unit for the Processing of Hydrognated NdFeB Powder
    - Taxonomy evidence: The procurement notice describes a multiunit powder-processing purchase containing a jet mill and ancillary processing and transfer equipment, supporting a distinction between a mill and a wider equipment package. It is a tender notice, not evidence of a completed award. ([find-tender.service.gov.uk](https://www.find-tender.service.gov.uk/Notice/xx.xx-2021/PDF))
    - Taxonomy evidence: The proposed purchase combines milling with separation, transfer, blending, and storage. It supports integrated procurement as a commercial scope, but does not itemize attributable milling-package expenditure or justify including the entire project value.
16. ITDI-PB-2024-057-Supply, Delivery, Installation and Commissioning of one (1) lot Ultra-fine friction grinder (Supermasscolloider)
    - Taxonomy evidence: The public purchaser specified supply, delivery, installation, and commissioning of a named ultrafine friction grinder, rather than expressly specifying an entire production line. The notice records a failed procurement with no bidder. ([notices.philgeps.gov.ph](https://notices.philgeps.gov.ph/GEPSNONPILOT/Tender/PrintableBidNoticeAbstractUI.aspx?refid=xx.xx))
    - Taxonomy evidence: The notice independently establishes purchaser recognition of an ultrafine friction-grinder equipment category. It does not establish a sale or validate the entire proposed disc/colloid grouping.
17. Hollow particles, process for producing the hollow particles, and use of the hollow particles - EP 2657274 B1
    - Taxonomy evidence: The published patent's equipment-category passage identifies wet-jet mill apparatus separately from stirring and ultrasonic homogenizers and names supplied wet-jet instruments. This supports historical commercial-category recognition, not present sales or every instrument's market eligibility. ([data.epo.org](https://data.epo.org/publication-server/rest/v1.xx.xx/publication-dates/xx.xx/patents/EP2657274NWB1/document.pdf))

18. STAR BURST: Wet Pulverization and Dispersion Device

    · Taxonomy evidence: The manufacturer's inspected catalog identifies STAR BURST as a media-free wet-jet milling device with pulverization among its functions and commercially offered fine-particle equipment models. This establishes a marketed named platform, not a universal performance guarantee or eligibility for droplet-only applications.
    ([sugino.com](https://www.sugino.com/en/products/wet-type-atomization-equipment/))

19. SecoMy® S Fine Cutting Mill

    · Taxonomy evidence: The inspected SecoMy S product page identifies a dedicated fine-cutting platform with an integrated classifier and expressly advertises ultrafine grinding. It supports this supplier's qualifying commercial terminology, while leaving cross-industry fineness comparability unresolved.
    ([grinding.netzsch.com](https://grinding.netzsch.com/en/products-and-solutions/dry-grinding/seco-my-s-fine-cutting-mill/))

20. Colloid Mill for Wet Grinding, Homogenizing and Dispersion

    · Taxonomy evidence: The inspected colloid-mill offering explicitly identifies rotor-stator equipment for wet ultrafine grinding and micron-level material reduction. It corroborates a commercial colloid-milling constituent, not the market-wide combined family or inclusion of all mixing and emulsification equipment.
    ([boyeemill.com](https://www.boyeemill.com/boyee-colloid-mill.html))

21. Investigation of Ultra-Fine Grinding of Basalt Powder in Vibratory Mills: Grinding Efficiency and Implementation Potential

    · Taxonomy evidence: The 2025 peer-reviewed study explicitly addresses ultrafine basalt grinding using vibratory mills, establishing a distinct ultrafine-grinding application context. It does not establish equipment sales, commercial commissioning, or a market share.
    ([reference-global.com](https://reference-global.com/article/xx.xx/mspe-2025-xx.xx))

22. UNSD Classification Detail - ISIC Rev.4, Section C: Manufacturing

    · Taxonomy evidence: ISIC distinguishes manufacturing from mineral beneficiation and secondary-material recovery, and recognizes processing performed for third parties. These distinctions support operating-activity allocation rather than classification by customer destination.
    ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Detail/EN/xx.xx/C))

    · Taxonomy evidence: The manufacturing structure separately identifies coke/refined-petroleum products and chemicals. Combining these named activities is an analytical grouping, not evidence of qualifying equipment purchases.

    · Taxonomy evidence: The structure separately identifies wood products and paper products, supporting the named industrial grouping without establishing ultrafine-equipment demand.

    · Taxonomy evidence: The structure identifies basic metals and fabricated metal products as distinct manufacturing activities, supporting their combined buyer grouping.

    · Taxonomy evidence: Electronic/optical products and electrical equipment are distinct manufacturing divisions; their combination does not include every upstream battery-material supplier.

23. UNSD Classification Detail - ISIC Rev.4, Section B: Mining and Quarrying

    · Taxonomy evidence: ISIC Section B identifies mining and quarrying as an economic-activity sector separate from manufacturing. It supports the sector boundary, not a count of qualifying mill buyers.
    ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Detail/EN/xx.xx/B))

24. UNSD Classification Detail - ISIC Rev.4, Division 10: Manufacture of Food Products

    · Taxonomy evidence: ISIC food manufacturing includes grain/starch products and prepared animal feeds, and permits production for third parties. Its notes distinguish food manufacturing from recovery of food waste into secondary raw materials. Beverage manufacturing is separately identified in the manufacturing structure.
    ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Detail/EN/xx.xx/xx.xx))

25. UNSD Classification Detail - ISIC Rev.4, Division 21: Pharmaceutical Manufacturing

    · Taxonomy evidence: ISIC separately identifies basic pharmaceutical products and pharmaceutical preparations, including medicinal chemical and botanical products. This establishes an industrial classification, not authorization, efficacy, or equipment adoption.
    ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Detail/EN/xx.xx/xx.xx))

26. UNSD Classification Detail - ISIC Rev.4, Division 20: Chemicals and Chemical Products
    - Taxonomy evidence: ISIC chemical manufacturing encompasses organic and inorganic raw-material transformation and distinguishes basic chemicals from intermediate and finished chemical products. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Detail/EN/xx.xx/xx.xx))
    - Taxonomy evidence: The division expressly recognizes organic raw materials, providing a commercial-classification input for the organic/inorganic distinction, but not an ultrafine eligibility rule.
    - Taxonomy evidence: The division expressly recognizes inorganic raw materials; the proposed material family is an analytical adaptation rather than an ISIC product category.
    - Taxonomy evidence: Primary plastics and synthetic rubber are included in the basic-chemical group, demonstrating why polymer material identity and finished-product buyer industry must remain separate.
27. UNSD Classification Detail - ISIC Rev.4, Division 23: Nonmetallic Mineral Products
    - Taxonomy evidence: ISIC Division xx.xx identifies nonmetallic mineral-product manufacturing and separates glass products from the remaining nonmetallic mineral-product group. This supports a manufacturing-sector boundary distinct from mineral extraction. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Detail/EN/xx.xx/xx.xx))
28. UNSD Classification Detail - ISIC Rev.4, Division 22: Rubber and Plastics Products
    - Taxonomy evidence: ISIC Division xx.xx identifies rubber and plastics product manufacturing, while cautioning that not every product made from these materials belongs to the division. Material identity therefore cannot substitute for buyer classification. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Detail/EN/xx.xx/xx.xx))
29. UNSD Classification Detail - ISIC Rev.4, Division 24: Basic Metals
    - Taxonomy evidence: ISIC basic-metal manufacturing includes ferrous/nonferrous refining and alloy manufacture. These activities are distinct from mining and support the basic-metal portion of the proposed buyer grouping; the page does not establish ultrafine mill purchases. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Detail/EN/xx.xx/xx.xx))
30. UNSD Classification Detail - ISIC Rev.4, Division 27: Electrical Equipment
    - Taxonomy evidence: Electrical-equipment manufacturing explicitly includes batteries and accumulators and excludes electronic products classified in Division xx.xx. This supports the combined electrical/electronic buyer grouping, not automatic assignment of upstream active-material manufacturers. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Detail/EN/xx.xx/xx.xx))
31. UNSD Classification Detail - ISIC Rev.4, Division 72: Scientific Research and Development
    - Taxonomy evidence: ISIC Division xx.xx separately identifies scientific research and development, including natural sciences and engineering. It supports an independently operated research-establishment category rather than classification by the industries researched. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Detail/EN/xx.xx/xx.xx))
32. UNSD Classification Detail - ISIC Rev.4, Class 7120: Technical Testing and Analysis
    - Taxonomy evidence: ISIC Class xx.xx identifies technical testing and analysis as an economic activity separate from manufacturing. This supports inclusion of independently operated testing establishments, without establishing qualifying equipment purchases. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Detail/EN/xx.xx/xx.xx))
33. UNSD Classification Detail - ISIC Rev.4, Class 8530: Higher Education
    - Taxonomy evidence: ISIC Class xx.xx identifies higher education as a separate institutional activity. This supports the education component of the grouped buyer category, not an assumption that all educational establishments buy qualifying mills. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Detail/EN/xx.xx/xx.xx))
34. UNSD Classification Detail - ISIC Rev.4, Division 35: Electricity, Gas, Steam, and Air Conditioning Supply
    - Taxonomy evidence: ISIC Division xx.xx separately identifies electric-power activities and steam supply. This supports the power/heat establishment boundary but does not establish actual qualifying ultrafine-mill adoption. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Detail/EN/xx.xx/xx.xx))

35. Report of Investigations 7641: Ultrafine Grinding of Several Industrial Minerals by the Attrition-Grinding Process

    · Taxonomy evidence: The Bureau of Mines publication identifies mica, pyrophyllite, talc, marble, barite, and fluorite as industrial minerals addressed by ultrafine grinding. The 1972 record supports established material terminology, not current equipment demand. ([stacks.cdc.gov](https://stacks.cdc.gov/view/cdc/xx.xx))

36. Nippon Coke & Engineering - Commission Processing

    · Taxonomy evidence: The company's own commission-processing business documents ultrafine grinding of ceramic and glass materials and lists inorganic compounds among handled grinding materials. ([nc-kakouki.co.jp](https://www.nc-kakouki.co.jp/en/chemical/jutaku/))

    · Taxonomy evidence: Organic pigments are expressly listed among grinding-service materials.

    · Taxonomy evidence: Iron, nickel, and copper powders are named grinding-service examples, although their individual ultrafine finished-particle specifications are not established.

    · Taxonomy evidence: Carbon is a named material handled by the company's grinding services.

    · Taxonomy evidence: Thermosetting resin is a named grinding-service material.

    · Taxonomy evidence: Ink grinding is documented, but the page does not identify whether multiple solid constituents or one pigment constitute the grinding target.

37. A. Ebbecke Verfahrenstechnik - Micronization / Grinding

    · Taxonomy evidence: The processor identifies foodstuffs, plant-based ingredients, herbs, roots, and leaves within its own commercial micronization/grinding activities. Only material identities are used here; no processing instructions or efficacy claims are adopted. ([ebbecke-verfahrenstechnik.de](https://www.ebbecke-verfahrenstechnik.de/en/services/micronization-grinding/))

    · Taxonomy evidence: Plastics, plastic granulates, and resins are identified within the processor's own commercial grinding activities.

    · Taxonomy evidence: The company describes operating specialized grinding equipment for third-party processing, supporting treatment of contract processors as equipment operators rather than assuming their customers own the mills.

    · Taxonomy evidence: Commercial food-ingredient micronization is documented as an operating processing activity; client equipment ownership is not established.

38. Asbury Advanced Materials - Manufacturing Capabilities

    · Taxonomy evidence: Asbury's own manufacturing disclosure identifies fine grinding and micronization and describes processing carbon and non-carbon materials, providing an operator-side commercial anchor for carbonaceous-material processing. Material-specific eligibility remains unresolved for some subtypes. ([asbury.com](https://www.asbury.com/services/manufacturing-capabilities/))

    · Taxonomy evidence: The company names custom formulations and liquid dispersions as commercial outputs, but does not establish that every formulation is jointly ground as a multicomponent solid feed.

    · Taxonomy evidence: The company distinguishes its own manufacturing and toll-processing capabilities from customers avoiding capital investment, reinforcing the operator-versus-material-customer distinction.

39. FiberLean - Industrial MFC Production Equipment for On-Site Microfibrillated Cellulose Manufacture

    · Taxonomy evidence: The commercial page offers stirred-media MFC grinding equipment for pulp, paper, board, tissue, and molded-fiber producers. This supports a stated sector offering, not an independently verified purchaser or universal ultrafine eligibility. ([fiberlean.com](https://fiberlean.com/mfc-production-equipment/))

    · Taxonomy evidence: Cellulose pulp is identified as the equipment's material input. Whether a particular duty qualifies as particle-size reduction rather than fiber morphology modification requires separate boundary confirmation.

40. TRS & Polymers - TyreXol Rubber Powder

    · Taxonomy evidence: TRS & Polymers describes its own conversion of end-of-life tires into reusable rubber powder and identifies micronization among its commercial milling technologies. Its establishment-level classification between secondary-material recovery and new-product manufacturing is not resolved by the page. ([trspolymers.com](https://trspolymers.com/product/tyrexol-rubber-powder/))

    · Taxonomy evidence: The page describes tire-derived rubber powders and customized compounded products. Assignment of a particular purchased mill to a joint composite-feed duty remains an analytical inference requiring transaction-level confirmation.

    · Taxonomy evidence: Rubber-product applications are listed as destinations for the powder; these destinations do not establish that the downstream product manufacturers own or purchase the milling equipment.

41. Supply of High energy planetary ball mill - IIT(BHU)/ME/PS/2024-25/TD/003

    · Taxonomy evidence: The July xx.xx 2024 procurement specifies a benchtop high-energy planetary ball mill for duties including nanoscale ultrafine grinding and expressly requires wet and dry capability. This establishes procurement demand, not completed delivery.
    ([iitbhu.ac.in](https://www.iitbhu.ac.in/contents/institute/2024/tender/tender_me_ps_003.pdf))

    · Taxonomy evidence: The requested mill must include both dry- and wet-grinding capability within the specified system, supporting an explicit dual-state category rather than treating separate supplier product lines as dual-state equipment.
    ([iitbhu.ac.in](https://www.iitbhu.ac.in/contents/institute/2024/tender/tender_me_ps_003.pdf))

42. Contract Manufacturing of Pharmaceuticals | Business Descriptions | YUKI GOSEI KOGYO CO.,LTD.

    · Taxonomy evidence: The operator distinguishes small equipment from manufacturing machines and lists production jet mills alongside an explicit ultrafine-particle capability. This supports industrial deployment at a contract manufacturer without including its processing-service receipts in equipment revenue.
    ([yuki-gosei.co.jp](https://www.yuki-gosei.co.jp/en/manufacture_on_assignment/medical/))

43. IBU-tec | Mills » Milling Technology for Dry and Wet Grinding

    · Taxonomy evidence: The equipment operator separately inventories wet-grinding agitator bead mills and dry-grinding jet mills. This is purchaser/operator-side corroboration of the commercial state distinction, not a supplier portfolio used as the entire taxonomy. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))

    · Taxonomy evidence: The operator places its opposed-jet mills in its dry-grinding equipment inventory. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))

    · Taxonomy evidence: The operator places its installed agitator bead mills in its wet-grinding equipment inventory. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))

44. VYSVĚTLENÍ ZADÁVACÍ DOKUMENTACE č. 3 - Explanation of Tender Documentation no.3

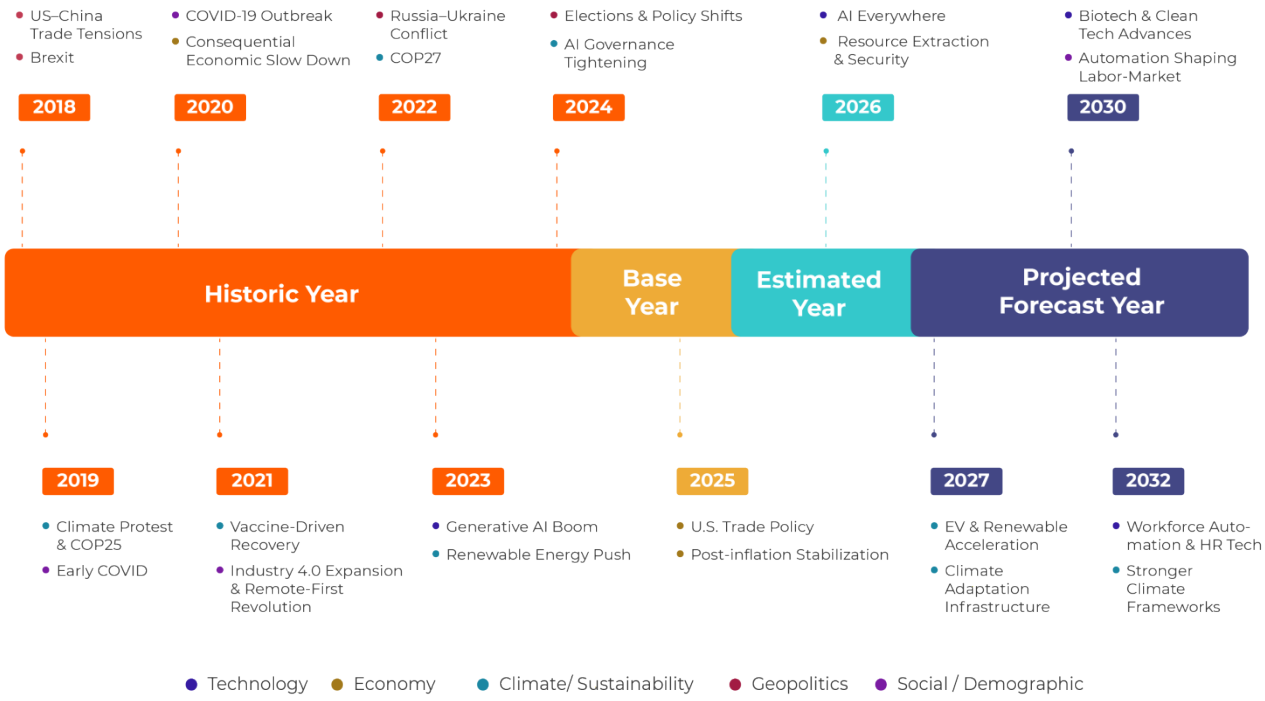
    · Taxonomy evidence: A buyer-published January 2024 tender clarification reproduces a supplier's statement that it worked with Hosokawa Alpine on a jet-mill proposal and discusses contractual acceptance. It corroborates participation by a party distinct from the named OEM, but does not resolve whether that party was a title-taking reseller or non-title-taking agent.
    ([zakazky.vsb.cz](https://zakazky.vsb.cz/document_30086/f4228d321386ab352c099168be4e87cf-vysvetleni-zadavaci-dokumentace-c-_3-pdf))

45. Picojet laboratory jet mill | Hosokawa Alpine
    - Taxonomy evidence: The commercial laboratory jet-mill page identifies dry ultrafine grinding and offers batch or continuous designs. It corroborates both mode categories but does not establish that both are included in one purchased configuration. ([hosokawa-alpine.com](https://www.hosokawa-alpine.com/powder-particle-processing/technologies/special-solutions/picoline/picojet/))
    - Taxonomy evidence: Batch operation is an expressly offered design option for the named ultrafine laboratory jet mill. ([hosokawa-alpine.com](https://www.hosokawa-alpine.com/powder-particle-processing/technologies/special-solutions/picoline/picojet/))
    - Taxonomy evidence: Continuous operation is an expressly offered design option for the same commercial product family. ([hosokawa-alpine.com](https://www.hosokawa-alpine.com/powder-particle-processing/technologies/special-solutions/picoline/picojet/))
46. Pyrum Innovations AG - Interim Group Report January 1 to June 30, 2025
    - Taxonomy evidence: The purchaser's 2025 interim report records installation of a Hosokawa-developed jet-grinding plant at its commercial recovered-carbon-black operation and subsequent commissioning activity. This corroborates industrial deployment without treating total site expenditure or processed-material sales as mill-market revenue. ([pyrum.net](https://www.pyrum.net/wp-content/uploads/2025-xx.xx-xx.xx-en-pyrum-halfyear-report-2025.pdf))

1.4. Years Considered for the Study

The study designates 2024 as the historical year, 2025 as the base year, 2026 as the estimated year, and 2032 as the forecast year. These roles distinguish historical context, the reference period, estimated conditions, and the forecast endpoint.

Figure 1. Global Ultra Fine Grinding Mill Market, Years Considered for the Study



1.5. Currency Considered for the Study

The reporting currency is USD, with monetary values expressed on an absolute basis.

1.6. Language Considered for the Study

The study is published in American English.

1.7. Key Stakeholders

- Mill manufacturers and technology owners: assess which offerings and commercial rights support participation, how standalone and integrated supply responsibilities differ, and what commitments are needed to serve the intended buyers.
- Package suppliers, engineering businesses, and procurement intermediaries: clarify responsibility for package content, equipment interfaces, delivery obligations, and customer support before accepting or placing an integrated contract.
- Mining and Mineral Processing purchasers: compare equipment and package alternatives against project procurement requirements, supplier qualification, integration responsibility, and support continuity.
- Manufacturing, utility, and Materials Recovery and Recycling buyers within the included industries: distinguish application-specific qualification and purchasing requirements from general technology descriptions when selecting or switching suppliers.
- Research, Education, and Testing organizations and other Laboratory and Pilot purchasers: compare offering suitability, supplier accountability, and support commitments without assuming that a larger deployment category establishes an equivalent purchasing proposition.
- Agents and independent resellers: verify territorial authority, the limits of their relationship with manufacturers, and the division of customer-service and warranty responsibilities before representing an offering.
- Investors, lenders, and corporate-development teams: distinguish documented equipment participation from broader corporate activity and examine ownership, licensing, package scope, and channel dependencies before assessing a business opportunity.
- Regulatory, standards, and public-procurement stakeholders: interpret applicable access and purchasing conditions within their jurisdiction and institutional scope, without treating those conditions as evidence of buyer adoption.

2. Research Methodology

2.1. Introduction

The study frames the Ultra Fine Grinding Mill market around the commercial supply of standalone equipment and integrated packages, the buyers selecting them, and the conditions governing access and support. The complete technology and application hierarchy provides the comparison boundary; it does not establish equivalence among offerings.

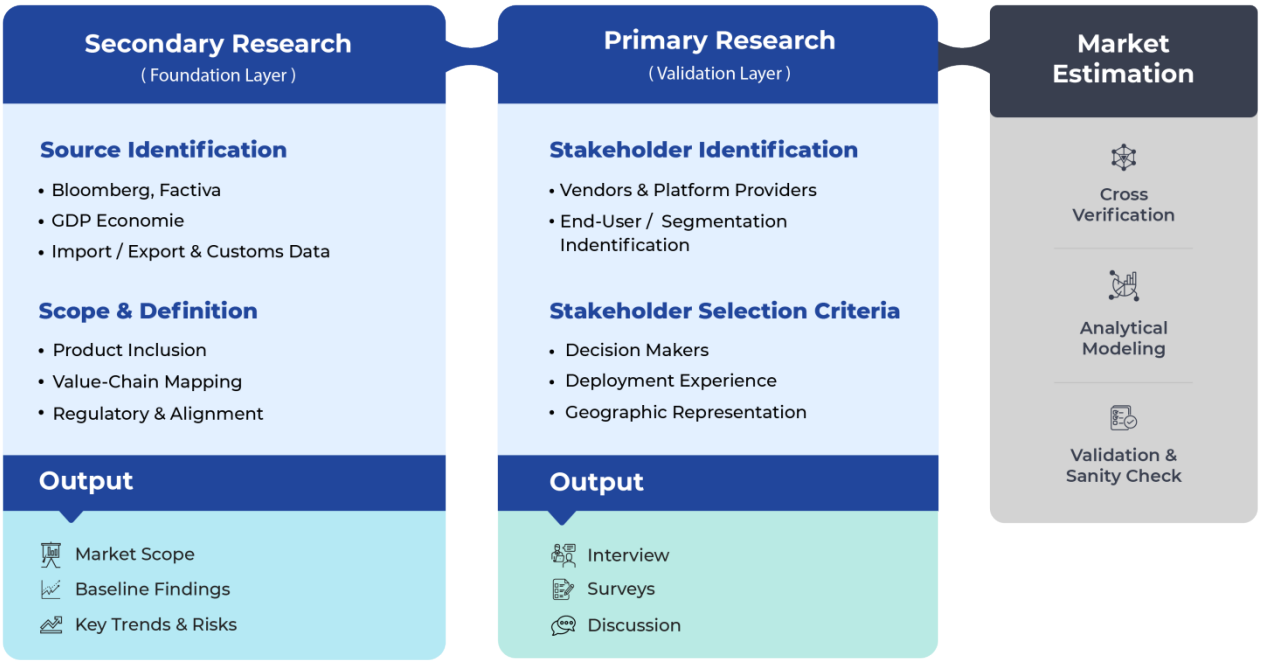
The approach separates documented business facts from economic interpretation. Qualitative explanations help identify purchasing mechanisms and conditional choices, while valuation and forecast interpretation require their own supporting evidence.

2.2. Research Design

The research design distinguishes offering identity, commercial availability, legal or contractual access, and buyer acceptance. Evidence that establishes one of these conditions does not automatically establish the others. This distinction is particularly important when comparing a named mill with an integrated package or interpreting a supplier's relationship with an agent or reseller.

Coverage follows the Global boundary and the complete segmentation hierarchy. Commercial questions should be examined at the level where they arise: supplier portfolios for offering scope, contractual relationships for channel responsibility, jurisdiction-specific records for access conditions, and buyer evidence for qualification and procurement requirements. Conclusions should retain the territory, period, and offering limitations of their supporting records.

Figure 2. Global Ultra Fine Grinding Mill Market, Research Design



2.2.1. Primary Research

The analyst team conducted primary research as a qualitative challenge layer for market definition, segmentation, demand conditions, adoption barriers, and competitive interpretation. This work tested analytical assumptions and sharpened explanations of market mechanisms without serving as standalone support for numerical estimates.

The qualitative challenge layer is evaluated alongside secondary evidence within the accepted market scope. It informs conditional market explanations and hypotheses for subsequent quantitative analysis. Numerical estimates require their own supporting evidence, and a forecast derived from a qualitative assumption does not independently validate that assumption. Final interpretation must reconcile the qualitative findings with the completed quantitative results.

2.2.2. Secondary Research

Secondary evidence should be matched to the commercial fact it can establish. Official portfolios can document a supplier's advertised mills and package offerings; filings can establish disclosed business activities and ownership relationships; licensing or channel records can clarify commercial rights; and regulatory records can establish legal status within their stated jurisdictions.

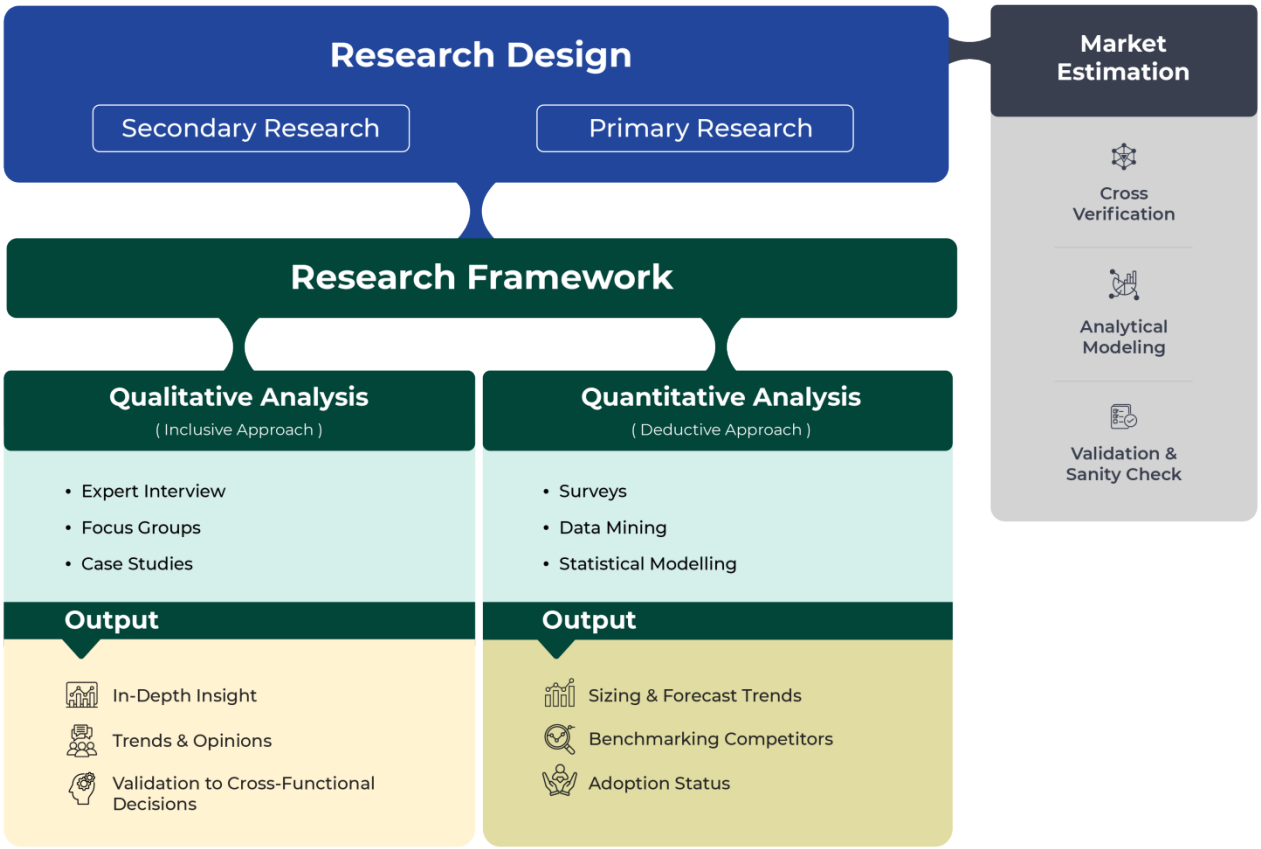
Public procurement records and buyer policies can provide evidence of purchasing conditions within their particular scope. An announcement does not establish completed delivery, and an authorization does not establish adoption. Source period, jurisdiction, offering identity, and underlying authority remain essential to interpreting each record.

2.3. Research Framework

The framework connects the market definition to the offering universe, then uses the segmentation to organize comparisons without changing the study boundary. Supplier participation requires evidence about an in-scope mill or milling package; participation elsewhere in a supplier's portfolio is not sufficient.

Commercial interpretation then links the offering to its purchaser, supply relationship, and access conditions. This separates questions of capability from questions of availability, qualification, and contractual responsibility. Measurement and competitive conclusions should remain tied to those same boundaries so that a broad corporate presence is not mistaken for demonstrated participation in every technology, application, or geography.

Figure 3. Global Ultra Fine Grinding Mill Market, Research Framework



2.3.1. Qualitative Analysis

Qualitative analysis examines the purchasing relationship behind each offering: who selects the mill, who supplies the complete package, what the buyer must qualify, and which party remains responsible for integration and support. Standalone Mills and Integrated Milling Packages provide distinct comparison contexts because the procurement decision concerns both equipment fit and the allocation of commercial responsibility.

Buyer qualification, switching requirements, service continuity, licensing, and channel authority are questions for evidence rather than presumed characteristics of a technology

category. Professional perspectives can challenge explanations of these mechanisms, but they do not independently establish supplier capability or numerical market conclusions.

2.3.2. Quantitative Analysis

The quantitative framing uses USD expressed as absolute monetary values and preserves the distinct historical, base, estimated, and forecast period roles. Commercial observations require alignment on the offering, period, geography, and supply scope before they can support comparison; an integrated package and a standalone mill are not automatically equivalent observations.

The segmentation axes describe different attributes of the same market. Technology, processed material, buyer industry, deployment scale, channel, processing state, and operating mode therefore do not represent additional markets to be added together. Numerical interpretation requires its own supporting evidence rather than extrapolation from expert participation, a product listing, or a qualitative purchasing hypothesis.

2.4. Market Size Estimation

The valuation boundary is the in-scope mill or milling package, rather than the value of the material processed or the purchaser's broader plant investment. Evidence must distinguish that offering from unrelated supplier activities before it can support market valuation.

Package content and channel relationships are material comparability conditions. A disclosure covering a broader equipment or engineering contract cannot automatically be treated as equivalent to a standalone mill disclosure. The historical, base, estimated, and forecast period roles also remain separate; evidence associated with one role does not by itself establish another.

2.4.1. Top-Down Approach

A top-down perspective can provide a scope and consistency check when a broader machinery, business-segment, or project disclosure contains an identifiable ultra fine grinding mill component. It does not make all activity within a covered Buyer Industry part of the equipment market.

Broader records are relevant to valuation only where their connection to the in-scope offering, geography, and period is defensible. Otherwise, they remain commercial context rather than a substitute for evidence about mills and milling packages.

2.4.2. Bottom-Up Approach

A bottom-up perspective focuses on identifiable in-scope offerings and documented supplier, package, and channel relationships. Product-level evidence can establish participation, but a catalog entry or channel appointment is not itself a financial observation.

Any aggregation requires a defensible relationship between the underlying commercial activity and the in-scope offering. Standalone Mills and Integrated Milling Packages need to

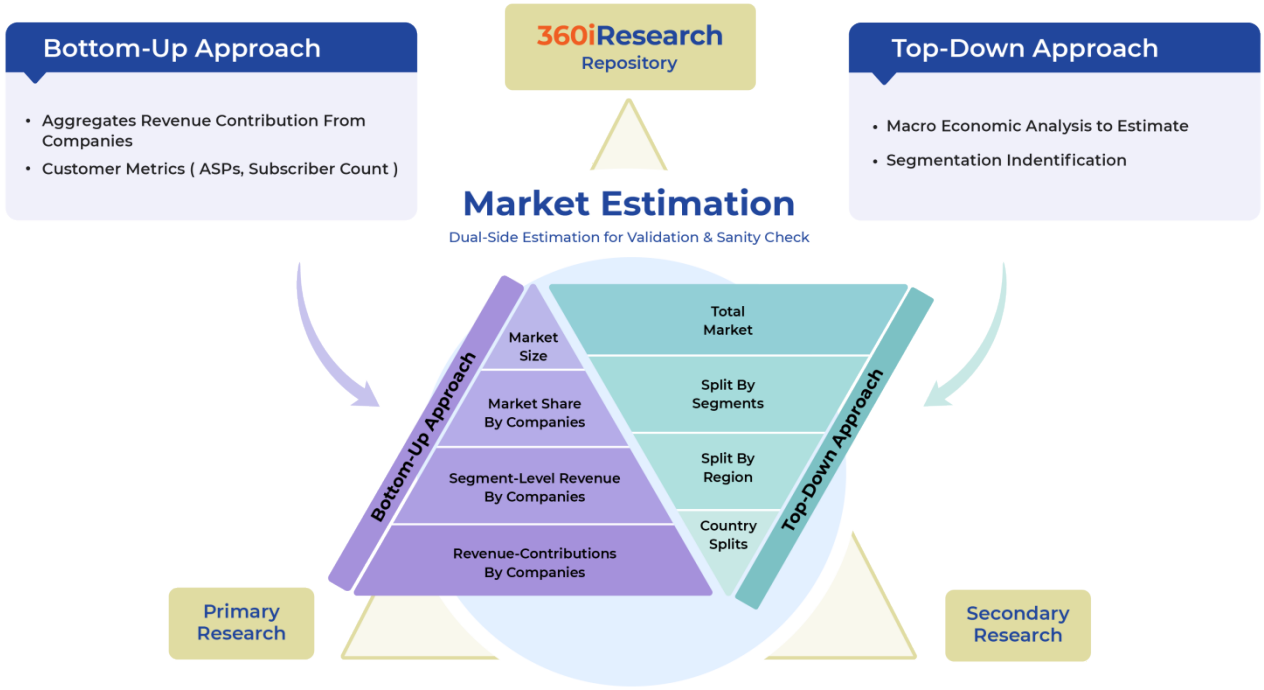
remain distinguishable, while manufacturer, agent, and reseller roles must be understood so that different descriptions of the same transaction are not mistaken for separate opportunities.

2.5. Data Triangulation

For ultra fine grinding mills, source agreement is meaningful only when the offering identity, package content, territory, and period address the same commercial claim. A portfolio description, a distributor appointment, and a buyer's procurement record may establish different parts of that claim rather than corroborate one another.

Differences in scope or timing should remain visible in the interpretation. Where records do not establish a common commercial condition, the resulting conclusion should be narrowed or made conditional rather than presented as reconciled agreement.

Figure 4. Global Ultra Fine Grinding Mill Market, Data Triangulation



2.6. Research Outcomes

The intended outcome is a commercially defensible comparison of mill suppliers, offering scopes, buyer requirements, and routes to market. The analysis should distinguish documented participation from advertised capability, and category inclusion from evidence of suitability for a particular buyer.

Decision support should clarify what a purchaser, supplier, distributor, or investor needs to verify before committing: the offering covered, contractual responsibility, applicable territory, qualification requirements, and continuing support obligations. Recommendations remain conditional where these commercial facts are unresolved.

2.7. Research Assumptions

- Comparisons assume that the obligations included in Standalone Mills and Integrated Milling Packages are sufficiently explicit to distinguish equipment scope, integration responsibility, and associated support. Otherwise, apparent differences between offers may reflect contractual scope rather than competitive advantage.
- The segmentation axes describe different attributes of an offering. Their inclusion does not imply that every combination of Mill Technology, Processed Material, Deployment Scale, Processing State, and Operating Mode is commercially available.
- Processed Material and Buyer Industry remain separate classification questions. A material name alone is not sufficient evidence of the purchaser's industry or the commercial requirements governing its equipment selection.
- Comparisons across study periods require continuity of offering identity and commercial rights, or an explicit explanation of changes. Product transfers, licensing changes, and channel appointments should not be presumed to apply unchanged across all study years.

2.8. Research Limitations

- Supplier or project disclosures may encompass mills alongside other equipment, engineering, or support obligations. Such disclosures cannot by themselves resolve a mill-specific comparison, which limits conclusions about comparable offering scope.
- A technology label or catalog description does not establish suitability, buyer qualification, or substitutability for a particular application. Procurement decisions require offering-specific commercial evidence rather than category membership alone.
- A Global study boundary does not imply that every supplier can sell, deliver, or support equipment in every jurisdiction. Territory-specific rights and commitments must be established before drawing a local market-access conclusion.
- Advertised availability, a channel appointment, an authorization, a purchase commitment, and completed delivery establish different commercial conditions. Evidence of one should not be treated as proof of the others when interpreting adoption or supplier participation.

3. Executive Summary

3.1. Introduction

The Global Ultra Fine Grinding Mill market is defined by application-qualified purchasing and the responsibility supplied with equipment, not by an interchangeable grinding label. Standalone Mills and Integrated Milling Packages serve Laboratory, Pilot, and Industrial Production contexts, with included technologies and configurations providing separate comparison lenses. RETSCH's Emax instrument and mineral-grinding packages such as HIGmill Plant illustrate why buyers must align deployment, required duty, supplied scope, and support before comparing offers.

Competition also depends on who controls the offering. Metso's April xx.xx 2025 acquisition of Swiss Tower Mills Minerals internalized an existing exclusive HIGmill relationship; the historical names do not create independent HIGmill bidders. IsaMill instead combines Glencore Technology's integration role with NETZSCH Group's manufacturing expertise. Buyers should compare qualified technology alternatives and identify the organizations accepting each obligation. Broader package responsibility and customer-managed installation are different commercial choices, while catalog presence establishes neither a binding offer nor destination-specific fulfillment.

Sources & Evidence

1. IsaMill - About
   · Glencore Technology advertises IsaMill modular delivery for local-contractor installation and a turnkey alternative. These establish distinct responsibility choices rather than universally equivalent packages. ([glencoretechnology.com](https://www.glencoretechnology.com/en/technologies/isamill/about))
2. IsaMill - NETZSCH Grinding & Dispersing
   · NETZSCH assigns IsaMill manufacturing and design expertise to itself and installation, commissioning, and integration-related support to Glencore Technology. These are complementary roles within one branded offering. ([grinding.netzsch.com](https://grinding.netzsch.com/en/products-and-solutions/wet-grinding/isamill/))
3. Metso Completes Acquisition of Swiss Tower Mills Minerals
   · Metso completed its Swiss Tower Mills Minerals acquisition on April xx.xx 2025. The announcement identifies preceding exclusive HIGmill sales rights, supporting internalization of an existing relationship rather than another independent HIGmill bidder. ([metso.com](https://www.metso.com/corporate/media/news/2025/xx.xx/metso-strengthens-its-position-as-a-leading-comminution-technology-and-services-supplier-for-mining-industry-completes-acquisition-of-swiss-tower-mills-minerals/))
4. HIGmill Plant - Metso
   · Metso markets HIGmill Plant as a mill with pre-engineered auxiliary modules and installation packages ranging from basic support to EPC. This establishes differentiated equipment and delivery scope. ([metso.com](https://www.metso.com/portfolio/higmill-plant/))
5. HOSOKAWA ALPINE Aktiengesellschaft - Conditions of Sale 371_00 EN
   · Hosokawa Alpine's conditions distinguish catalogs from offers and make the written contract and order confirmation authoritative for scope. This supports separating portfolio presence from a binding fulfillment commitment. ([hosokawa-alpine.com](https://www.hosokawa-alpine.com/fileadmin/allgemein/Legal/AGB/AGB_Verkaufsbedingungen_en_371_00.pdf))

6. Emax - High Energy Ball Mill - RETSCH
   · RETSCH markets Emax as a high-energy ball mill for ultrafine sample preparation. Its instrument context supports a distinct comparison from industrial mineral-grinding packages, without establishing cross-application equivalence. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/emax/))

3.2. CXO Perspective

Chief executives and investment committees should allocate capital against the responsibilities actually transferred. HIGmill Plant's basic-to-EPC options and IsaMill's local-installation and turnkey alternatives support comparing delegation with narrower supply. Prefer broader delivery only where accepted handover obligations and remedies address work the purchaser would otherwise manage. Capable customer teams can retain greater interface control through separately coordinated installation; package marketing alone does not establish the investment benefit.

OEM commercial leaders should stage project-specific resource commitments against purchaser authorization and agreed scope. Metso's reported equipment orders alongside tariff caution do not support a blanket investment freeze, but neither establish conversion of every inquiry. Milestone-led allocation limits premature exposure while potentially sacrificing early engagement.

Technology owners and channel investors should finance regional entry only when a partner contributes documented equipment rights and accepted local obligations. Roytec Global (Pty) Ltd's BGRIMM-MAT equipment-and-support proposition illustrates that contribution, not an available appointment for another entrant. Confirm territory, seller authority, warranty escalation, and remedies before preferring intermediation over direct supply. EU importer verification duties remain separate. Direct selling or deferral is preferable when the proposed mandate cannot support the commitment.

Sources & Evidence

1. IsaMill - About
   · The local-installation and turnkey models support comparing delegated coordination with customer-retained interfaces. Their investment implications are conditional economic interpretations. ([glencoretechnology.com](https://www.glencoretechnology.com/en/technologies/isamill/about))
2. General Product Compliance - Your Europe
   · EU guidance assigns importers verification duties concerning manufacturer conformity, documentation, markings, and accompanying information. Intermediated selling does not itself remove those duties. ([europa.eu](https://europa.eu/youreurope/business/product-rules-compliance/general-product-compliance/index_en.htm))
3. HIGmill Plant - Metso
   · The advertised basic-to-EPC alternatives support comparing retained and delegated obligations. Investment benefit and comprehensive liability depend on the accepted contract, not the portfolio description. ([metso.com](https://www.metso.com/portfolio/higmill-plant/))
4. HOSOKAWA ALPINE Aktiengesellschaft - Conditions of Sale 371_00 EN
   · The conditions make contractual scope authoritative and require company confirmation of representative transactions. They illustrate responsibility and authority checks without establishing the terms of another supplier's contract. ([hosokawa-alpine.com](https://www.hosokawa-alpine.com/fileadmin/allgemein/Legal/AGB/AGB_Verkaufsbedingungen_en_371_00.pdf))

5. Metso's Financial Statements Review January 1-December 31, 2025
   · Metso's February xx.xx 2026 financial release reports equipment-order activity alongside tariff-related caution in its broader business. Their coexistence supports project-specific commitment checks, not a market-wide investment freeze or guaranteed inquiry conversion.
   ([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/metsos-financial-statements-review-january-xx.xx--december-xx.xx-2025/))
6. Products - Attrition Mills - Roytec Global
   · Roytec markets GJM ultrafine equipment using BGRIMM-MAT technology and associated equipment, services, and spares in named territories. This establishes a regional contribution, not available representation rights for another entrant or negotiated customer remedies.
   ([roytecglobal.com](https://roytecglobal.com/products/products-attrition-mills/))

3.3. New Revenue Opportunities

Conditional revenue themes include mineral-milling packages for purchasers with documented coordination gaps; eligible institutional laboratory purchases requiring equipment, installation, and local support; F.P.S. Food and Pharma Systems s.r.l.'s named LaboMill-xx.xx and Pm1 combinations with FPS isolators; and asset-specific repair, rental, or supported reuse alternatives to replacement. These routes require identifiable purchasing needs and accepted fulfillment obligations. Customer capture through NETZSCH Group's announced MESNAC INTELLIGENT battery partnership remains unresolved until a funded milling scope, lead counterparty, and purchase commitment are established. The Opportunity Mapping section provides the detailed assessment.

Sources & Evidence

1. IsaMill - About
   · IsaMill's delivery alternatives provide a narrower-supply counterforce to the mineral-package opportunity; broader scope requires an account-specific need.
   ([glencoretechnology.com](https://www.glencoretechnology.com/en/technologies/isamill/about))
2. Technical Service - RETSCH
   · RETSCH offers individual services and service plans, while expressly limiting plan availability by country. Institutional fulfillment therefore requires territorial support confirmation.
   ([retsch.com](https://www.retsch.com/contact-services/technical-service/))
3. Supply, Installation and Commissioning of Planetary Ball Mill - IISER Thiruvananthapuram
   · IISER Thiruvananthapuram requested planetary-ball-mill supply, installation, and commissioning. The purchasing notice supports a qualified equipment-and-fulfillment opportunity rather than completed adoption.
   ([iisertvm.ac.in](https://www.iisertvm.ac.in/tenders/read/tenders-supply-installation-and-commissioning-of-planetary-ball-mill))
4. NETZSCH and MESNAC Partner to Deliver Turnkey Solutions for Battery Industry
   · The June xx.xx 2025 NETZSCH-MESNAC INTELLIGENT announcement combines grinding and dispersing with integration capabilities. It does not establish an individual customer award or negotiated remedies.
   ([grinding.netzsch.com](https://grinding.netzsch.com/en/news/2025/netzsch-and-mesnac-partner-do-deliver-turnkey-solutions-for-battery-industry))
5. Rental and Used Machines - Hosokawa Alpine
   · Hosokawa Alpine advertises rental, refurbished Originals machinery, and buy-back, supporting conditional equipment alternatives to replacement.
   ([hosokawa-alpine.com](https://www.hosokawa-alpine.com/services/solutions/alpine-rentals-and-used-machines/))

6. High Energy Planetary Ball Mill - IIT Bombay
   · IIT Bombay's planetary-ball-mill solicitation, with a February xx.xx 2024 due date, required vendor and e-tender registration. It establishes purchaser-specific eligibility conditions, not continuing demand or an award. ([iitb.ac.in](https://www.iitb.ac.in/tenders/high-energy-planetary-ball-mill))
7. HIGmill Plant - Metso
   · HIGmill Plant's delivery alternatives support the mineral-package opportunity theme, conditional on a purchaser's documented coordination gap and accepted fulfillment obligations. ([metso.com](https://www.metso.com/portfolio/higmill-plant/))
8. Metso's service center expansion in Antofagasta elevates support for Chile's mining industry
   · Metso's completed Antofagasta expansion includes HIG mill repair and refurbishment capability. It supports an eligible Chilean asset-support inquiry, not a reserved commitment for every owner. ([metso.com](https://www.metso.com/corporate/media/news/2025/xx.xx/metsos-service-center-expansion-in-antofagasta-elevates-support-for-chiles-mining-industry/))
9. Products, Page 2 - FPS Pharma
   · FPS expressly identifies LaboMill-xx.xx and Pm1 laboratory jet mills as integrable within FPS isolators. This supports the named combined-sourcing theme without establishing universal compatibility, buyer acceptance, or project liability. ([fps-pharma.com](https://www.fps-pharma.com/product/page/xx.xx/))

3.4. Next-Generation Business Models

Documented commercial alternatives extend beyond a standalone equipment sale without establishing a market-wide change in purchasing behavior. Hosokawa Alpine advertises rental, refurbished Originals equipment, and buy-back; RETSCH offers individual services alongside country-limited service plans. These arrangements distinguish temporary equipment access, supported ownership, and continuing service commitment. Selection requires an eligible asset, territorial coverage, integration responsibility, and clear exit obligations. Outright purchase or individual service remains an alternative when restricted selection or provider dependence outweighs flexibility.

Connected support adds a conditional service relationship. Metso's Digital Performance Services cover grinding and combine AI-powered analytics with expert diagnosis; on-site action can be combined with Life Cycle Services. This establishes an offering, not demonstrated benefits for every ultrafine mill. Mining owners should confirm model eligibility, data permissions, integration support, and human escalation before committing. Conventional expert support remains an alternative where connectivity or data access is unsuitable.

Sources & Evidence

1. Technical Service - RETSCH
   · Individual services and plans establish different continuing-support commitments. Country limitations counter a universal service-model assumption; the offering does not prove economic superiority. ([retsch.com](https://www.retsch.com/contact-services/technical-service/))
2. Rental and Used Machines - Hosokawa Alpine
   · The acquisition programs distinguish temporary access and supported reuse from a new-equipment purchase. Asset-specific availability and governing obligations require an offer. ([hosokawa-alpine.com](https://www.hosokawa-alpine.com/services/solutions/alpine-rentals-and-used-machines/))
3. Digital Performance Services - Metso
   · Metso's Digital Performance Services cover grinding and pair AI-powered analytics with expert diagnosis. On-site action can be combined with Life Cycle Services; model eligibility and realized benefits are not established for every mill. ([metso.com](https://www.metso.com/portfolio/data-driven-performance-services/))

3.5. Industry Roadmap

For 2026-2027, resolve purchaser eligibility and the applicable EU placing-on-market framework before delivery commitments. The Machinery Regulation generally applies from January xx.xx 2027, making conformity documentation and the responsible economic operator important for transactions spanning the transition. IISER Thiruvananthapuram's September xx.xx 2026 request for supply, installation, and commissioning illustrates a purchasing milestone, not an award or completed installation. The regulatory transition alone should not justify replacement.

For 2028-2029, deepen integration commitments only when an identified customer, accepted lead contract, and fulfillment record substantiate the route. The NETZSCH Group-MESNAC INTELLIGENT announcement does not establish customer-deployment timing. Metso's completed Antofagasta expansion provides a Chilean HIG mill repair alternative, but asset coverage, scheduling, and remedies require confirmation before a location-specific capability supports broader commitments.

For 2030-2032, preserve support continuity, usable data permissions, renewal accountability, and exit options in lifecycle agreements. Connected service, conventional support, rental, supported reuse, and replacement remain conditional alternatives rather than an inevitable succession. Documented asset eligibility and customer obligations should determine renewal or switching, not a launch or partnership announcement alone.

Sources & Evidence

1. Supply, Installation and Commissioning of Planetary Ball Mill - IISER Thiruvananthapuram
   · The request was published on September xx.xx 2026. Its stated scope establishes a purchasing milestone, not an award or completed installation. ([iisertvm.ac.in](https://www.iisertvm.ac.in/tenders/read/tenders-supply-installation-and-commissioning-of-planetary-ball-mill))
2. General Product Compliance - Your Europe
   · Manufacturer, authorized-representative, importer, and distributor roles carry different obligations. This supports identifying the responsible economic operator for applicable EU delivery commitments. ([europa.eu](https://europa.eu/youreurope/business/product-rules-compliance/general-product-compliance/index_en.htm))
3. NETZSCH and MESNAC Partner to Deliver Turnkey Solutions for Battery Industry
   · The announcement provides a coordinated commercial proposition, not customer-deployment timing. Identified purchasing and fulfillment milestones remain conditions for deeper medium-term commitment. ([grinding.netzsch.com](https://grinding.netzsch.com/en/news/2025/netzsch-and-mesnac-partner-do-deliver-turnkey-solutions-for-battery-industry))
4. Rental and Used Machines - Hosokawa Alpine
   · Advertised rental and reuse routes support preserving later acquisition and exit choices; they do not establish an inevitable replacement timetable. ([hosokawa-alpine.com](https://www.hosokawa-alpine.com/services/solutions/alpine-rentals-and-used-machines/))
5. Machinery - European Commission
   · The European Commission identifies January xx.xx 2027 as the Machinery Regulation's mandatory application date and distinguishes earlier EU market placement under the preceding directive. This supports transition-specific conformity planning rather than an assumed replacement requirement. ([single-market-economy.ec.europa.eu](https://single-market-economy.ec.europa.eu/sectors/mechanical-engineering/machinery_en))

6. Digital Performance Services - Metso

   · The connected, expert-supported offering supplies a premise for conditional lifecycle planning. Data permissions, support continuity, and exit choices are commercial prerequisites, not demonstrated future outcomes. ([metso.com](https://www.metso.com/portfolio/data-driven-performance-services/))

7. Metso’s service center expansion in Antofagasta elevates support for Chile’s mining industry

   · The August xx.xx 2025 announcement records a completed expansion and HIG mill repair capability. Asset eligibility, scheduling, and remedies remain conditions for the medium-term commitment scenario. ([metso.com](https://www.metso.com/corporate/media/news/2025/xx.xx/metsos-service-center-expansion-in-antofagasta-elevates-support-for-chiles-mining-industry/))

4. Market Overview

4.1. Introduction

[redacted] Processing State and Operating Mode describe an offering's commercial configuration, while Processed Material and Buyer Industry remain separate purchasing lenses. These attributes do not establish that every combination is available or interchangeable.

[redacted] These are evidenced product families, not assurances of local availability, customer qualification, or equivalent application performance. Commercial comparison therefore starts with the supplied equipment and contractual responsibility, rather than the shared use of a grinding label.

Figure 5. Global Ultra Fine Grinding Mill Market Size, 2017-2040 (USD Million, Growth %)

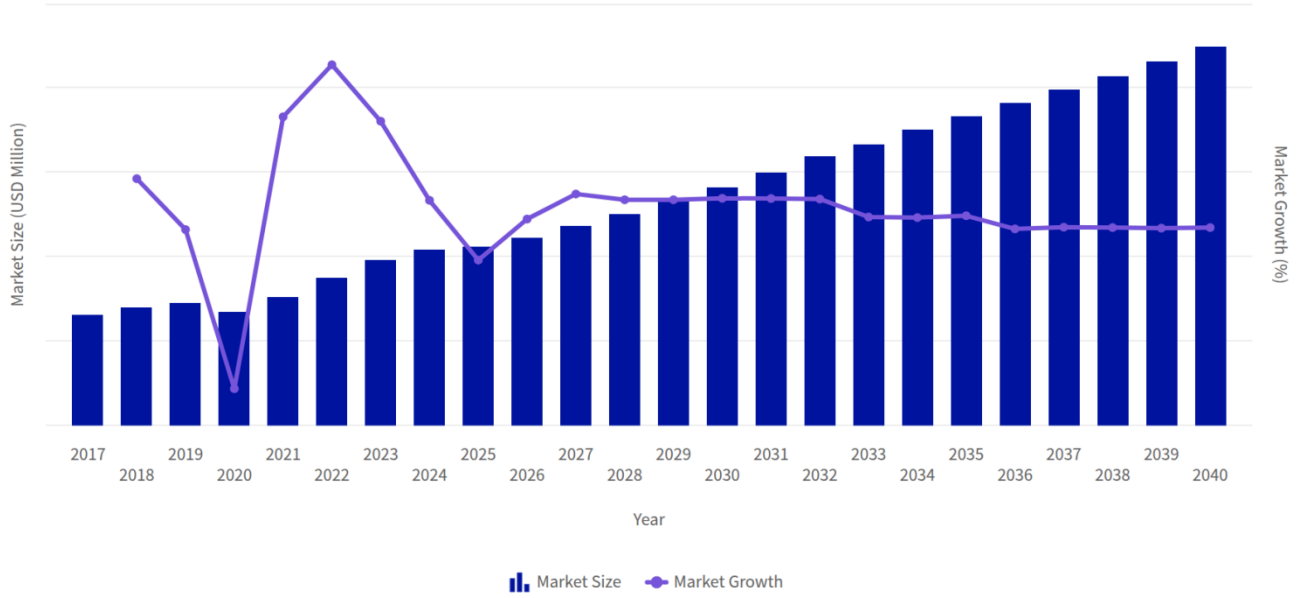


Table 2. Global Ultra Fine Grinding Mill Market Size, 2017-2040 (USD Million, Growth %)

Metric	2017	2024	2025	2026	2027	2032	2040
Market Size (USD Million)	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Market Growth (%)	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx

Sources & Evidence

1. Planetary Ball Mill PM 100
   - RETSCH markets PM xx.xx as a benchtop planetary ball mill supporting dry and wet grinding. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx))
2. STAR BURST: Wet Pulverization and Dispersion Device
   - SUGINO identifies STAR BURST as wet-jet milling equipment and lists desktop, small-scale, and large-scale models. No operating details are used. ([sugino.com](https://www.sugino.com/en/products/wet-type-atomization-equipment/))
3. AFG Fluidised Bed Jet Mill
   - Hosokawa Alpine markets AFG as an opposed-jet mill. ([hosokawa-alpine.com](https://www.hosokawa-alpine.com/powder-particle-processing/technologies/grinding-and-classifying/jet-mills/afg/))
4. HIGmill High Intensity Grinding Mill
   - Metso's portfolio identifies HIGmill as a fine and ultra-fine grinding offering for minerals. ([metso.com](https://www.metso.com/portfolio/higmill-high-intensity-grinding-mill/?utm_source=openai))

4.2. Key Growth Contribution

Accepted integration obligations provide a potential route to broader milling-package participation, not an established general cause of mill adoption. HIGmill Plant and IsaMill advertise different degrees of delivery responsibility. Suppliers can compete over obligations a purchaser would otherwise coordinate, but should first establish an identifiable equipment requirement and the customer's retained-responsibility gap. The counterforce is a buyer able to manage those interfaces through its own team or contractors. Broader participation depends on an accepted in-scope package, handover obligations, and remedies rather than a package label or an adjacent modernization reference.

Figure 6. Global Ultra Fine Grinding Mill Market, Key Growth Contribution, by Region, 2025-2032 (USD Million)

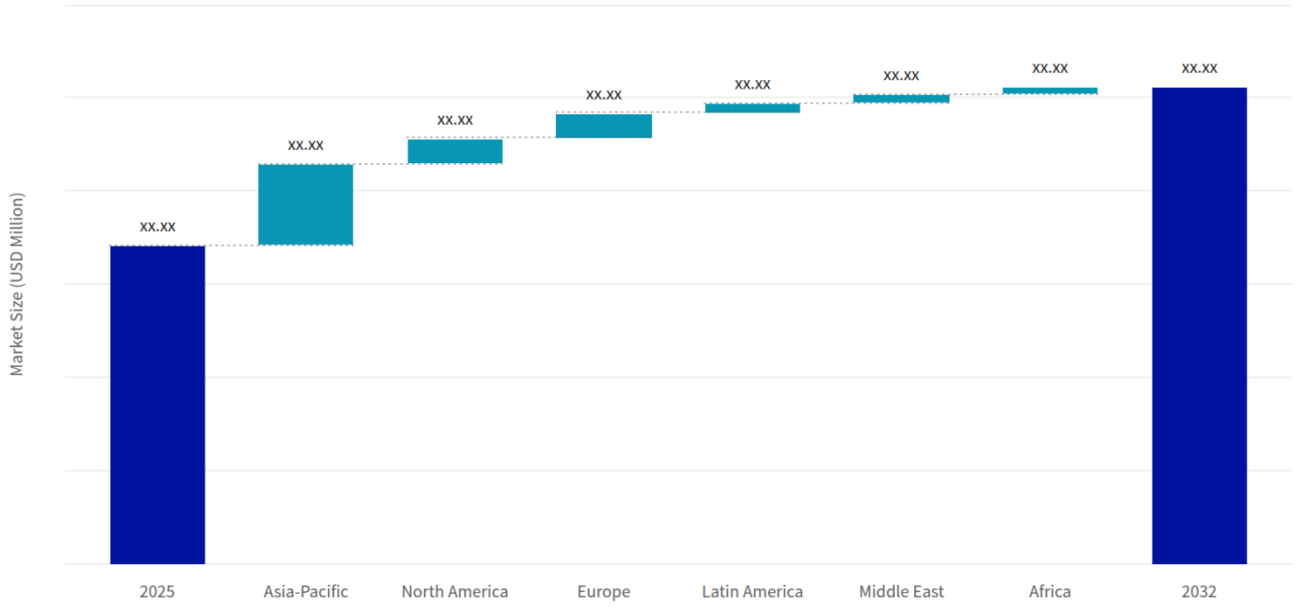


Figure 7. Global Ultra Fine Grinding Mill Market, Key Growth Contribution, by Country, 2025-2032 (CAGR %)

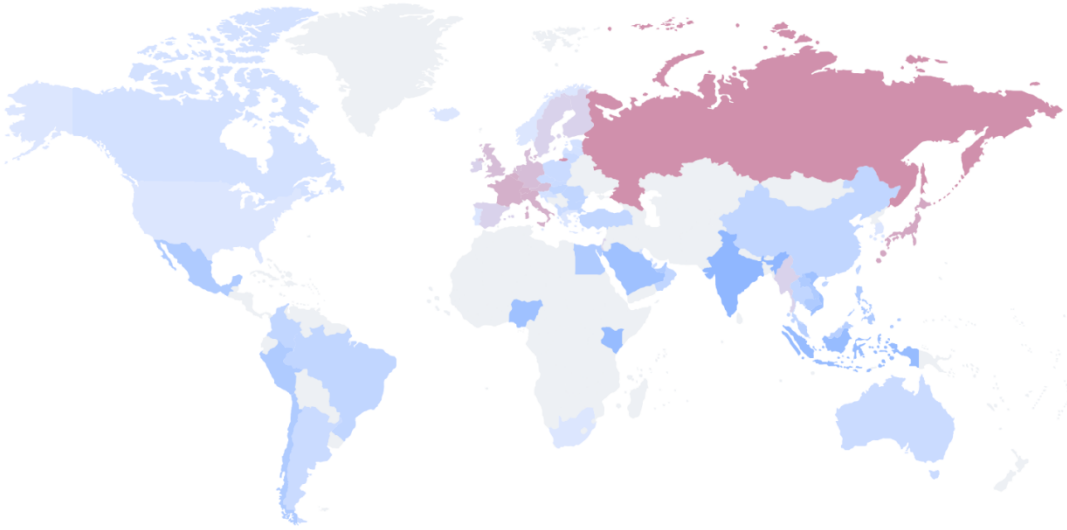


Table 3. Global Ultra Fine Grinding Mill Market, Key Growth Contribution, 2025-2032

Scope	Leading Category	Added Market Size (USD Million)	Growth Share (%)	CAGR (%)
Buyer Industry	xx.xx	xx.xx	xx.xx	xx.xx
Country	xx.xx	xx.xx	xx.xx	xx.xx
Deployment Scale	xx.xx	xx.xx	xx.xx	xx.xx
Mill Technology	xx.xx	xx.xx	xx.xx	xx.xx
Operating Mode	xx.xx	xx.xx	xx.xx	xx.xx
Processed Material	xx.xx	xx.xx	xx.xx	xx.xx
Processing State	xx.xx	xx.xx	xx.xx	xx.xx
Region	xx.xx	xx.xx	xx.xx	xx.xx
Sales Channel	xx.xx	xx.xx	xx.xx	xx.xx
Supply Scope	xx.xx	xx.xx	xx.xx	xx.xx

Sources & Evidence

1. IsaMill - About
   - The delivery models establish scope choices, not universal delegation preference.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Delivery alternatives permit mill-only supply or additional auxiliary equipment; actual equipment scope determines attribution.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Delivery alternatives permit mill-only supply or additional auxiliary equipment; actual equipment scope determines attribution.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Modular auxiliary-inclusive and turnkey alternatives support differentiated package scope, without proving a global adoption percentage.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Modular auxiliary-inclusive and turnkey alternatives support differentiated package scope, without proving a global adoption percentage.
2. HIGmill Plant - Metso
   - Alternative installation scopes establish a commercial delegation option, not a demonstrated purchasing cause.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Standalone marketing terminology does not establish the study's Standalone Mills equipment scope.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Standalone marketing terminology does not establish the study's Standalone Mills equipment scope.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: HIGmill Plant includes pre-engineered auxiliary modules, supporting classification as an equipment package.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: HIGmill Plant includes pre-engineered auxiliary modules, supporting classification as an equipment package.

3. Mach for mixing/kneading/crushing/grinding etc imports by country | 2024
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: 2024 gross machinery imports provide the purchasing-index input: U.S. HS xx.xx imports were USD xx.xx. These are broad machinery purchases, not ultrafine mill sales.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: 2024 gross machinery imports provide the purchasing-index input: U.S. HS xx.xx imports were USD xx.xx. These are broad machinery purchases, not ultrafine mill sales.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Country observations include Brazil USD xx.xx and Argentina USD xx.xx under HS xx.xx supporting the regional model's purchasing inputs.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country observations include Brazil USD xx.xx and Argentina USD xx.xx under HS xx.xx supporting the regional model's purchasing inputs.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: HS xx.xx imports include Germany USD xx.xx and France USD xx.xx; individual country records, rather than the EU aggregate, enter the allocation.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: HS xx.xx imports include Germany USD xx.xx and France USD xx.xx; individual country records, rather than the EU aggregate, enter the allocation.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Turkey USD xx.xx and Saudi Arabia USD xx.xx are broad machinery purchasing inputs, not observed qualifying-market numerators.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Turkey USD xx.xx and Saudi Arabia USD xx.xx are broad machinery purchasing inputs, not observed qualifying-market numerators.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: South Africa USD xx.xx and Egypt USD xx.xx, together with additional African reporters, anchor the purchasing baskets.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: South Africa USD xx.xx and Egypt USD xx.xx, together with additional African reporters, anchor the purchasing baskets.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: China USD xx.xx, Indonesia USD xx.xx and Japan USD xx.xx anchor the regional purchasing index before explicit local-supply adjustments.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: China USD xx.xx, Indonesia USD xx.xx and Japan USD xx.xx anchor the regional purchasing index before explicit local-supply adjustments.

4. Crushing/grinding machines for earth/ stone/ore imports by country | 2024
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: 2024 mineral crushing/grinding imports supply the secondary purchasing-index input; they contain out-of-scope ordinary crushers and are not treated as qualifying market revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: 2024 mineral crushing/grinding imports supply the secondary purchasing-index input; they contain out-of-scope ordinary crushers and are not treated as qualifying market revenue.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Country-level mineral machinery import observations support the Latin American purchasing basket and its explicitly modeled mining/package adjustments.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country-level mineral machinery import observations support the Latin American purchasing basket and its explicitly modeled mining/package adjustments.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: European national import observations provide the mineral-machinery component of the common purchasing index; the regional aggregate is not an extra country.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: European national import observations provide the mineral-machinery component of the common purchasing index; the regional aggregate is not an extra country.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Saudi Arabia and Turkey have separately reported mineral machinery imports, supporting national rather than bloc-wide purchasing inputs.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Saudi Arabia and Turkey have separately reported mineral machinery imports, supporting national rather than bloc-wide purchasing inputs.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: African reporter observations include major destinations outside the mandatory-country inventory, constraining a substantial noncatalog demand pool.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: African reporter observations include major destinations outside the mandatory-country inventory, constraining a substantial noncatalog demand pool.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Asia-Pacific and Central Asian reporter observations anchor the mineral-machinery component and unlisted-destination basket.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Asia-Pacific and Central Asian reporter observations anchor the mineral-machinery component and unlisted-destination basket.
5. Mach for mixing/kneading/crushing/grinding etc imports by country | 2021
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports were USD xx.xx. The model applies a qualified timing/access bridge and does not describe this as current trade.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports were USD xx.xx. The model applies a qualified timing/access bridge and does not describe this as current trade.
6. Crushing/grinding machines for earth/ stone/ore imports by country | 2021
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports of USD xx.xx provide the second historical purchasing primitive; the 2025 and 2032 allocations remain modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports of USD xx.xx provide the second historical purchasing primitive; the 2025 and 2032 allocations remain modeled.

7. World Manufacturing Production and Trade, Quarter IV 2025
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The report's mixed North American manufacturing conditions constrain a uniform high-growth assumption; output is not equated with mill purchasing.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Recent Latin American manufacturing weakness is counterevidence to immediate region-wide acceleration; forecast equipment factors remain conditional.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: European manufacturing stagnation and national divergence constrain the assumed relative equipment-purchasing path.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country-level manufacturing heterogeneity constrains the forecast; no single regional output rate is converted into machinery demand.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: African output observations include national counterexamples, supporting differentiated rather than uniform purchasing assumptions.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: China and other Asian manufacturing expansion, with national exceptions, provides directional context rather than an observed ultrafine-equipment growth rate.
8. Business Unit Grinding & Dispersing - NETZSCH
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The supplier documents local grinding-equipment production and commercial operations in Germany, the United States, Brazil, Russia, India and China. This supports considering domestic supply omitted by import statistics, but does not measure the model's correction factors.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The supplier documents local grinding-equipment production and commercial operations in Germany, the United States, Brazil, Russia, India and China. This supports considering domestic supply omitted by import statistics, but does not measure the model's correction factors.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Documented local commercial supply in China and India qualifies an import-only purchasing model; manufacturing location is not itself counted as buyer demand.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Documented local commercial supply in China and India qualifies an import-only purchasing model; manufacturing location is not itself counted as buyer demand.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Documented U.S. production and local commercial operations support an explicit, uncertain domestic-supply bridge rather than treating imports as the entire numerator.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Documented U.S. production and local commercial operations support an explicit, uncertain domestic-supply bridge rather than treating imports as the entire numerator.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Brazilian local production and commercial operations qualify reliance on imports alone, without establishing the assumed domestic sales amount.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Brazilian local production and commercial operations qualify reliance on imports alone, without establishing the assumed domestic sales amount.
9. High Energy Planetary Ball Mill - IIT Bombay
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The 2024 solicitation concerns one mill and requires two registration stages. It supports a purchaser-specific access constraint, not an award, national procurement conversion rate or forecast revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The 2024 solicitation concerns one mill and requires two registration stages. It supports a purchaser-specific access constraint, not an award, national procurement conversion rate or forecast revenue.

10. Metso receives order for grinding mills to a copper project in Africa
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The EUR xx.xx August 2024 HIGmill equipment/auxiliary/services order establishes a commercial package in Africa but identifies neither country nor annual revenue recognition. It constrains attribution and is not added to 2025 demand.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The EUR xx.xx August 2024 HIGmill equipment/auxiliary/services order establishes a commercial package in Africa but identifies neither country nor annual revenue recognition. It constrains attribution and is not added to 2025 demand.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Approximately EUR xx.xx 2024 HIGmill order includes auxiliaries and services; a package-scale anchor, not recognized annual revenue.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Approximately EUR xx.xx 2024 HIGmill order includes auxiliaries and services; a package-scale anchor, not recognized annual revenue.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The copper-project award establishes an ore/concentrate commercial purchasing context.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The copper-project award establishes an ore/concentrate commercial purchasing context.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The award concerns an African mining project; it does not disclose the global mining-buyer share.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The award concerns an African mining project; it does not disclose the global mining-buyer share.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Large industrial equipment procurement supports the production-scale category premise.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Large industrial equipment procurement supports the production-scale category premise.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The stirred-package order supports the Media Mills value-weight model and continuing commercial-demand premise, with order-to-revenue timing unresolved. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The stirred-package order supports the Media Mills value-weight model and continuing commercial-demand premise, with order-to-revenue timing unresolved. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
11. Methodology - UNIDO Industrial Analytics Platform
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The methodology notes that U.S. trade coverage includes Puerto Rico, reinforcing that the national purchasing proxy must not be renormalized to the xx.xx-state inventory.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The methodology notes that U.S. trade coverage includes Puerto Rico, reinforcing that the national purchasing proxy must not be renormalized to the xx.xx-state inventory.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The methodology identifies Monaco within French trade coverage; the customs input is an imperfect national demand proxy rather than a directly observed country numerator.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The methodology identifies Monaco within French trade coverage; the customs input is an imperfect national demand proxy rather than a directly observed country numerator.

12. Hosokawa Micron - FY2025 Financial Results Presentation, November 25, 2025 (Japanese)
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; material attribution modeled.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; material attribution modeled.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; establishment attribution modeled.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; establishment attribution modeled.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; buyer attribution assumed.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; buyer attribution assumed.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; qualifying power attribution unverified.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; qualifying power attribution unverified.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; institutional attribution assumed.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; institutional attribution assumed.
13. Commission Processing - NIPPON COKE & ENGINEERING CO., LTD.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Own commercial processing portfolio identifies glass, ceramics and inorganic materials; establishes material mapping, not equipment revenue.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own commercial processing portfolio identifies glass, ceramics and inorganic materials; establishes material mapping, not equipment revenue.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Organic pigments are named commercial processing materials.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Organic pigments are named commercial processing materials.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Metal powders are named commercial processing materials.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Metal powders are named commercial processing materials.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Carbon is identified in the operator's commercial grinding portfolio.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Carbon is identified in the operator's commercial grinding portfolio.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Thermosetting resin supports a polymer-material category premise.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Thermosetting resin supports a polymer-material category premise.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Ink-related grinding establishes a commercial reference but does not resolve whole-formulation versus constituent duty.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Ink-related grinding establishes a commercial reference but does not resolve whole-formulation versus constituent duty.

14. Micronization / Grinding - A. Ebbecke Verfahrenstechnik AG
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Commercial contract-grinding coverage includes natural materials and food ingredients; processing fees are excluded from equipment value.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Commercial contract-grinding coverage includes natural materials and food ingredients; processing fees are excluded from equipment value.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Plastic granulates and resins establish material coverage, not downstream customers' equipment ownership.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Plastic granulates and resins establish material coverage, not downstream customers' equipment ownership.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operator-side food-processing reference supports establishment attribution rather than automatically assigning equipment to its customers.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operator-side food-processing reference supports establishment attribution rather than automatically assigning equipment to its customers.
15. Manufacturing Capabilities - Asbury Advanced Materials
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Own manufacturing disclosure identifies carbon-material grinding and micronization; supports the material-duty premise only.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own manufacturing disclosure identifies carbon-material grinding and micronization; supports the material-duty premise only.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Custom formulations and dispersions are commercial outputs, but joint whole-formulation milling remains unmeasured.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Custom formulations and dispersions are commercial outputs, but joint whole-formulation milling remains unmeasured.
16. Pyrum Innovations AG - Interim Group Report January 1 to June 30, 2025
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The purchaser's 2025 report records a grinding-plant installation associated with recovered carbon black; no downstream material revenue is counted.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The purchaser's 2025 report records a grinding-plant installation associated with recovered carbon black; no downstream material revenue is counted.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The report establishes an actual recovery-business equipment context, while the exact attributable mill expenditure remains undisclosed.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The report establishes an actual recovery-business equipment context, while the exact attributable mill expenditure remains undisclosed.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The disclosed commercial-site grinding installation supports Industrial Production classification.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The disclosed commercial-site grinding installation supports Industrial Production classification.

17. NRRI Advances Efficient Grinding Technology on the Iron Range
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The institution distinguishes a planned bench-scale purchase from its loaned pilot equipment; not a completed-sale census.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The institution distinguishes a planned bench-scale purchase from its loaned pilot equipment; not a completed-sale census.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The May xx.xx 2024 account identifies a loaned pilot stirred mill; unpaid placement is not counted as equipment-sale revenue.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The May xx.xx 2024 account identifies a loaned pilot stirred mill; unpaid placement is not counted as equipment-sale revenue.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operating research institute is distinct from its mining clients, supporting buyer/material separation.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operating research institute is distinct from its mining clients, supporting buyer/material separation.
18. Planetary Ball Mill PM 100 - RETSCH
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The PM xx.xx is marketed as a benchtop instrument, supporting the small-laboratory pool classification without establishing sales weight.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The PM xx.xx is marketed as a benchtop instrument, supporting the small-laboratory pool classification without establishing sales weight.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The individual-instrument offering supports a narrower equipment-supply alternative; package incidence remains modeled.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The individual-instrument offering supports a narrower equipment-supply alternative; package incidence remains modeled.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The product page advertises both dry and wet capability. Actual dual-state purchase inclusion remains an explicit model assumption. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The product page advertises both dry and wet capability. Actual dual-state purchase inclusion remains an explicit model assumption. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))

19. Jet Mill - Contract History CW2408170, CanadaBuys
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: A May xx.xx 2026 laboratory jet-mill award totals CAD xx.xx; a dated procurement check, not a 2025 shipment or global average price.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: A May xx.xx 2026 laboratory jet-mill award totals CAD xx.xx; a dated procurement check, not a 2025 shipment or global average price.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The record distinguishes Natural Resources Canada as buying organization from PSPC as contracting organization, supporting establishment attribution.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The record distinguishes Natural Resources Canada as buying organization from PSPC as contracting organization, supporting establishment attribution.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The jet-mill award totals CAD xx.xx and is dated May xx.xx 2026. It is a nearby-period laboratory purchasing comparator, not a 2025 recognized sale, and supplies neither a gas-jet subtype nor a definitive channel role. ([canadabuys.canada.ca](https://canadabuys.canada.ca/en/tender-opportunities/contract-history/cw2408170-xx.xx))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The jet-mill award totals CAD xx.xx and is dated May xx.xx 2026. It is a nearby-period laboratory purchasing comparator, not a 2025 recognized sale, and supplies neither a gas-jet subtype nor a definitive channel role. ([canadabuys.canada.ca](https://canadabuys.canada.ca/en/tender-opportunities/contract-history/cw2408170-xx.xx))
20. MFC Production Equipment - FiberLean
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The manufacturer's commercial offering targets pulp, paper and related establishments; it is not a measured industry sales share.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The manufacturer's commercial offering targets pulp, paper and related establishments; it is not a measured industry sales share.
21. Pulverizing Equipment - Coperion
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The broader portfolio names power-generation applications and separately lists ultrafine equipment; this limits, rather than verifies, the assumed qualifying power-buyer allocation.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The broader portfolio names power-generation applications and separately lists ultrafine equipment; this limits, rather than verifies, the assumed qualifying power-buyer allocation.
22. LG Energy Solution Releases 2025 Financial Results - January 29, 2026
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own 2025 revenue decline and dated 2026 capital-expenditure reduction target constrain battery-related equipment-adoption assumptions.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Existing-asset reuse strategy qualifies a direct downstream-demand-to-new-carbon-material-mill investment inference.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Buyer investment restraint constrains the relative application multiplier; upstream chemical attribution remains separately assumed.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own battery-manufacturer financial and investment plans provide a counter-test, not an ultrafine equipment purchasing total.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The January 2026 emphasis on reduced new investment qualifies automatic growth in broader equipment-package adoption.

23. UNSD Classification Detail - ISIC Rev.4, Class 3830: Materials Recovery
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The official classification distinguishes secondary-material recovery from manufacture of new final products; it supplies no equipment sales weight.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The official classification distinguishes secondary-material recovery from manufacture of new final products; it supplies no equipment sales weight.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Recovered-input use alone does not classify the equipment operator as a recovery establishment rather than a product manufacturer.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Recovered-input use alone does not classify the equipment operator as a recovery establishment rather than a product manufacturer.
24. Ultrafin Mill: Super Masscolloider, Masuko MKCA6-5J CE - University of Ljubljana
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The university inventories a laboratory ultrafine mill within wood science; the institutional operator is not a wood-products manufacturer.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The university inventories a laboratory ultrafine mill within wood science; the institutional operator is not a wood-products manufacturer.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The institutional inventory expressly identifies laboratory equipment, supporting deployment classification without establishing a purchase-year value.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The institutional inventory expressly identifies laboratory equipment, supporting deployment classification without establishing a purchase-year value.
25. Contract Manufacturing of Pharmaceuticals - YUKI GOSEI KOGYO CO., LTD.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operator distinguishes production jet mills from smaller equipment, supporting industrial deployment at a pharmaceutical contract manufacturer.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operator distinguishes production jet mills from smaller equipment, supporting industrial deployment at a pharmaceutical contract manufacturer.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The actual pharmaceutical manufacturing operator is distinct from customers outsourcing production; processing-service receipts remain excluded.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The actual pharmaceutical manufacturing operator is distinct from customers outsourcing production; processing-service receipts remain excluded.
26. Record year for Metso stirred mills as mining industry opts for energy-efficient comminution technology
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The disclosed stirred-equipment activity supports material Media Mills participation, not the final modeled parent share. ([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The disclosed stirred-equipment activity supports material Media Mills participation, not the final modeled parent share. ([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))

27. Bühler strengthens its market position

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The disclosed battery-related and other application orders constrain differentiated Media Mills forecast assumptions without converting orders directly to annual equipment revenue. ([buhlergroup.com](https://www.buhlergroup.com/global/en/media/media-releases/b%C3%BChler-strengthens-its-marketposition.html))

28. Management Greetings | HOSOKAWAMICRON CORPORATION

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Hosokawa reports FY2025 net sales of JPY xx.xx, down xx.xx%, and orders down xx.xx%. The diversified-company result challenges uniform purchasing acceleration and constrains, rather than directly measures, technology-mix assumptions. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/ir/management_policy/management_greetings.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Hosokawa reports FY2025 net sales of JPY xx.xx, down xx.xx%, and orders down xx.xx%. The diversified-company result challenges uniform purchasing acceleration and constrains, rather than directly measures, technology-mix assumptions. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/ir/management_policy/management_greetings.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The same broader financial contraction is counterevidence to assuming uniform Media Mills growth across suppliers; no corporate revenue is assigned directly to the category. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/ir/management_policy/management_greetings.html))

29. Details of micromeritics | HOSOKAWAMICRON CORPORATION

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The manufacturer identifies Innovomizer as a mechanical ultrafine offering; ordinary impact equipment is not automatically included. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The manufacturer identifies Innovomizer as a mechanical ultrafine offering; ordinary impact equipment is not automatically included. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

30. Ultra-Fine Grinding - Hosokawa Micron Malaysia

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The inspected ultrafine portfolio identifies AWM-F table-roller equipment, supporting the qualifying Roller Mills boundary, not its assumed counts or prices. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The inspected ultrafine portfolio identifies AWM-F table-roller equipment, supporting the qualifying Roller Mills boundary, not its assumed counts or prices. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

31. SWECO Vibratory Grinding and Particle Size Reduction Equipment

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Named wet/dry models establish dual-state availability; they do not establish the exact supplied configuration or a market-wide value share. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Named wet/dry models establish dual-state availability; they do not establish the exact supplied configuration or a market-wide value share. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))

32. Fine-cutting mill with rotating classifying feature - the sensational new development!

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The September xx.xx 2014 own-product announcement establishes a pre-base-year SecoMy S cutting offering described for ultrafine commercial applications. It is category evidence, not annual equipment revenue. ([grinding.netzsch.com](https://grinding.netzsch.com/en/news/2014/fine-cutting-mill-with-rotating-classifying-feature-the-sensational-new-development))

33. NETZSCH SecoMy S - Precision Cutting Redefined!
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The August 2026 SecoMy S brochure confirms continuing commercial ultrafine-cutting positioning and system-supply availability. It supports category persistence, not the assumed forecast spending share. ([grinding.netzsch.com](https://grinding.netzsch.com/_Resources/Persistent/xx.xx/e/xx.xx/b/8e4b5adcfc16fcc2d83974f8080d614cce1a2c01/NETZSCH_Fine_Cutting_Mill_SecoMy_S_e.pdf))
34. Wet Milling and Dispersing Device - Star Burst - Sugino Corp.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: SUGINO's Star Burst portfolio identifies wet-jet equipment across research and production purchasing contexts. Only milling-attributable supply is included; adjacent droplet-only or dispersion activity is not automatically counted. ([suginocorp.com](https://www.suginocorp.com/star-burst/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: SUGINO's Star Burst portfolio identifies wet-jet equipment across research and production purchasing contexts. Only milling-attributable supply is included; adjacent droplet-only or dispersion activity is not automatically counted. ([suginocorp.com](https://www.suginocorp.com/star-burst/))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The wet-jet offering supports wet-state classification within the joint value model, not the total Wet Grinding share. ([suginocorp.com](https://www.suginocorp.com/star-burst/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The wet-jet offering supports wet-state classification within the joint value model, not the total Wet Grinding share. ([suginocorp.com](https://www.suginocorp.com/star-burst/))
35. IBU-tec | Mills - Milling Technology for Dry and Wet Grinding
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operator table separately lists two dry opposed-jet units. This is an installed-inventory observation, not a shipment or revenue ratio. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operator table separately lists two dry opposed-jet units. This is an installed-inventory observation, not a shipment or revenue ratio. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Three wet agitator-bead units are separately inventoried, supporting state-specific commercial classification without using their count as a market weight. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Three wet agitator-bead units are separately inventoried, supporting state-specific commercial classification without using their count as a market weight. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
36. Comminution - NTNU
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: NTNU separately records wet/dry capability for stirred and planetary equipment; the inventory is not a representative value-share dataset. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: NTNU separately records wet/dry capability for stirred and planetary equipment; the inventory is not a representative value-share dataset. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The planetary equipment is recorded as batch, supporting a laboratory batch context without assuming all laboratories are batch-only. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The planetary equipment is recorded as batch, supporting a laboratory batch context without assuming all laboratories are batch-only. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The laboratory jet rig is recorded as continuous, independently challenging equivalence between continuous mode and industrial scale. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The laboratory jet rig is recorded as continuous, independently challenging equivalence between continuous mode and industrial scale. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))

37. Dry Batch Or Continuous Laboratory Mills - Union Process

- Evidence informing base-year allocation inputs; displayed values and growth are calculated: Union Process identifies SD-xx.xx as one laboratory offering for both batch and continuous service. Configuration-specific purchase inclusion and revenue are undisclosed. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))
- Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Union Process identifies SD-xx.xx as one laboratory offering for both batch and continuous service. Configuration-specific purchase inclusion and revenue are undisclosed. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))
- Evidence informing base-year allocation inputs; displayed values and growth are calculated: The same named offering advertises wet/dry capability, supporting a dual-state category premise rather than an observed adoption percentage. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))
- Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The same named offering advertises wet/dry capability, supporting a dual-state category premise rather than an observed adoption percentage. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))

38. Retsch Contact & Services - Contact Partners Worldwide

- Evidence informing base-year allocation inputs; displayed values and growth are calculated: RETSCH describes a network including daughter companies. Manufacturer affiliation, rather than contact location, informs direct-route attribution. ([retsch.com](https://www.retsch.com/contact-services/))
- Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: RETSCH describes a network including daughter companies. Manufacturer affiliation, rather than contact location, informs direct-route attribution. ([retsch.com](https://www.retsch.com/contact-services/))
- Evidence informing base-year allocation inputs; displayed values and growth are calculated: The network also includes trained distributors, establishing a resale-access premise but not distributor ownership roles or annual sales weights. ([retsch.com](https://www.retsch.com/contact-services/))
- Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The network also includes trained distributors, establishing a resale-access premise but not distributor ownership roles or annual sales weights. ([retsch.com](https://www.retsch.com/contact-services/))

39. HOSOKAWA ALPINE Aktiengesellschaft - Conditions of Sale 371_00 EN

- Evidence informing base-year allocation inputs; displayed values and growth are calculated: Hosokawa requires company confirmation of representatives' transactions and makes contractual scope authoritative. The terms support agency-role attribution, not the assumed agent percentage. ([hosokawa-alpine.com](https://www.hosokawa-alpine.com/fileadmin/allgemein/Legal/AGB/AGB_Verkaufsbedingungen_en_371_00.pdf))
- Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Hosokawa requires company confirmation of representatives' transactions and makes contractual scope authoritative. The terms support agency-role attribution, not the assumed agent percentage. ([hosokawa-alpine.com](https://www.hosokawa-alpine.com/fileadmin/allgemein/Legal/AGB/AGB_Verkaufsbedingungen_en_371_00.pdf))

40. UNSD - ISIC Rev.5, Class 4610: Wholesale on a Fee or Contract Basis
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: ISIC Rev.xx.xx class xx.xx defines fee/commission intermediation without ownership, supporting a non-title-taking agency numerator distinct from goods supplied on own account. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: ISIC Rev.xx.xx class xx.xx defines fee/commission intermediation without ownership, supporting a non-title-taking agency numerator distinct from goods supplied on own account. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Own-account wholesale is excluded from the agency class, supporting the reseller/agent partition without supplying ultrafine-mill channel shares. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own-account wholesale is excluded from the agency class, supporting the reseller/agent partition without supplying ultrafine-mill channel shares. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))
41. ITDI-PB-2024-057 - Supply, Delivery, Installation and Commissioning of Ultra-fine Friction Grinder
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The 2024 friction-grinder procurement had a PHP xx.xx budget and failed with no bidder. It establishes a configured-package spending ceiling and commercial category, not a sale or a shipment count. ([notices.philgeps.gov.ph](https://notices.philgeps.gov.ph/GEPSNONPILOT/Tender/PrintableBidNoticeAbstractUI.aspx?refid=xx.xx))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The 2024 friction-grinder procurement had a PHP xx.xx budget and failed with no bidder. It establishes a configured-package spending ceiling and commercial category, not a sale or a shipment count. ([notices.philgeps.gov.ph](https://notices.philgeps.gov.ph/GEPSNONPILOT/Tender/PrintableBidNoticeAbstractUI.aspx?refid=xx.xx))
42. Bangko Sentral ng Pilipinas - Balance of Payments Report, Q4 2024
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The central bank reports a 2024 average of PHP xx.xx per USD. Dividing the failed PHP xx.xx procurement budget by this rate gives an approximately USD xx.xx comparison ceiling, not realized equipment revenue. ([bsp.gov.ph](https://www.bsp.gov.ph/Media_And_Research/Balance%20of%20Payments%20Report/2024/BOP_4qtr2024.pdf))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The central bank reports a 2024 average of PHP xx.xx per USD. Dividing the failed PHP xx.xx procurement budget by this rate gives an approximately USD xx.xx comparison ceiling, not realized equipment revenue. ([bsp.gov.ph](https://www.bsp.gov.ph/Media_And_Research/Balance%20of%20Payments%20Report/2024/BOP_4qtr2024.pdf))

4.3. Industry Ecosystem & Value Chain Analysis

Value is created through the mill, its contracted auxiliaries, package integration, and continuing support, but the supplied milling package remains the market boundary. Glencore Technology offers IsaMill delivery models ranging from modular supply with local installation to turnkey delivery. ■■■ ■■■■■■■■■■■ ■■■■■■■ ■■■■■ ■■■■■■■■■■■■ ■■■■ ■■■■■ ■■■ ■■■■■■■■■ ■■■ ■■■■■■ ■■■■■■■■■■ ■■■■ ■■■■ ■■■■■■■■■■■ ■■ ■■■■■ ■■■■ ■■■■■■■■■■■■■■ ■■■■■■■ ■■■ ■■■■■■■■■ ■■■■■■■■■ ■■■■■■■ ■■■■■ ■■■ ■■■■■■ ■■■■■■■■■■ ■■■■■■■■■■■■■■ ■■■■■■■ ■■■■■■■■■■■■ ■■■■ ■■ ■■ ■■■■■■■■■■ ■■■ ■■■■■ ■■■■■■

Written scope is a control point in value capture. ■■■■■■■■ ■■■■■■■■ ■■■■■■■■■■ ■■■■ ■■■ ■■■■■■■■ ■■■ ■■■■■■■ ■■■■■ ■■■■■■■■■■■ ■■■■■■■■■■■■■ ■■■■■■■■■■■ ■■■■■■■■ ■■■■

[redacted] Otherwise, apparently comparable proposals can leave different obligations with the customer.

[redacted] It establishes a coordinated commercial offering, not the allocation of liability in a particular project. Customers should identify the responsible counterparty, package inclusions, and remaining site obligations before treating coordinated marketing as single-party contractual accountability.

Sources & Evidence

1. IsaMill - About
   - Glencore Technology advertises modular IsaMill supply with local installation and turnkey delivery alternatives. ([glencoretechnology.com](https://www.glencoretechnology.com/en/technologies/isamill/about))
2. HOSOKAWA ALPINE Aktiengesellschaft - Conditions of Sale 370_01 EN
   - Hosokawa Alpine's conditions make written contractual scope authoritative, distinguish catalogs from offers, and require written agreement for assembly and commissioning services. ([hosokawa-alpine.com](https://www.hosokawa-alpine.com/fileadmin/user_upload/content/Rechtliches/AGB/AGB_Verkaufsbedingungen_en_370_01.pdf))
3. NETZSCH and MESNAC Partner to Deliver Turnkey Solutions for Battery Industry
   - NETZSCH announced a MESNAC INTELLIGENT battery-industry integration partnership on June xx.xx 2025. ([grinding.netzsch.com](https://grinding.netzsch.com/en/news/2025/netzsch-and-mesnac-partner-do-deliver-turnkey-solutions-for-battery-industry))

4.3.1. Supply-Side Analysis

[redacted] The transaction brought that supplier relationship inside Metso rather than establishing an additional independent equipment alternative. Buyers should examine the contracting entity and branded offering, not count historical company identities as independent bidders.

[redacted] These arrangements show that manufacturing, package responsibility, and the route to the customer need not sit with the same entity. A named partner or distributor does not itself establish territory rights, warranty authority, or the scope of a customer's contract.

[redacted] This is a counterexample to assuming that a branded mill requires sole-sourcing every adjacent input. Buyers should separate proprietary equipment and support obligations from independently purchasable

consumables, while preserving the offering-specific restrictions stated by the technology supplier.

Sources & Evidence

1. IsaMill - NETZSCH Grinding & Dispersing
   · NETZSCH identifies its IsaMill manufacturing and design role and Glencore Technology's integration, installation, and commissioning support role. ([grinding.netzsch.com](https://grinding.netzsch.com/en/products-and-solutions/wet-grinding/isamill/))
2. Metso Completes Acquisition of Swiss Tower Mills Minerals
   · Metso completed the Swiss Tower Mills Minerals acquisition on April xx.xx 2025; the announcement identifies an earlier exclusive HIGmill sales relationship. ([metso.com](https://www.metso.com/corporate/media/news/2025/xx.xx/metso-strengthens-its-position-as-a-leading-comminution-technology-and-services-supplier-for-mining-industry-completes-acquisition-of-swiss-tower-mills-minerals/))
3. Your Local Contact - RETSCH
   · RETSCH describes a global network of subsidiaries and trained distributors. ([retsch.com](https://www.retsch.com/contact-services/))
4. IsaMill Ceramic Media Supplier Options
   · Glencore Technology identifies multiple IsaMill media suppliers and directs customers to make their own commercial selection within stated offering restrictions. No technical sourcing specifications are used. ([glencoretechnology.com](https://www.glencoretechnology.com/.rest/api/v1/documents/f0307b9af4d3d12e4808ab61b7245614/IsaMill%2BMedia%2B2025_03.pdf))

4.3.2. Demand-Side Analysis

Buyer incentives differ between acquiring a mill and acquiring responsibility for an installed milling package. ■■■ ■■■■■■ ■■■ ■■■■■■■ ■■■■■■■■■■ ■■■■■■■■■■ ■■■■■■■■ ■■■■■■■■■■■■ ■■■■■■■■ ■■■ ■■■■■■■■ ■■■■■■■■ ■■■■■■■■ ■■■■■■■■■■■■ ■■■■■■■■■■ ■ ■■■■■■■ ■■■■■■■■ ■■■■■■■■■ ■■■■■■■■■■■■■■■■ ■■■■■■■■■■■■■■■■ ■■■ ■■■■■■■■■■ ■ ■■■■■■■■ ■■■■■■■■■ ■■■■■■■■■■■■ The commercial comparison concerns who must coordinate the remaining work and remedy a shortfall, not simply which mill appears in the proposal.

Pharmaceutical Manufacturing and Food, Beverage, and Feed Manufacturing introduce application-specific purchasing gates. ■■■■ ■■■■■■■■■■■■ ■■■■■ ■■■■■■■■ ■■■■■■■■■■ ■■■■■■■■■■■■ ■■■ ■■■ ■■■■■■■■■ ■■■■ ■■■■■ ■■■■ ■■■■■ ■■■■■■■■ ■■■■■■■■■■■■■■ ■■■■■■■■■■■■ ■■■■■■■■■ ■■■■■■■■■■■■■■■ ■■■ ■■■■■■■■■■■■■■■ ■■■ ■■■■■■■■■ ■■■■■■■■■■ ■■ ■■■■ ■■■■■ ■■■ ■■■■■■■■ ■■■■■■■■■■■ ■■■ ■■■■■■■■■■ ■■■■■■■■■■■ ■■■■ ■■■■ ■■■■■■■■■■■■ ■■■ ■■■■■■■ ■■■■■■■■■■ ■■■■■■■■ These rules do not establish approval of a particular mill brand or equivalence between pharmaceutical and food requirements.

■■■■■■■■■■■■■■ ■■■■■■■ ■■■ ■■■■ ■■■■■■■■■■■■ ■■■■■■■■■■■■ ■■■■■■■■■■ ■■■ ■■■■■■■■ ■■■■ ■■■■■■■ ■■■■■■■■■ ■ ■■■■■■■■ ■■■■■■■■■■■ ■■■■■■■ ■■■■■■■■■ ■■■ ■■■■■■■■■■■■■ ■■ ■■■■■■■■■■■■■■■■■■ ■■■■■■■■■■ ■■■■■ ■■■■■■■■■■■■■■■■■■■■■■ ■■■■ ■■■■■■■■ ■■■■■■■■■ ■■■■■■■■■■■■■ ■■■ ■■■■■■■■■■■■■■■■ Purchasing authority is identifiable in these institutional records; industrial disclosures do not establish a universal internal budget owner. Suppliers should distinguish a funded, contractually defined requirement from an application inquiry before treating it as a deliverable order.

Sources & Evidence

1. IsaMill - About
   · The delivery alternatives support a buyer choice about retained site-contracting obligations. Their economic effect is a bounded inference. ([glencoretechnology.com](https://www.glencoretechnology.com/en/technologies/isamill/about))
2. IIT Patna - E-Tender for Supply of Planetary Ball Mill with Buyback, IITP/S&P/1/MM-356/2025-26
   · The 2025 tender requires a minimum three-year onsite warranty and manufacturer or authorized-dealer evidence. ([iitp.ac.in](https://www.iitp.ac.in/images/pdf/planetary%20ball%20mill%20Tender%20document.pdf))
3. Supply, Installation and Commissioning of Planetary Ball Mill - IISER Thiruvananthapuram
   · IISER Thiruvananthapuram's tender includes supply, installation, and commissioning. ([iisertvm.ac.in](https://www.iisertvm.ac.in/tenders/read/tenders-supply-installation-and-commissioning-of-planetary-ball-mill))
4. 21 CFR 211.63 - Equipment Design, Size, and Location
   · U.S. drug-product equipment must be appropriate for its intended use. ([ecfr.gov](https://www.ecfr.gov/current/title-xx.xx/chapter-I/subchapter-C/part-xx.xx/subpart-D/section-xx.xx))
5. 21 CFR 117.40 - Equipment and Utensils
   · U.S. food-equipment rules address cleanability, maintenance, allergen cross-contact, and contamination. ([ecfr.gov](https://www.ecfr.gov/current/title-xx.xx/chapter-I/subchapter-B/part-xx.xx/subpart-B/section-xx.xx))

4.3.3. Stakeholder Analysis

Equipment manufacturers, importers, distributors, and plant operators hold different obligations. EU product-compliance guidance assigns conformity responsibilities to manufacturers and verification duties to importers and distributors. ■■■■ ■■■■■■■■ ■■■■■■■■■■■■■ ■■■■■■■ ■■■■■■■■■■■ ■■■■ ■■■■■■■■ ■■■■■■■■■■■■■■■■■ ■■ ■■■■■■ ■■■■■■■■■■■ ■■ ■■■■■■■ ■■■■■■■■■■■ ■■■■■■■■■ ■■■■ ■■■■ ■■ ■■■■■■■■ ■■■■■■■■ ■■■ ■■■■■■■■■■ ■■■■■ ■■ ■■■■■■■■■ ■■■■■■■■■■■ ■■ ■■■■■■■■■ ■■■■ ■■■ ■■■■■■ ■■■ ■■■■■■■■■■ ■■■ ■■■■■■■■■■■■■■ ■■■■■■■■■■■■■■■■■■

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Continuing equipment obligations expose plant operators and service providers differently. U.S. drug-product rules require maintenance-related records, while RETSCH advertises qualification, installation, repair, and service-plan offerings. ■■ ■■■■■■■■ ■■■■■■■■ ■■■■■■■■■■■ ■■■ ■■■■■■■■ ■■■ ■■■■■■■■ ■■■■■■■■■■■ ■■■ ■■■■■■■■■■■ ■■■■■■■ ■■■ ■■ ■■■■ ■■■ ■■■■■■■■■■ ■■■■■■■■■ ■■ ■■■ ■■■■■■■■ ■■■■■■■■■■■ ■■■■■■■■■■■■■■■■ ■■■■■■■■ ■■■■■■■■■■■ ■■■■■■■ ■■■■■■■ ■■■■■■■■■■■■■ ■■■ ■■■■■■■■■■■ ■■■■■■■■■■■■■ ■■■■■■■ ■■■■ ■■■■ ■■ ■■■ ■■■■■■■■■■ ■■■■■■ ■■■■■■■

Sources & Evidence

1. HOSOKAWA ALPINE Aktiengesellschaft - Conditions of Sale 370_01 EN
   · Transactions entered into by representatives require Hosokawa Alpine confirmation. ([hosokawa-alpine.com](https://www.hosokawa-alpine.com/fileadmin/user_upload/content/Rechtliches/AGB/AGB_Verkaufsbedingungen_en_370_01.pdf))
2. Technical Service - RETSCH
   · RETSCH advertises repair, qualification, installation, and service-plan offerings. No service procedures are used. ([retsch.com](https://www.retsch.com/contact-services/technical-service/))
3. 21 CFR 211.67 - Equipment Cleaning and Maintenance
   · Drug-product rules require maintenance-related records. External service offerings do not establish transfer of the plant's responsibility. ([ecfr.gov](https://www.ecfr.gov/current/title-xx.xx/chapter-I/subchapter-C/part-xx.xx/subpart-D/section-xx.xx))
4. Equipment for Potentially Explosive Atmospheres (ATEX) - European Commission
   · EU ATEX guidance distinguishes equipment conformity obligations from employer workplace responsibilities. ([single-market-economy.ec.europa.eu](https://single-market-economy.ec.europa.eu/sectors/mechanical-engineering/equipment-potentially-explosive-atmospheres-atex_en))
5. General Product Compliance - Your Europe
   · EU guidance distinguishes manufacturer, importer, and distributor product-compliance responsibilities. ([europa.eu](https://europa.eu/youreurope/business/product-rules-compliance/general-product-compliance/index_en.htm))

4.4. Market Dynamics

[redacted] Conversely, Metso reported completed equipment-order activity despite trade-policy uncertainty. These observations support a conditional interpretation: a buyer can continue evaluating milling equipment while postponing commitment, and an announced offering need not become a customer order.

The interaction between installed-equipment support and new procurement also matters. [redacted] Participants should distinguish an inquiry, an accepted purchase order, an agreed package scope, and completed delivery when interpreting activity; combining these stages would overstate the evidence for adoption.

Sources & Evidence

1. Technical Service - RETSCH
   · Service offerings support the distinction between installed-asset continuity and new procurement. ([retsch.com](https://www.retsch.com/contact-services/technical-service/))
2. New BIG Machine Sizes: PMH 4000 and ZETA RS 600 for Battery Production
   · The battery-related portfolio event establishes supplier activity rather than a buyer commitment. ([grinding.netzsch.com](https://grinding.netzsch.com/en/news/2025/new-machine-size-pmh-xx.xx-and-zeta-rs-xx.xx))

3. Metso Financial Statements Review January-December 2025
   · Metso identifies tariff-related capital-decision risks in its broader operations; applicability to a particular mill purchase remains conditional.
   ([metso.com](https://www.metso.com/globalassets/investors/reports/2025/metso-financial-statements-review-2025.pdf))
4. Annual Report 2025 - Metso
   · Metso's annual-report presentation describes equipment orders and investment activity despite changing tariff conditions, countering a blanket investment-freeze inference.
   ([metso.com](https://www.metso.com/corporate/investors/annual-report/))
5. Mechanical Process Engineering: Your Partner - Hosokawa Alpine
   · Hosokawa Alpine lists upgrades and retrofitting within its powder-processing commercial support portfolio.
   ([hosokawa-alpine.com](https://www.hosokawa-alpine.com/powder-particle-processing/))

4.4.1. Key Drivers

4.4.1.1. Operating-economics requirements in mining procurement

Operating-economics requirements can support investment in Industrial Production milling packages. ■■■■■■■ ■■■■■■ ■■■ ■■■■■ ■■■■■■■ ■■■■■■■■■■■■■■ ■■■■■ ■■■■■■■■ ■■■■■■■■ ■■■■■■■■■■ ■■■■■■■■■■■■ ■■■ ■■■■■■■■■ ■■■■■■■■■■■■ ■ ■■■■■■■■ ■■■■■■■■■■ ■■■ ■ ■■■■■■■■ ■■■■■■■■ ■■■■■■■■ ■■■■■■■ ■■■■■■■ ■■■■■■■■■■■■ ■■■■ ■■■■■■■■ ■■■■■■■■■■ ■■■ ■■■■■■■■ ■■■■■■■■■ ■■■■■■■■■■ ■■■■■■■ ■■■■ ■■■ ■■■■ ■■■■■■■ It does not establish that energy savings caused the award or that a comparable project will proceed; funding approval, contractual scope, and buyer-specific economics remain decisive.

Sources & Evidence

1. Metso Receives Order for Grinding Mills to a Copper Project in Africa
   · Metso announced an African copper-project award on August xx.xx 2024, covering HIGmill equipment, auxiliaries, and services. The record establishes an order, not completed delivery or the buyer's selection rationale.
   ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))

4.4.1.2. Application-specific battery milling and integration offerings

Battery-related applications create a documented commercial focus for milling suppliers. NETZSCH announced the ZETA RS xx.xx for battery-slurry grinding in May 2025 and a partnership with MESNAC INTELLIGENT for integrated battery-industry solutions in June 2025. ■■■ ■■■■■■■■■■■■ ■■■■■■■■■■ ■ ■■■■■■■■ ■■■■ ■■ ■■■■■■■■■■■ ■■■■■■■■ ■■■■ ■ ■■■■■■■■ ■■■■■■■ ■■■■■■■■■■ ■■■■■ ■■■■■■■■■■■■■ ■■■■■■■■■■ ■■ ■■■■■■■■ ■■■ ■■■■■■■■■■■ ■■■■■■■■■■■■■■ ■■■ ■■■■■■■■ ■■■■■■■■ ■■ ■■■■■■■■■■ ■■■■■■■■■■ ■■■■■■■■■■ ■■■■■■■ ■■■■■■■■ ■■ ■■■■■■■ ■■■■■■■■ ■■■■■■■■■■■■ ■■■ ■■ ■■■■■ ■■■■■■■■ ■■■■■■■■■■■■ ■■■■■■■ ■■■■■■■ ■■■ ■■■■■■■■■■ ■■■■■■■■■

Sources & Evidence

1. New BIG Machine Sizes: PMH 4000 and ZETA RS 600 for Battery Production
   · NETZSCH announced ZETA RS xx.xx for battery-slurry grinding on May xx.xx 2025. The announcement does not establish customer adoption.
   ([grinding.netzsch.com](https://grinding.netzsch.com/en/news/2025/new-machine-size-pmh-xx.xx-and-zeta-rs-xx.xx))

2. NETZSCH and MESNAC Partner to Deliver Turnkey Solutions for Battery Industry
   · The partnership combines milling and system-integration capabilities; it is not an adoption or delivery record. ([grinding.netzsch.com](https://grinding.netzsch.com/en/news/2025/netzsch-and-mesnac-partner-do-deliver-turnkey-solutions-for-battery-industry))

4.4.1.3. Institutional procurement and equipment replacement

Research, Education, and Testing demand includes identifiable institutional purchasing and replacement decisions, independent of industrial project activity. IIT Patna issued a 2025 planetary-ball-mill tender with buyback, and IISER Thiruvananthapuram published a September xx.xx 2026, tender covering supply, installation, and commissioning. ■■■■ ■■■■■■■■■■■■ ■■■ ■■■■■ ■■ ■■■■■■■■■■■■■■■■■■■■■■ ■■■■■ ■■■■ ■ ■■■■ ■■■■■■■■ ■■■■■■■■■■■■ ■ ■■■■■■ ■■■■■■■■■■■ ■ ■■■■■■■■ ■■■■■■■■ ■■■ ■■ ■■■■■ ■■ ■■■■■■■■■■ ■■■■■■■ ■■■■■■■■■ ■■■■ ■■■■■■■ ■■■ ■■■■■■■■■■ ■■■■■■■ ■■■■■■■■■■■■ ■■■ ■■■■■■■■ ■■■■■■■■■■■■

Sources & Evidence

1. IIT Patna - E-Tender for Supply of Planetary Ball Mill with Buyback, IITP/S&P/1/MM-356/2025-26
   · IIT Patna requests a planetary ball mill with buyback. ([iitp.ac.in](https://www.iitp.ac.in/images/pdf/planetary%20ball%20mill%20Tender%20document.pdf))
2. Supply, Installation and Commissioning of Planetary Ball Mill - IISER Thiruvananthapuram
   · The institute published the planetary-ball-mill purchasing request on September xx.xx 2026. It is not an award record. ([iisertvm.ac.in](https://www.iisertvm.ac.in/tenders/read/tenders-supply-installation-and-commissioning-of-planetary-ball-mill))

4.4.2. Key Restraints

4.4.2.1. Capital commitment and trade-related uncertainty

A technically relevant offering can remain commercially uncommitted when a buyer cannot resolve project funding or trade-related exposure. Metso's 2025 financial review identifies tariff uncertainty and customer capital-decision risk, as well as supplier funding pressures. ■■■ ■■■■■■■■■ ■■■■■■ ■■ ■■■■■■■ ■■■■■■■■■ ■■■■■■ ■■■■ ■■■■■■■■■■■■■ ■■ ■■■ ■■■■■■■■■■■ ■■■■■ ■■■■■■■ ■■■■■■■■ ■■■■■■■■■■■■■■■ ■■■■■■■■ ■■ ■ ■■■■■■■■■■■■ ■■ ■■■ ■■■■■■■■ ■■■■■■■■■■■■■■■■ ■■■■■■■■■■■■■■■ ■■■■■■■■■ ■■■■■■ ■■■■■■ ■■■■■■■■ ■■■■■■■■■ ■■■ ■■■■■■ ■■■■■■■■■■■ ■■■■■■ ■■■■■■■■■ ■■■■■■■■■■■■■■■■ ■■■■■■■■■■

Sources & Evidence

1. Metso Financial Statements Review January-December 2025
   · The review identifies customer capital-decision and supplier-funding risks, not a universal suspension of equipment purchasing. ([metso.com](https://www.metso.com/globalassets/investors/reports/2025/metso-financial-statements-review-2025.pdf))
2. Annual Report 2025 - Metso
   · Reported equipment-order activity limits the interpretation of risk disclosures as universal purchasing cessation. ([metso.com](https://www.metso.com/corporate/investors/annual-report/))

4.4.2.2. Application-specific compliance and purchasing eligibility

Application and jurisdiction requirements restrict the eligible offer set. ■■■■ ■■■■■■■■■■■■ ■■■■■■■■■ ■■■■■■ ■■■■■■■■■■■■■■ ■■■■■■■■■■■■ ■■■ ■■ ■■■■ ■■■■■■■■■■■■ ■■■■■■■

[illegible] Suppliers should avoid promising cross-industry or cross-jurisdiction equivalence without establishing the relevant obligations.

Sources & Evidence

1. 21 CFR 211.63 - Equipment Design, Size, and Location
   · The provision supports application-specific equipment obligations, not brand approval or cross-industry equivalence.
   ([ecfr.gov](https://www.ecfr.gov/current/title-xx.xx/chapter-I/subchapter-C/part-xx.xx/subpart-D/section-xx.xx))
2. 21 CFR 117.40 - Equipment and Utensils
   · Food-equipment obligations support a distinct application-specific eligibility gate.
   ([ecfr.gov](https://www.ecfr.gov/current/title-xx.xx/chapter-I/subchapter-B/part-xx.xx/subpart-B/section-xx.xx))
3. Equipment for Potentially Explosive Atmospheres (ATEX) - European Commission
   · ATEX covers applicable equipment and protective systems before placement on the EU market; it is not a universal milling-category approval.
   ([single-market-economy.ec.europa.eu](https://single-market-economy.ec.europa.eu/sectors/mechanical-engineering/equipment-potentially-explosive-atmospheres-atex_en))

4.4.2.3. Support and modernization of installed equipment

Maintenance and modernization provide a counterforce to new-equipment purchasing. [illegible] The retention case weakens when changed application needs, unsupported equipment, or unresolved compliance obligations make the existing asset unsuitable.

Sources & Evidence

1. Technical Service - RETSCH
   · Advertised repair and maintenance support establishes an installed-equipment spending alternative; postponed replacement is a conditional inference.
   ([retsch.com](https://www.retsch.com/contact-services/technical-service/))
2. Mechanical Process Engineering: Your Partner - Hosokawa Alpine
   · The advertised modernization offering supports a conditional installed-asset retention alternative, not a universal replacement-cycle claim.
   ([hosokawa-alpine.com](https://www.hosokawa-alpine.com/powder-particle-processing/))

4.4.3. Key Opportunities

4.4.3.1. Delegated delivery for buyers with coordination gaps

Mineral and mining purchasers can compare delegated delivery with customer-managed installation through the published HIGmill Plant and IsaMill alternatives. The opening is account-specific: a supplier must establish an in-scope equipment requirement and accept coordination, handover, and remedy obligations the customer cannot reasonably retain. [illegible]

[redacted]

Sources & Evidence

1. IsaMill - About
   - Customer-managed installation remains an advertised alternative to broader delivery.
2. HIGmill Plant - Metso
   - Installation alternatives support a conditional delegated-delivery proposition.

4.4.3.2. Qualified institutional equipment and fulfillment

[redacted] Indian purchasing records identify registration gates and installation obligations, while RETSCH's support options illustrate the need for territorial confirmation. Suppliers must establish the actual solicitation and local commitment; historical requests do not establish an award or continuing demand at another institution.

Sources & Evidence

1. Technical Service - RETSCH
   - RETSCH offers individual services and service plans but states that plans are unavailable in some countries. ([retsch.com](https://www.retsch.com/contact-services/technical-service/))
2. Supply, Installation and Commissioning of Planetary Ball Mill - IISER Thiruvananthapuram
   - IISER Thiruvananthapuram published a supply, installation, and commissioning request for a planetary ball mill on September xx.xx 2026. ([iisertvm.ac.in](https://www.iisertvm.ac.in/tenders/read/tenders-supply-installation-and-commissioning-of-planetary-ball-mill))
3. High Energy Planetary Ball Mill - IIT Bombay
   - IIT Bombay's 2024 planetary-ball-mill solicitation required vendor and e-tender registration before participation. ([iitb.ac.in](https://www.iitb.ac.in/tenders/high-energy-planetary-ball-mill))

4.4.3.3. Named laboratory milling and containment packages

[redacted] Capture requires a named package and accepted documentation, interface, and remedy responsibilities. Separately coordinated sourcing remains an alternative where the buyer can retain those obligations.

Sources & Evidence

1. 21 CFR 211.63 - Equipment Design, Size, and Location
   - For its covered drug-product activities, xx.xx CFR xx.xx requires equipment appropriate for intended use; it does not approve a mill brand. ([ecfr.gov](https://www.ecfr.gov/current/title-xx.xx/chapter-I/subchapter-C/part-xx.xx/subpart-D/section-xx.xx))
2. Products, Page 2 - FPS Pharma
   - FPS specifically describes LaboMill-xx.xx and Pm1 integration within FPS isolators; universal model compatibility is not established. ([fps-pharma.com](https://www.fps-pharma.com/product/page/xx.xx/))

4.4.3.4. Supported equipment access without an immediate new-asset commitment

Hosokawa Alpine's rental, refurbished-equipment, and buy-back offerings create acquisition alternatives for buyers unwilling to commit immediately to a new asset. ■■■ ■■■■■■■■■■ ■■■■■■■■ ■■■■■■■■ ■■ ■■ ■■■■■■■■ ■■■■■■■■ ■■■■■■■■■■■ ■■■■■■■■■■■ ■■■■■■■■ ■■■ ■■■■■■■■ ■■■■ ■■■■■■■■■■■■ Flexibility can be outweighed by restricted selection or retained integration work; these programs do not establish universal availability or an automatic advantage over ownership.

Sources & Evidence

1. Rental and Used Machines - Hosokawa Alpine
   · Hosokawa Alpine advertises rentals, overhauled Originals equipment, and buy-back. Asset-specific availability requires an offer. ([hosokawa-alpine.com](https://www.hosokawa-alpine.com/services/solutions/alpine-rentals-and-used-machines/))

4.4.4. Key Challenges

4.4.4.1. Reconciling package scope and contractual accountability

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Sources & Evidence

1. IsaMill - About
   · Published delivery models do not establish the liability allocation in a customer's contract. ([glencoretechnology.com](https://www.glencoretechnology.com/en/technologies/isamill/about))
2. NETZSCH and MESNAC Partner to Deliver Turnkey Solutions for Battery Industry
   · Coordinated commercial capabilities do not establish liability allocation for a customer's package contract. ([grinding.netzsch.com](https://grinding.netzsch.com/en/news/2025/netzsch-and-mesnac-partner-do-deliver-turnkey-solutions-for-battery-industry))

4.4.4.2. Converting channel presence into buyer eligibility

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Sources & Evidence

1. Your Local Contact - RETSCH
   · The network establishes a commercial route, not buyer-specific bidding authority or warranty terms. ([retsch.com](https://www.retsch.com/contact-services/))
2. IIT Patna - E-Tender for Supply of Planetary Ball Mill with Buyback, IITP/S&P/1/MM-356/2025-26
   · The tender requires OEM-authority evidence and continuing support commitments. ([iitp.ac.in](https://www.iitp.ac.in/images/pdf/planetary%20ball%20mill%20Tender%20document.pdf))

4.4.4.3. Coordinating cross-border delivery and compliance

Cross-border fulfillment requires alignment among delivery commitments, product compliance, and the responsible local economic operator. Metso identifies supply-chain and supplier-funding risks to timely delivery, while EU guidance requires importers to verify applicable product compliance. ■■■■■■■■■ ■■■■■■■■■ ■■■■■■■■ ■■■ ■■ ■■■■■■■■■■ ■■■■■■■■■■ ■■■■ ■■■■ ■ ■■■■■■■ ■■■■■■■■■■■■■■■ ■■■■■■ ■ ■■■■■■■■■■ ■■■■■■■■■■■■■ ■■■■■■■■ ■■■■ ■■■ ■■■■■■■ ■■■■■ ■■■■■■■■■■■ ■■■■■■■■■■■ ■■■■■■ ■■■ ■■■■■■■ ■■■■■■■■ ■■■■■■■ ■■■■■■■ ■■■ ■■■■■■■■■■■ ■■■■■■■■■■■■ ■■■ ■■■■■■■■■■ ■■■■■■■■■■■■■ ■■■■■■■ ■■■■■■■ ■■ ■ ■■■■■■■■ ■■■■■■■■■■■■

Sources & Evidence

1. General Product Compliance - Your Europe
   · Importers must verify applicable conformity, marking, and accompanying documentation obligations. ([europa.eu](https://europa.eu/youreurope/business/product-rules-compliance/general-product-compliance/index_en.htm))
2. Regulation (EU) 2023/1230 on Machinery - Consolidated Text
   · Contracts crossing the machinery transition need an applicable market-placement basis and identified responsible actor. This contracting implication is analytical. ([eur-lex.europa.eu](https://eur-lex.europa.eu/eli/reg/2023/xx.xx/2026-xx.xx-xx.xx/eng/pdf))
3. Metso Financial Statements Review January-December 2025
   · Supply-chain disruption and supplier funding can expose delivery commitments. ([metso.com](https://www.metso.com/globalassets/investors/reports/2025/metso-financial-statements-review-2025.pdf))

4.5. Porter’s Five Forces Analysis

Competitive rivalry is best assessed within a commercially qualified application shortlist. Metso's HIGmill, Glencore Technology's IsaMill package, Hosokawa Alpine's AFG, and RETSCH's PM xx.xx establish different equipment and responsibility profiles. ■■■■■ ■■■■■■■■■■■■■ ■■■■■ ■■■ ■■■■ ■■■■■■■■■■ ■■■■■■■■■■ ■■■■■■■■■■ ■■■■■■■■■■ ■■■■■■ ■■■ ■■■■■■■■■ ■■■ ■■■ ■■■■■■■■ ■■■■■■■■■■■ ■■■■■■■■■■■■■■■■ ■■■■■■ ■■■■ ■ ■■■■■■■■■■ ■■■■■■■■■■ ■■■■ ■■■■■ ■■■■■■■■ ■■■■■■■■■■■■ ■■■■■■■■■■ ■■■■■■ ■■■■■■■■ ■■■■■■ ■■■ ■■■■■■■ ■■■■■■■■■■■■■

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Supplier leverage depends on the controlled relationship. ■■■■■■■ ■■■■■■■■■■■ ■■ ■■■■■■ ■■■■■ ■■■■■ ■■■■■■■■ ■■■■■■■ ■■■ ■■■■■■■ ■■■■■■■■■■■■ ■■■■■■ ■■■ ■■■■■■■■■■■■ ■■■ ■■■■ ■■■■ ■■■ ■■■■■■■■■ ■■■■■■■ ■■■■ ■■■ ■■■■■■■ ■■■■■ ■■■■■■ ■■■■■■■■■■■ ■■■■■■■■ ■■■■■■■■■■■ ■■■■■■■■■ ■■■■■■■ ■■■■■ ■■■■■■■ ■■■■■■■■ ■■■■■■■■ ■■■■■■■■■ ■■■■ ■■■■■■ ■■■■■■■■■ ■■■■ ■■■■■ ■■■ ■■■■■■■■■■ ■■■■■■■■■■ Buyers should distinguish control of a branded mill and its proprietary support from the purchasing alternatives available for adjacent consumables.

■■■■■ ■■■■■ ■■ ■■■■■■■ ■■ ■■■■■■■■ ■■■■■■■■■■ ■■■■■■ ■■■■ ■ ■■■■■■■■■ ■■■■■■■■■■ ■■■■■■ ■■■ ■■■■■ ■■■■■■■■ ■■■■■■■■■■■■■■■■ ■■■■■■■ ■■■ ■■■■■■■ ■■■ ■■■■■■■■■■ ■■■■■■■■■■■ ■■ ■ ■■■■■■■■■■ ■■■■■■■■ ■■■■■■■■■■■ Hosokawa Alpine's own conditions make the written contract authoritative. The competing positions indicate that delivery, acceptance, warranty, and scope exclusions are negotiable commercial issues; neither party's published terms prove the outcome of a particular negotiation.

■■■■■■■■■■■■ ■■■■■■■■ ■■■■■■■■■■■■ ■■ ■ ■■■■■■■■■■■■■ ■■■■■■■■■■■ ■■■■■■■■ ■■■■■■■ ■■■■■■■■■■ ■■■■■■■ ■■■ ■■■■■■■■■■■ ■■■■■■■■■■ ■■■■■ ■■■■■■■■ ■■■■■■■ ■■■■ ■■■■■■■ ■■■■■■■■ ■■■■■■■■ ■■■ ■■■■■■■■■■■■ ■■■■■■■■■■ ■■■■■■■ ■■■ ■■■■■■■■■■■■ ■■■■■■■■■■ ■■■■■■■ ■■■■■■■■■ ■■■■■■■■■■■■■ ■■■■■■■■■■ ■■■■■■■■ ■■■■ ■■■■■■■■■■ ■■■■■■■■ ■■■■■■■■ ■■■ ■■■■■■■■■■■■■■■■■ ■■■■■■■■■ Outsourcing is not universally available: the Dutch toll-processing business expressly states that it is not accredited for food-product processing. Buyers must compare control and commitment flexibility against application eligibility and the provider's actual commercial scope.

Sources & Evidence

1. Planetary Ball Mill PM 100
   · The PM xx.xx portfolio establishes a laboratory-scale offering, not equivalence with industrial milling packages. The comparison boundary is an analytical inference. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx))
2. AFG Fluidised Bed Jet Mill
   · The AFG portfolio supports the existence of a distinct jet-mill offering; universal application interchangeability is not established. ([hosokawa-alpine.com](https://www.hosokawa-alpine.com/powder-particle-processing/technologies/grinding-and-classifying/jet-mills/afg/))
3. HIGmill High Intensity Grinding Mill
   · HIGmill establishes a distinct industrial offering; advertised performance is not treated as proof of superiority over every included technology. ([metso.com](https://www.metso.com/portfolio/higmill-high-intensity-grinding-mill/?utm_source=openai))
4. IsaMill - About
   · IsaMill is offered as a grinding-system package with different delivery scopes, supporting scope-qualified competition. ([glencoretechnology.com](https://www.glencoretechnology.com/en/technologies/isamill/about))
5. HOSOKAWA ALPINE Aktiengesellschaft - Conditions of Sale 370_01 EN
   · The published terms establish the supplier's contractual position, not the result of a buyer-specific negotiation. ([hosokawa-alpine.com](https://www.hosokawa-alpine.com/fileadmin/user_upload/content/Rechtliches/AGB/AGB_Verkaufsbedingungen_en_370_01.pdf))

6. Metso Completes Acquisition of Swiss Tower Mills Minerals
   · The transaction changes control of the named supplier relationship, not control of every Stirred Media Mill. ([metso.com](https://www.metso.com/corporate/media/news/2025/xx.xx/metso-strengthens-its-position-as-a-leading-comminution-technology-and-services-supplier-for-mining-industry-completes-acquisition-of-swiss-tower-mills-minerals/))
7. IIT Patna - E-Tender for Supply of Planetary Ball Mill with Buyback, IITP/S&P/1/MM-356/2025-26
   · Payment is linked to delivery and acceptance; supplier standard conditions are not automatically binding on the institute.
   ([iitp.ac.in](https://www.iitp.ac.in/images/pdf/planetary%20ball%20mill%20Tender%20document.pdf))
8. General Product Compliance - Your Europe
   · Importer verification is a commercial access condition independent of catalog participation.
   ([europa.eu](https://europa.eu/youreurope/business/product-rules-compliance/general-product-compliance/index_en.htm))
9. Rental and Used Machines - Hosokawa Alpine
   · Hosokawa Alpine advertises manufacturer-direct rental and refurbished machinery alternatives. Availability for a particular application is not established.
   ([hosokawa-alpine.com](https://www.hosokawa-alpine.com/services/solutions/alpine-rentals-and-used-machines/))
10. Toll Processing of Powders & Bulk Solids - Hosokawa Micron B.V.
    · Hosokawa Micron B.V. offers external milling and classifying and expressly states that it is not accredited for food-product toll processing.
    ([hosokawa-micron-bv.com](https://hosokawa-micron-bv.com/services/toll-processing))
11. IsaMill Ceramic Media Supplier Options
    · The published alternatives counter the inference that a branded mill makes all adjacent input purchasing exclusive.
    ([glencoretechnology.com](https://www.glencoretechnology.com/.rest/api/v1/documents/f0307b9af4d3d12e4808ab61b7245614/IsaMill%2BMedia%2B2025_03.pdf))

4.6. PESTLE Analysis

[redacted] These disclosures concern Metso's broader operations, not every Ultra Fine Grinding Mill transaction. Buyers and importers should establish transaction-specific duty treatment, delivery obligations, and responsibility for cost changes before committing; a geographically diversified supplier can mitigate exposure without eliminating it.

EU machinery legislation creates a dated contracting consideration. [redacted] Milling-package contracts spanning the transition should identify the responsible economic operator and applicable market-placement requirements rather than assume that every existing machine requires replacement.

Worker protection and product integrity influence purchasing accountability. OSHA identifies mandatory standards addressing combustible-dust hazards, with requirements varying by

industry and potentially by state plan. ■■ ■■■■ ■■■■■■■■■■ ■■■■■■■■■■ ■■■■■■■■■ ■■■■■■■■■ ■■■■■■■■■■ ■■■ ■■■■■■■■ ■■■■■■■■■■■■■■■■■ ■■■■■ ■■■■■■■■■■■ ■■■■ ■■■ ■■■■■■■■ ■■■■■■■■■■ ■■■■■■■■■■ ■■■■■■■■■■■ ■■■■■■■■■■ ■ ■■■■■■■■■■ ■■■■■■■ ■■■■■■■■■■ ■■■■■■■■■ ■■■■ ■■■ ■■■■■■■■■ ■■■■■■■■■■■ ■■■ ■■■■■ ■■■■■■■■■■■■■■■ ■■■■■ ■■■■■■■■■■■ ■■ ■■■■■■■■■■■■■ ■■■■■■■■■■■■■

Proprietary features can differentiate an offering without establishing a market-wide patent barrier. Hosokawa Alpine describes Megajet as patented, while its sales conditions restrict third-party access to supplied software and documents. ■■■ ■■■■■■■■■■ ■■■■■■■■■■■ ■■ ■■■■■ ■■■■■■■■■ ■■■■■■■■■ ■■■■ ■■■ ■■■■■■■■■■■■ ■■■■■■■ ■■■■■■■■■■■■ ■■■■■■■■■■■■ ■■ ■■■■■■■■■■■■■ ■■■■■■■■ ■■■■■■■■■■■■ ■■■■■■■ ■■■■■■■■ ■■■■■■■■ ■■■■■■■■■■■■■ ■■■ ■■■■■■■■■■■■■■■ ■■■■■■■■ ■■■■■■■ ■■■■■■■■ ■■■ ■■■■■■■■■ ■■■■■■■ ■■■■■■■ ■■■■■■■■■■ ■■ ■ ■■■■■■■■■■ ■■■■■■■■■■■ ■■■■■■■■ ■■■■■■■ ■■■■ ■■■■■ ■■■■■■■■■■■ ■■■■ ■ ■■■■■■■■■■■■■■■■■■■■ ■■■■■■

Sources & Evidence

1. AFG Fluidised Bed Jet Mill
   · Hosokawa Alpine describes Megajet as patented. This company statement does not establish live territorial patent coverage or enforceability. ([hosokawa-alpine.com](https://www.hosokawa-alpine.com/powder-particle-processing/technologies/grinding-and-classifying/jet-mills/afg/))
2. HOSOKAWA ALPINE Aktiengesellschaft - Conditions of Sale 370_01 EN
   · Supplied software and documents are restricted from third-party availability under these conditions. ([hosokawa-alpine.com](https://www.hosokawa-alpine.com/fileadmin/user_upload/content/Rechtliches/AGB/AGB_Verkaufsbedingungen_en_370_01.pdf))
3. Equipment for Potentially Explosive Atmospheres (ATEX) - European Commission
   · Equipment and employer duties are separate commercial accountability considerations for the intended purchasing environment. ([single-market-economy.ec.europa.eu](https://single-market-economy.ec.europa.eu/sectors/mechanical-engineering/equipment-potentially-explosive-atmospheres-atex_en))
4. Combustible Dust: An Explosion Hazard - OSHA Standards
   · OSHA identifies mandatory combustible-dust-related standards with industry-specific provisions and potentially different state-plan requirements. ([osha.gov](https://www.osha.gov/combustible-dust/standards))
5. Regulation (EU) 2023/1230 on Machinery - Consolidated Text
   · The general application date is January xx.xx 2027; transitional provisions preserve availability of qualifying previously placed products. Articles xx.xx and xx.xx address specified manufacturer-obligation cases. ([eur-lex.europa.eu](https://eur-lex.europa.eu/eli/reg/2023/xx.xx/2026-xx.xx-xx.xx/eng/pdf))
6. Metso Financial Statements Review January-December 2025
   · Disclosed risks include tariffs, supplier funding, currency exposure, and delivery disputes. No market-wide effect or transaction-specific tariff is inferred. ([metso.com](https://www.metso.com/globalassets/investors/reports/2025/metso-financial-statements-review-2025.pdf))

4.7. Market Outlook

The Global Ultra Fine Grinding Mill outlook depends on conversion of application needs into accepted equipment obligations. ■ ■■■■■■■ ■■■■■■ ■■■■■■ ■ ■■■■■■■■■■■■■■■■■■■■ ■■■■■■■■■■■■ ■■■ ■■■■■■■■ ■■■■■■■■■■ ■■■■■■ ■■■■■■■■■■ ■■■■■■■■■■ ■■■■■■ ■■ ■■■■■■■■■■■ ■■■■■■■■■■■ ■■■■■■■ ■■■■■■■ ■■■■■■ ■■■■■■■ ■■■■ ■■■ ■■■■■■ ■■■ ■■■■■ ■■■■■■■■■■ ■■■

[redacted] The consequential turning points are purchaser authorization, accepted supplied scope, and delivery accountability-not another application announcement.

[redacted] Suppliers should therefore distinguish customer decisions about acquisition and responsibility from general application interest. The detailed opportunity assessment prioritizes accessible purchasing conditions rather than assuming uniform expansion across technologies, industries, or destinations.

Sources & Evidence

1. Metso Receives Order for Grinding Mills to a Copper Project in Africa
   · Metso's August xx.xx 2024 African copper-project award covered HIGmill equipment, auxiliaries, and services; it does not establish completed delivery. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
2. NETZSCH and MESNAC Partner to Deliver Turnkey Solutions for Battery Industry
   · NETZSCH announced its MESNAC INTELLIGENT battery-industry partnership on June xx.xx 2025; the announcement is not a customer-order record. ([grinding.netzsch.com](https://grinding.netzsch.com/en/news/2025/netzsch-and-mesnac-partner-do-deliver-turnkey-solutions-for-battery-industry))
3. Rental and Used Machines - Hosokawa Alpine
   · These acquisition alternatives counter the assumption that an equipment need necessarily produces a new-equipment purchase. ([hosokawa-alpine.com](https://www.hosokawa-alpine.com/services/solutions/alpine-rentals-and-used-machines/))
4. Metso's Financial Statements Review January 1-December 31, 2025
   · Metso's February xx.xx 2026 financial release reported equipment-order activity while identifying tariff-related uncertainty across its broader business. ([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/metsos-financial-statements-review-january-xx.xx--december-xx.xx-2025/))

4.7.1. Near-Term Market Outlook (0-2 Years)

For 2026-2027, purchasing qualification and regulatory timing are immediate decision gates. [redacted] The transition is not, by itself, a reason to accelerate replacement of otherwise acceptable equipment.

[redacted] Suppliers should monitor those purchasing stages and confirm eligibility for each solicitation rather than treat the notice as adoption. In industrial accounts, tariff uncertainty alongside continuing equipment-order activity favors project-specific

authorization checks and staged commercial resource commitments rather than either indiscriminate pursuit or blanket withdrawal.

Sources & Evidence

1. Supply, Installation and Commissioning of Planetary Ball Mill - IISER Thiruvananthapuram
   · The dated notice establishes requested fulfillment scope, not an award or completed installation. ([iisertvm.ac.in](https://www.iisertvm.ac.in/tenders/read/tenders-supply-installation-and-commissioning-of-planetary-ball-mill))
2. Metso's Financial Statements Review January 1-December 31, 2025
   · The coexistence of reported equipment orders and tariff caution supports project-specific commitment checks rather than a universal investment-freeze assumption. ([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/metsos-financial-statements-review-january-xx.xx--december-xx.xx-2025/))
3. Machinery - European Commission
   · The European Commission identifies January xx.xx 2027 as the Machinery Regulation's mandatory application date and distinguishes earlier machinery placement under the preceding directive. ([single-market-economy.ec.europa.eu](https://single-market-economy.ec.europa.eu/sectors/mechanical-engineering/machinery_en))

4.7.2. Medium-Term Market Outlook (3-5 Years)

For 2028-2029, evidence of fulfilled responsibility should determine whether announced integration propositions merit deeper commercial commitment. The NETZSCH-MESNAC partnership supplies a credible combination of milling and integration roles, but not a customer-deployment timetable. ■■ ■■■■■■■■■■ ■■■■■■■■■■ ■■■■■■■■ ■■■■■■■■■■■■■ ■■■■■■■■■■■■ ■■■ ■■■■■■■■■■ ■■■■■■■■ ■■■■■■ ■■■■■ ■■■■■ ■■■■■■■ ■■■■■■■■ ■■■■■■■ ■■■■■ ■■■■■■■■■■■ ■■■■■■ ■ ■■■■■■■ ■■■■■■■■■■■■■■■■■■■ ■■■■■■■■■■ ■■■■■■ ■■■■ ■■■■■■■ ■■■■■■■■■■■■ ■■■■■■ ■■■■■■■ ■■■■■■■■■

Installed-asset support can also contest replacement decisions during this horizon. Metso's completed Antofagasta expansion establishes a named HIG mill repair capability, making a scoped retention proposal a credible comparison for eligible Chilean owners. ■■■■■■■■■■■■ ■■■■■ ■■■■■■■■■ ■■■ ■■■■■■■■■■■■ ■■■ ■■■■■■■■■ ■■ ■■■ ■■■■■■■■ ■■■■■■■■■■■■ ■■■■■■■■■ ■■■■■■■■■■■■ ■■■■■■■■■ ■■■■■■■■■■■ ■■■■■■■■■■ ■■■■■■■■■■ ■■■■■■■■■■■■ ■■■■■■■■ ■■■■■■■■■■ ■■■■■■ ■■■■ ■■■■■■■■■■■■■ ■■■■■■■■ ■■■■■■■■■■■ ■■■■■■ ■■■■■■■■■ ■■■■ ■■■■■■■■■■■■■■■■■ ■■■■■■■■ ■■■■ ■ ■■■■■■■■ ■■■■■■■■

Sources & Evidence

1. NETZSCH and MESNAC Partner to Deliver Turnkey Solutions for Battery Industry
   · The announced combination of milling and integration capabilities supplies a conditional commercialization premise, not a deployment timetable. ([grinding.netzsch.com](https://grinding.netzsch.com/en/news/2025/netzsch-and-mesnac-partner-do-deliver-turnkey-solutions-for-battery-industry))
2. Metso’s service center expansion in Antofagasta elevates support for Chile’s mining industry
   · Metso's completed Antofagasta expansion, announced August xx.xx 2025, includes HIG mill repair and refurbishment capability. ([metso.com](https://www.metso.com/corporate/media/news/2025/xx.xx/metsos-service-center-expansion-in-antofagasta-elevates-support-for-chiles-mining-industry/))

4.7.3. Long-Term Market Outlook (5-10 Years)

[illegible] Renewal terms, documented support continuity, and usable exit rights are relevant indicators. Conventional expert support remains an alternative where the connected arrangement is unsuitable.

Acquisition flexibility can remain valuable rather than merely bridge an inevitable new-equipment purchase. Hosokawa Alpine's rental and supported-reuse routes supply a commercial precedent, subject to an actual eligible offer. [illegible]

Sources & Evidence

1. Rental and Used Machines - Hosokawa Alpine
   · Manufacturer-backed rental and reuse routes support preserving acquisition flexibility, conditional on an eligible asset and contract. ([hosokawa-alpine.com](https://www.hosokawa-alpine.com/services/solutions/alpine-rentals-and-used-machines/))
2. Digital Performance Services - Metso
   · Metso's Digital Performance Services cover grinding and combine AI-powered analytics with expert diagnosis, with on-site action available through a separate lifecycle-service combination. ([metso.com](https://www.metso.com/portfolio/data-driven-performance-services/))

4.8. Go-to-Market Strategy

Industrial OEMs should target the purchasing establishment's retained coordination gap rather than lead with a generic ultrafine claim. Use an application-qualified equipment offer, then distinguish equipment-only supply from accepted integration and handover obligations. [illegible]

A technology owner seeking regional accounts should choose a partner route only for a documented contribution it cannot readily supply directly. Roytec's BGRIMM-MAT proposition demonstrates regional equipment access, service, and spares as separable contributions. [illegible]

[illegible] RETSCH's territorial service-plan limits also show why a local sales contact is insufficient. Use Manufacturer-Direct Sales, Agent-Mediated Sales, or Independent Reseller Sales according to documented authority and fulfillment responsibility, not a presumed channel hierarchy.

Commercial proposals should separate the equipment obligation, optional delivery services, continuing support, exclusions, and agreed treatment of changes. Hosokawa Alpine's default ex-works exclusions and protection of agreed fixed prices illustrate why an apparently fixed commitment may still leave delivery obligations outside scope. [illegible]

Sources & Evidence

1. IsaMill - About
   · Glencore Technology offers IsaMill delivery involving local-contractor installation or turnkey construction and commissioning. ([glencoretechnology.com](https://www.glencoretechnology.com/en/technologies/isamill/about))
2. Technical Service - RETSCH
   · Territorial plan eligibility must be established separately from equipment access. ([retsch.com](https://www.retsch.com/contact-services/technical-service/))
3. General Product Compliance - Your Europe
   · EU importers retain verification duties concerning manufacturer conformity, markings, and accompanying documentation despite intermediated selling arrangements. ([europa.eu](https://europa.eu/youreurope/business/product-rules-compliance/general-product-compliance/index_en.htm))
4. Customised system planning from Hosokawa Alpine
   · The customer case supports targeting an identified engineering-resource gap rather than assuming universal preference for integrated supply. ([hosokawa-alpine.com](https://www.hosokawa-alpine.com/powder-particle-processing/customer-stories/customised-system-planning-from-hosokawa-alpine/))
5. High Energy Planetary Ball Mill - IIT Bombay
   · The institutional example establishes purchaser-specific registration gates, not continuing eligibility for other solicitations. ([iitb.ac.in](https://www.iitb.ac.in/tenders/high-energy-planetary-ball-mill))
6. HIGmill Plant - Metso
   · Basic-to-EPC packages establish a scope-led selling option, not automatically accepted comprehensive liability. ([metso.com](https://www.metso.com/portfolio/higmill-plant/))

7. HOSOKAWA ALPINE Aktiengesellschaft - Conditions of Sale 371_00 EN

· Hosokawa Alpine's conditions require principal confirmation of representative transactions, exclude delivery-related items from default ex-works quotations, and protect agreed fixed prices from adjustment. ([hosokawa-alpine.com](https://www.hosokawa-alpine.com/fileadmin/allgemein/Legal/AGB/AGB_Verkaufsbedingungen_en_371_00.pdf))

8. Products - Attrition Mills - Roytec Global

· Roytec markets GJM ultrafine equipment using BGRIMM-MAT technology and offers regional equipment, service, and spares. ([roytecglobal.com](https://roytecglobal.com/products/products-attrition-mills/))

5. Market Insights

5.1. Consumer Insights & End-User Perspective

[redacted] Owners should distinguish the equipment acquired from the coordination services retained or delegated before treating a project reference as comparable. Customer-managed implementation remains an alternative where the owner can retain the interfaces.

Research, Education, and Testing procurement separates the application user from institutional purchasing access. [redacted] These purchasing requests establish requirements rather than completed adoption; spending authority, award, and fulfillment remain transaction-specific.

Sources & Evidence

1. Supply, Installation and Commissioning of Planetary Ball Mill - IISER Thiruvananthapuram
   - IISER Thiruvananthapuram published the purchasing request on September xx.xx 2026, including supply, installation, and commissioning.
2. Customised system planning from Hosokawa Alpine
   - The supplier-authored Nobelmin account describes expansion of an existing grinding system, missing customer engineering resources, delegated implementation, and separately assigned building work. It does not separately establish a new mill purchase. ([hosokawa-alpine.com](https://www.hosokawa-alpine.com/powder-particle-processing/customer-stories/customised-system-planning-from-hosokawa-alpine/))
3. High Energy Planetary Ball Mill - IIT Bombay
   - IIT Bombay's 2024 solicitation identifies its Department of Chemistry and requires vendor and e-tender registration.

5.2. Consumer Experience Benchmarking

[redacted] Compare retained site work, handover obligations, and support escalation on the same contractual basis. A broader package can reduce customer coordination, but only if the relevant interfaces are included.

Laboratory buyers need a separate support benchmark. ■■■■■■ ■■■■■■■■■■ ■■■■■■■■■■ ■■■■■■■■ ■■■ ■■■■■■■■■ ■■■■■ ■■■■ ■■■■■■■■■■■■■ ■■■■■■■■ ■■■ ■■■■■■■■ ■■■■■■■■■ ■■■■■ ■■■■■■■■■ ■■■■■■■■ ■■■■■■■■■ ■■■■■■■■■■■■ ■■■■■■■■■ ■■■■ ■■■■■■■■■■■■ ■ ■■■■■ ■■■■■■■■ ■■■■■■■ ■■ ■■■■■■■■■■■■ ■■■■■■■■ ■■■ ■■■■■■■■ ■■■■■ ■■■■■ ■■■■■■■■ ■■■■■■■■■ ■■■■■■■■ ■■■■■ ■■■ ■■■■■■■■■■ ■■■■■■■ ■■■■■■■ ■■■ ■■■■■■■■■■■■ ■■■■■■■■■■■ ■■ ■■■■■■■■ ■■■■■ ■■ ■■■■■■■■ ■■■■■■■■■■■■■■ Before switching equipment suppliers, buyers should obtain local service commitments and compare the recurring-plan option with support purchased as needed.

Sources & Evidence

1. IsaMill - About
   · Glencore Technology describes IsaMill delivery through modular supply installed by a local contractor or a turnkey grinding-system contract. These establish alternative responsibility scopes, not comparative service outcomes. ([glencoretechnology.com](https://www.glencoretechnology.com/en/technologies/isamill/about))
2. Technical Service - RETSCH
   · RETSCH advertises individual services and recurring service plans with differentiated warranty and priority benefits, while expressly limiting geographic availability. ([retsch.com](https://www.retsch.com/contact-services/technical-service/))
3. HIGmill Plant - Metso
   · Metso's HIGmill Plant combines the mill with pre-engineered auxiliary modules and advertises installation packages ranging from basic support to EPC, alongside continuing asset-support services. ([metso.com](https://www.metso.com/portfolio/higmill-plant/))
4. Pulverisette 7 Planetary Micro Mill Premium Line - FRITSCH Milling and Sizing
   · FRITSCH's U.S. PULVERISETTE xx.xx page provides technical-service access for maintenance, repairs, and original spare parts. This supports comparison of advertised support routes, not realized repair performance. ([fritsch-us.com](https://fritsch-us.com/instrument-specifications/pulverisette-xx.xx-premium-line/))

5.3. Opportunity Mapping

Mineral-production accounts warrant pursuit when an identifiable equipment requirement coincides with responsibilities the purchaser cannot readily retain. Metso's African copper-project award establishes a bundled mill purchase, but does not identify an accessible prospect or demonstrate why the buyer selected that scope. ■■■■■■ ■ ■■■■■■■■■ ■■■■■■■■ ■■■■■■■ ■■■■■■■■ ■■■■■■■ ■■■■■■■■■■■■■ ■■■■ ■■■■■■■■■■■■■■■ ■■■■■■■■ ■■■■■ ■■■ ■■■■■■■■■■ ■■■■■■■ ■■■■■ ■■■ ■■■■■■■ ■■■■■■■■■■■■■ ■■■■■■■■ ■■■■■■■■■■ ■■■■■■■■■■■■■■■■■■■■■■ ■■■■■■■■■■■ ■■■■■■■■ ■ ■■■■■■■■ ■■■■■ ■■■■ ■■■■■ ■■■ ■■■■■■■■ ■■■ ■■■■■■■■■■■ ■■■■■■■■■■■ ■■■■■ ■■■ ■■■■■■■■■■ ■■ ■■■■■■■ ■■■■■■■■■■ ■■■■■ ■ ■■■■■■■■■ ■■■■■■■■■■ ■■■■■■■■■■■■■ ■■■ ■■■■■■■■■■■■■■ ■■■■■■■■■■■■■ ■■■ ■■■■■■■ ■■■■ ■■■■■■■■ ■■ ■■ ■■■■■■■■ ■■■■■■■■■■■■■ ■■■■■■■■■■■

Institutional laboratory procurement offers clearer purchasing-access evidence than application promotion alone. ■■■ ■■■■■■■■ ■■■■■■■■■■ ■■■■■■■■■■■■ ■■■■■■■■■■ ■■■ ■■■■■■ ■■■■■■■■■■■■■■■■■■■ ■■■■■■■■■■■■■■■■■■■■■■■■■■■■ ■■■■■■■■ ■■■■■■■■ ■■■■■■■■■■ ■■■■■■■ ■■■■■■■■■ ■■■■■■ ■■■■■■ ■■■■■■ ■■ ■■■■■■■■■■■■ ■■■■■■■■■■■■ ■■■■ ■■■■■ ■■■■■■■■■■■ ■■■■■■■■■■■■ ■■■■■■■■■■■■ ■■■ ■■■■■■■■ ■■■■■■■■■■■■■■■■ ■■■■■ ■■■■■■■■■■■ ■■■■■■■■■■■ ■■■■■■■■ ■■■■■■■■■ ■■■■■■■■■ ■■■ ■■■■■■■■■■■■■■■■ ■■■■■ ■■■■■■■■■■■ ■■■■■■■■■■■ ■■■■■■■ ■■■■■■■■■■■■■ ■■■ ■■■■■■■■■■ ■■■■■■■■■■■ ■■ ■ ■■■■■■■■■■ ■■■■■■■■ Manufacturer-direct supply may suit buyers able to administer the purchase; an intermediary

adds value only when its documented authority and local commitments address an actual requirement.

Pharmaceutical laboratory package sourcing is a narrower opportunity. FPS specifically markets LaboMill-xx.xx and Pm1 integration within its isolators, supporting a combined inquiry where the purchaser needs both obligations. ■■■ ■■■■■ ■■■■■■ ■■■■■■■ ■■ ■■■■■■■■ ■■■■■■■■■ ■■■■■■■■■■■■■ ■■■■■■■■■■ ■■■ ■■■■■■ ■■■■■■■■ ■■■■■■ ■■■■■■■■■■ ■■■■■■■■ ■■■■■■■■ ■■■■ ■■■■■■■■■■ ■■■■■■■■■■ ■■■■■■■■■■ ■■■ ■■■■ ■■■■■■■■■■■■ ■■■■■■■■■ ■■■■ ■■■■■■■ ■■■■ ■■■■■ ■■■ ■■■■■■■■■■ ■■■■■■■■ ■■■■■■ ■■■■■■ ■■■ ■■■■■■■ ■■■■■■■■■■■■■ ■■■■■■■■■■ ■■■■■ ■■■■■■■■■■ ■■■■■■■ ■■■■■■■■■■ ■■■ ■ ■■■■■■ ■■■■■■■■■■■■■ ■ ■■■■■■■ ■■■■■■■■■■■■■■■■■■ ■■■■■■■■■■ ■■■■■■ ■■■ ■■ ■■■■■■■■ ■■■■■ ■■■ ■■■■■ ■■■■■■■■■■ ■■■■■■■■■■■■

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Battery-industry integration remains an opportunity requiring commercial verification before investment. The NETZSCH-MESNAC announcement establishes complementary capabilities, not a customer award or an available partnership for another entrant. ■■■■■■ ■■■■■■■■■ ■■■■■■■■■ ■■■■■■■■ ■■■ ■■■■■■■■ ■■■■■■■■■■ ■■■■■■■■■ ■■■ ■■■■■■■■■■ ■■■■■■■■■■■■■■■ ■■■■■■ ■■■■■■■■ ■■■■■■ ■■■■■■■■ ■■■■ ■■■■■■■■■■■■■ ■■■ ■■■■■■■■ ■■■■■■■■■■■■■■ ■■■ ■■■■■■■■ ■■■■■■■■■■■■ ■■ ■■■■■■■■■■■■■■■ ■■■■■ ■■■■■ ■■■■■■■■■■■■■■■■■ ■■■■■■■■■■■■ ■■■■■■■■ ■ ■■■■■■■■■■■■■■■ ■■■■■■■■■■■■ ■■■■■ ■■■ ■■■■■ ■■■ ■■■■■■■ ■■■ ■■ ■■■■■■■■■■■■■ ■■■■■ ■■■ ■■■■■■■■■■ ■■■■■■■■ ■■■■■■ ■■■■■ ■■■■■■■■■■ ■■■ ■■■■■ ■■■■■■■■■■ ■■■■■■■■■■ ■■■■■■■■ ■■■■■ ■■■■■■■■■■ ■■■■■ ■■■ ■■■■■■■■■■ ■■■■■■■■■

Sources & Evidence

1. IsaMill - About
   - Local-contractor delivery is a supported alternative when comparing retained interfaces.
2. Technical Service - RETSCH
   - Territorial plan eligibility requires confirmation independently of instrument access.
3. Supply, Installation and Commissioning of Planetary Ball Mill - IISER Thiruvananthapuram
   - The notice establishes requested fulfillment scope, not an award or completed installation.
4. 21 CFR 211.63 - Equipment Design, Size, and Location
   - For covered drug-product activities, equipment must be appropriate for intended use; the provision does not approve a mill brand.
5. Metso Receives Order for Grinding Mills to a Copper Project in Africa
   - Metso's August xx.xx 2024 African copper-project announcement records an order for HIGmill equipment, auxiliaries, and services without naming the purchaser or destination country.

6. NETZSCH and MESNAC Partner to Deliver Turnkey Solutions for Battery Industry
   - The June xx.xx 2025 NETZSCH-MESNAC announcement establishes a battery-industry integration partnership, not a customer award or negotiated allocation of remedies.
7. Rental and Used Machines - Hosokawa Alpine
   - Advertised programs do not establish asset-specific availability or territorial acceptance.
8. High Energy Planetary Ball Mill - IIT Bombay
   - The historical solicitation establishes purchaser-specific participation gates, not continuing demand or another institution's eligibility conditions.
9. HIGmill Plant - Metso
   - Advertised installation scopes permit comparison of retained responsibilities.
10. Metso's service center expansion in Antofagasta elevates support for Chile's mining industry
    - Metso's completed Antofagasta expansion includes HIG mill repair and refurbishment capability, not a reserved service commitment for an individual asset.
11. Products, Page 2 - FPS Pharma
    - FPS specifically describes LaboMill-xx.xx and Pm1 integration within FPS isolators; universal compatibility and accepted project liability are not established.
12. Products - Attrition Mills - Roytec Global
    - The advertised regional contribution supports a conditional equipment-and-support route, not an available mandate for another entrant.

5.4. Distribution Channel Analysis

Customer reach and authority to conclude a transaction are separate channel attributes. ■■■■■■ ■■■■■■■■■ ■■■■■■■■■■■■ ■■■ ■■■■■■■ ■■■■■■■■■■■■■ ■■■■■ ■■■■■■■■ ■■■■■■■ ■■■■■■■■ ■■■■■■■ ■■■■■■■■■■■■ ■■ ■■■■■■■■■■■■ ■■■■■■■ ■■■■ ■■ ■■■■■■■■■■■■■■■■ ■■■■■■■■■■■■■■■■■■■ ■■■■■■ ■■■■■■■■■■■■■■ ■■■■■■ ■■■ ■■■■■■■■■■■ ■■■■■■■■ ■■■■■ ■■■■■■■■■ ■■■■■■■ ■■■■■■■■■ ■■■■■■ ■■ ■■■ ■■■■■■■■■■■ ■■■■■■■ ■■■■■■■■■■ ■■■ ■■■■■■■■ ■■■■■■■■ An intermediary's customer relationship should not substitute for confirmation of the promised obligations.

■■■■■ ■■■■■■ ■■■ ■■■■■■ ■■ ■■■■■■■■■■ ■■■■■ ■■■ ■■■■■■■■ ■■■■■■■■■■■■■■■■■■■ ■■■■■■■■■■■■ ■■■■■■■■ ■■■■■■ ■■■ ■■■■■■■■ ■■■■■■■■■■■■■■ ■■ ■■■ ■■■ ■■ ■■■■■■■■■ ■■■■■■■■■■ ■■■■■■■ ■■■■■■■■■■■■■■■■■■ ■■■■■■■■■■■■ ■■■■■■■■ A local intermediary can help administer purchasing and delivery, but its contribution must be distinguished from manufacturer conformity and the importer's own obligations. Direct contracting is a viable alternative where the buyer can manage those interfaces; representation alone does not resolve them.

Digital channels extend the installed-equipment relationship rather than eliminate local service needs. ■■■■■■■■■■ ■■■■■■■■ ■■■■■■■ ■■■■■■■■ ■■■■■■■■■■ ■■■■■■■■ ■■■■■■■■ ■■■■ ■■■■■■■■ ■■■■■■■ ■■■■ ■■■ ■■■■■■■■■■■ ■■■■■■■■ ■■■■■■■■■■■■■■■■ ■■■ ■ ■■■■■■■■ ■■■■■■■■ ■■■■ ■■■ ■■ ■■■■■■■ ■■■■■■■ ■■■■■■■■■■■■ Buyers should identify who owns case resolution, field attendance, and warranty remedies before treating a portal-supported relationship as complete service coverage.

Sources & Evidence

1. Your Local Contact - RETSCH
   · RETSCH describes an international network of subsidiaries and trained distributors; this establishes a documented customer route rather than authority for every independent seller. ([retsch.com](https://www.retsch.com/contact-services/))
2. General Product Compliance - Your Europe
   · EU guidance assigns importers verification duties concerning manufacturer conformity, relevant markings, documentation, and accompanying information, while distinguishing distributors' responsibilities. ([europa.eu](https://europa.eu/youreurope/business/product-rules-compliance/general-product-compliance/index_en.htm))
3. High Energy Planetary Ball Mill - IIT Bombay
   · The institutional registration requirements establish a purchasing-access condition separate from product availability or supplier representation. ([iitb.ac.in](https://www.iitb.ac.in/tenders/high-energy-planetary-ball-mill))
4. HOSOKAWA ALPINE Aktiengesellschaft - Conditions of Sale 371_00 EN
   · Hosokawa Alpine requires company confirmation of transactions entered into by representatives. ([hosokawa-alpine.com](https://www.hosokawa-alpine.com/fileadmin/allgemein/Legal/AGB/AGB_Verkaufsbedingungen_en_371_00.pdf))
5. Customer Portal - NETZSCH Grinding & Dispersing
   · NETZSCH's customer portal provides equipment and order visibility, service-request initiation, and service-history tracking. ([grinding.netzsch.com](https://grinding.netzsch.com/en/aftersales-support/customer-portal))

5.5. Pricing Trend Analysis

Delivery basis and adjustment clauses shape the commercial comparison. Hosokawa Alpine's published terms exclude packaging and transport from default ex-works quotations and permit specified cost adjustments, but protect agreed fixed prices. ■■■■■■■■■■■■ ■■■■■■■ ■■■■■■■■■■ ■■■■■■ ■■■ ■■■■■■■■■■■ ■■■■■■■ ■■■■■■■■■■ ■■■■■■■■ ■■■■■■ ■■■■■■■■ ■■■■ ■■■ ■■■■■■■ ■■■■■■■■ ■■■■■■■■ ■■■■■■■■■■■■■

Aftermarket bundling creates a separate negotiation. RETSCH offers individual services or plans combining support benefits, warranty extensions, and discounts. ■ ■■■■ ■■■■■■■■■■ ■■■■■■■■■■■ ■■■■■■■■■■■ ■■■ ■■■■■■■■■■ ■■■■■■■■■■ ■■ ■■■■ ■■■ ■■■■■■■■■■ ■ ■■■■■■ ■■■■■■■■■■■ ■■■■■■ ■■■■■■■ ■■■■ ■■■■■■■■■■■ ■■■■■■■■■ ■■■■■■■■ ■■■ ■■■■■■■■■ ■■■■■■■■■ ■■■■■■■■■■■■■ ■■■■■■ ■■■■■ ■■■■■■■■■■ ■■ ■■■■■■■■■ ■■■■■■■■■ ■■■■■■■ ■■■■■■■ ■■■■■■■■■ ■■■■■■■■■■■ ■■■■■■■■■■■ ■■■■■■■■■■ ■■■■■■■ ■■■■■■■■■■■ ■ ■■■■■■■■■■ ■■■■■■■■■■■■

Tariff and macroeconomic exposure is transaction-specific. Metso's February 2026 financial release flagged tariff-related uncertainty and reported adverse exchange-rate effects across its broader business. ■■■■■■ ■■■■■■■■■■■■■ ■■ ■■■ ■■■■■■■■■■ ■ ■■■■■■■■ ■■■■■■■■■■ ■■■■■■■■■■■■■■■■■■ ■■■■■■■■■■■■ ■■■■■■■■■■ ■■■■■■■ ■■■■■■■■ ■■■■ ■■■■■■■■■■■■■■■■ ■■■■■■■■■■■■ ■■■■■■■■■■ ■■■■■■■■■■ ■■■■■■■■■■ ■■■■■■■■■■ ■■■ ■■■■■■■■■■ ■■ ■■■■ ■■■■■■■■■ ■■■■■■■■■■ ■■■■■■■■■■ ■■■■■■ ■■■■■■■■■■ ■■■■■■■ ■■■■■■■ ■■■■ ■■■■■ ■■■■■■■■■■ ■■■■■■■ ■■■■■■■■■■ ■■■■■■■■■■■■■■

Sources & Evidence

1. Technical Service - RETSCH
   · RETSCH's service plans bundle support benefits and discounts as an alternative to purchasing individual services; the offering alone does not establish a buyer's whole-life savings. ([retsch.com](https://www.retsch.com/contact-services/technical-service/))
2. HOSOKAWA ALPINE Aktiengesellschaft - Conditions of Sale 371_00 EN
   · Default ex-works quotations exclude packaging, transport, and incidental costs; specified cost changes permit adjustment, except for agreed fixed prices. ([hosokawa-alpine.com](https://www.hosokawa-alpine.com/fileadmin/allgemein/Legal/AGB/AGB_Verkaufsbedingungen_en_371_00.pdf))
3. Metso's Financial Statements Review January 1-December 31, 2025
   · Metso's February xx.xx 2026, financial release identified tariff-related macroeconomic uncertainty and adverse exchange-rate effects across its broader business, not a uniform milling-equipment pricing outcome. ([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/metsos-financial-statements-review-january-xx.xx--december-xx.xx-2025/))

5.6. Regulatory Compliance & Standards Framework

Equipment eligibility depends on application and jurisdiction, not the ultra fine grinding label. ■■■■ ■■■■■■■■■■■■ ■■■■■ ■■■■■■■ ■■■■■■■■■ ■■■■■■■■■■■■ ■■■ ■■■■■■■■ ■■■■ ■■■■■■■■■■■ ■■■■■ ■■■■■■■■■■■ ■■■■■■■ ■■■■■■■■■■■■■ ■■■■■■■■■■■■ ■■■■■■■■ ■■■■■■■■■■■■■■ ■■■ ■■■■■■■■■■■■■ ■■■■ ■■■■■■ ■■■ ■■ ■■■■■■■■■■■ ■■ ■■■■■ ■■■■■■■■ ■■■■■■■ ■■■■■■ ■■■■■■■■■ ■■■ ■■■■ ■■■■■■■■■■■■■■ ■■■■■■■ ■■■■■■■ ■■■■■■■■■ ■■■■■■■■■■ ■■■■■■■■■■■■■■■ ■■■ ■■■■■■■■ ■■■■■■■■■■ ■■■■■■ ■■■■■■■■■■■■ These provisions do not approve a particular mill brand.

EU machinery contracts face a dated transition. ■■■■■■■■■■ ■■■■ ■■■■■■■■■ ■■■■■■■■■ ■■■■■■■ ■■■■■■■■■ ■■ ■■■■■■■ ■■■ ■■■■■ ■■■■■■■■■ ■■■■■■■ ■■ ■■■ ■■■■■■■ ■■■■■■■ ■■■■■ ■■■■■■■ ■■■■■■■ ■■ ■■■ ■■■■■■■■■ ■■■■■■■■■■ ■■■■■■■■■ ■■■■■■■■■■■■ ■■■ ■■■■■■■■■■ ■■■■■ ■■■■■■■■■■ ■■■■■■■■■ ■■■ ■■■■■■■■■ ■■■■■■■■■■ ■■■■■■■ Contracts should identify the applicable market-placement basis and responsible party rather than use the purchase-order date or an additional voluntary certificate as a substitute.

ATEX adds a separate access question for equipment intended for potentially explosive atmospheres. Product conformity obligations and employer workplace duties are distinct. ■ ■■■■ ■■■■■■■■■■ ■■■■■■■ ■■■■■■■■■■■■■ ■■■■■■■ ■■ ■■■■■■■ ■■■■■■■■■ ■■■ ■■■■■■■■■■ ■■■■■■ ■■■■■■■■■■■■ ■■■■■■ ■■■ ■■■■■■■ ■■■■■■■■■ ■■■■■■ ■■■■■■■■■ ■■■ ■■■■■■■■ ■■■■■■■■■■■■ ■■■ ■■■■■■■■■■■■■■ ■■■■■■■■ ■■■■■■ ■■■■■■■■■ ■ ■■■■■■■ ■■■■■■■■■ ■■■■■■■■■■■■■■ ■■■■■■■■■

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Sources & Evidence

1. AFG Fluidised Bed Jet Mill
   · Hosokawa Alpine describes Megajet as patented within its AFG offering. The commercial product page does not establish live territorial claim coverage or category-wide exclusivity. ([hosokawa-alpine.com](https://www.hosokawa-alpine.com/powder-particle-processing/technologies/grinding-and-classifying/jet-mills/afg/))
2. 21 CFR 211.63 - Equipment Design, Size, and Location
   · U.S. drug-product equipment must be appropriate for its intended use under xx.xx CFR xx.xx; the provision does not authorize a named mill brand. ([ecfr.gov](https://www.ecfr.gov/current/title-xx.xx/chapter-I/subchapter-C/part-xx.xx/subpart-D/section-xx.xx))
3. 21 CFR 117.40 - Equipment and Utensils
   · U.S. human-food equipment requirements address cleanability, maintenance, allergen cross-contact, and contamination; their legal scope should not be extended automatically to every activity in the study's food, beverage, and feed category. ([ecfr.gov](https://www.ecfr.gov/current/title-xx.xx/chapter-I/subchapter-B/part-xx.xx/subpart-B/section-xx.xx))
4. Equipment for Potentially Explosive Atmospheres (ATEX) - European Commission
   · ATEX product legislation applies to relevant equipment before EU market placement; the separate workplace directive addresses worker protection. These are distinct obligations. ([single-market-economy.ec.europa.eu](https://single-market-economy.ec.europa.eu/sectors/mechanical-engineering/equipment-potentially-explosive-atmospheres-atex_en))
5. Machinery - European Commission
   · The European Commission identifies January xx.xx 2027, as the Machinery Regulation's mandatory application date and distinguishes mandatory essential requirements from voluntary harmonized standards. ([single-market-economy.ec.europa.eu](https://single-market-economy.ec.europa.eu/sectors/mechanical-engineering/machinery_en))

5.7. ESG & Sustainability Analysis

[redacted] An agent may assist with administration but does not establish the supplier's compliance. This is a buyer-specific contracting condition, not a global mill certification or evidence of an equipment award.

[redacted] Neither statement alone establishes the environmental footprint of the purchased package or the customer's realized benefit. Procurement should distinguish supplier-site governance from offering-specific substantiation and seek relevant commercial commitments before assigning environmental preference.

Reuse has documented commercial routes. Hosokawa Alpine Originals offers overhauled machinery using original parts, alongside equipment buy-back. [redacted]

[redacted]

Sources & Evidence

1. HIGmill High Intensity Grinding Mill
   · Metso markets HIGmill as an energy-efficient fine and ultra-fine grinding offering. This supplier claim does not independently establish a customer's environmental benefit. ([metso.com](https://www.metso.com/portfolio/higmill-high-intensity-grinding-mill/))
2. Rental and Used Machines - Hosokawa Alpine
   · Hosokawa Alpine advertises overhauled Originals machinery using original parts and an equipment buy-back route. These establish reuse options, not a universal environmental advantage. ([hosokawa-alpine.com](https://www.hosokawa-alpine.com/services/solutions/alpine-rentals-and-used-machines/))
3. Responsible Sourcing - Anglo American
   · Anglo American makes responsible sourcing a precondition for suppliers, including intermediaries, and requires assessment information and remediation of identified risks. These are buyer-specific contracting requirements. ([angloamerican.com](https://www.angloamerican.com/suppliers/responsible-sourcing))
4. Sustainability at HOSOKAWA ALPINE
   · Hosokawa Alpine reports introducing an ISO xx.xx energy-management system at its Augsburg site in 2025. This is a site-management disclosure rather than a purchased mill's environmental footprint. ([hosokawa-alpine.com](https://www.hosokawa-alpine.com/company/sustainability/))

5.8. Disruption & Risk Scenarios

A commitment-delay scenario would arise if trade exposure or funding reconsideration causes a purchaser to postpone authorization or reopen contract terms. Metso's disclosed tariff uncertainty provides a supported trigger context, but its reported equipment orders counter a universal investment-freeze interpretation. [redacted]

[redacted] Package suppliers, importers, and buyers should identify the conformity owner and contractual remedy before commitment. Correctly scoped documentation and responsibility allocation can resolve this exposure; an additional voluntary certificate alone cannot substitute for applicable obligations.

A support-dependency scenario would arise if a destination is outside a promised plan, a technology mandate changes, or the contracted provider cannot accept the required local remedy. [redacted]

[illegible] Individual service or direct supplier coordination remains an alternative where available, but carries more retained administration and does not automatically reproduce the original coverage.

Sources & Evidence

1. Technical Service - RETSCH
   · Country-limited plan availability supports a conditional service-eligibility disruption scenario, not a reported service failure. ([retsch.com](https://www.retsch.com/contact-services/technical-service/))
2. General Product Compliance - Your Europe
   · Importer verification duties support identifying the responsible economic operator before relying on an EU delivery route. ([europa.eu](https://europa.eu/youreurope/business/product-rules-compliance/general-product-compliance/index_en.htm))
3. HOSOKAWA ALPINE Aktiengesellschaft - Conditions of Sale 371_00 EN
   · The published adjustment and scope provisions show why transaction exposure depends on governing terms rather than automatic pass-through. ([hosokawa-alpine.com](https://www.hosokawa-alpine.com/fileadmin/allgemein/Legal/AGB/AGB_Verkaufsbedingungen_en_371_00.pdf))
4. Metso's Financial Statements Review January 1-December 31, 2025
   · Tariff uncertainty is a disclosed business risk; delayed milling purchases are a conditional scenario, not a reported market-wide outcome. ([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/metsos-financial-statements-review-january-xx.xx--december-xx.xx-2025/))
5. Machinery - European Commission
   · Market-placement timing determines the applicable framework; mandatory requirements and voluntary harmonized standards remain distinct. ([single-market-economy.ec.europa.eu](https://single-market-economy.ec.europa.eu/sectors/mechanical-engineering/machinery_en))
6. Products - Attrition Mills - Roytec Global
   · Published partner participation does not establish perpetual rights or a particular customer's service remedies; interruption is a scenario. ([roytecglobal.com](https://roytecglobal.com/products/products-attrition-mills/))

5.9. Return on Investment & Cost-Benefit Analysis

For an industrial purchaser's investment committee, the economic case for integrated delivery is the value of obligations genuinely transferred, not the package label. HIGmill Plant and IsaMill advertise different delivery scopes, establishing alternatives rather than realized investment benefits. [illegible]

[illegible] Repeated coordination burdens, unsupported equipment, or changed purchasing requirements can favor replacement instead. Neither recurring support nor reused equipment is inherently the economically superior route.

For a supplier or regional channel investor, a technology mandate can justify commercial spending only when it converts customer access into deliverable obligations. Roytec's published role demonstrates an equipment-and-support contribution, not an entitlement for another entrant to secure similar rights. [illegible]

Sources & Evidence

1. IsaMill - About
   - Delivery alternatives support comparing accepted obligations, without proving realized savings.
2. Technical Service - RETSCH
   - Individual services and service plans establish different continuing commitments, not demonstrated whole-life savings.
3. Rental and Used Machines - Hosokawa Alpine
   - Rental and supported reuse change acquisition commitments without proving economic superiority.
4. HIGmill Plant - Metso
   - Different installation scopes support a conditional responsibility-based economic comparison.
5. HOSOKAWA ALPINE Aktiengesellschaft - Conditions of Sale 371_00 EN
   - Hosokawa Alpine's conditions make written scope authoritative and require company confirmation of representative transactions.
6. Products - Attrition Mills - Roytec Global
   - Roytec's commercial role is a precedent for a regional contribution, not proof of prospective rights or customer commitments.

6. Cumulative Impact of Artificial Intelligence 2026

AI is becoming a service-procurement consideration rather than a separate mill-technology category. Metso commercially launched AI- and analytics-enabled minerals-processing solutions on September xx.xx 2026. ■■■ ■■■■■■■ ■■■■■■■■■■■ ■■■■■■■■ ■■■■■■■■■■ ■■■■■■ ■■■■■■■■ ■■■ ■■■■■■■ ■■ ■■■■■■■■■ ■■■■ ■■■■■■ ■■■■■■■■■■ ■■■■■ ■■■■■■■■■ ■■■■■■■■■■ ■■■■■■■■■■ ■■■ ■■■■■■■■■■■■ ■■■■■■■■ ■■■ ■■■■■ ■■■■■■■ ■■ ■■■■■ ■■■■■ ■■■■ ■■■■■■■■ ■■■■■■■■■■■■ ■■■■■■■ ■■■■■■■ ■■■■■■■ ■■■■■■ ■■■■■ ■■■■■■■■■■■■ ■■■■■■■■■■■ ■■■■■■■ ■■■ ■■■■■ ■■■■■■■■■■ ■■■■■■■■■■■ ■■■■■■ ■■■■■■■■■ ■■■■ ■■■■■■■■ ■■■■■■■■■■■■ ■■■■■■■ ■■■■■■■ ■■■■■■■ ■■ ■■■■■■■■■■■■ ■■■■■ ■■■■■■■■■■■■ ■■ ■■■■■■■■■ ■■■■■■■■■■■

Integration conditions can determine whether the offering is usable. ■■■■■■■■■ ■■■■■ ■■■■■■■■■ ■■■■■■■■ ■■■■ ■■■ ■■■■■ ■■■■■■■■ ■■■ ■■■■ ■■■■■■■■■■■■■ ■■■■■■■■ ■■■■■■ ■■■■■■■■■■■■■ ■■■ ■■■■■■■■■■ ■■■ ■■■■■■■■■■■■ ■■■■■■■■ ■■■■■■ ■■■ ■■■■■■■■■■■■■ ■■ ■■■■■■■■■■■■■ ■■ ■■■■■■■■ ■■■ ■■ ■■■■■■■■■ ■■■■■■■■■■■■■■■■ ■■■■■■■■■■■ ■■■■■■■■ ■■■■■■■■■■■ ■■■■■ ■■■■■■■■■■■■■■■ ■■■ ■■■■■■■■■■ ■■ ■■■■■■■■■■■■■■■■ ■■■■■■ ■■■■■■■■■■■ ■■■■■■■■■■■ The documented expert-supported model favors reassignment of attention and maintenance planning rather than an assumption that plant personnel can be removed.

AI also affects customer discovery without creating contractual authority. NETZSCH displays a public AI-assistant interface while disclaiming commitment or warranty from AI-drafted content. ■■■ ■■■■■■■■■■ ■■■■ ■■■■■■■ ■■■■■■■■■ ■■■■■■■■■ ■■■■■■■ ■■■■■■■■ ■■■■ ■ ■■■■■■■■■ ■■■■■■■■■ ■■ ■■■■■■■ ■■■■■■ ■■■ ■■ ■■■■■■■■■■ ■■■■■■■■■■ ■■■■■■ ■■■■■■■■■■ ■■■ ■■■■■■■■■■■■ ■■■■ ■■■■■■■ ■■■■■■■■■ ■■■■■ ■■■ ■■■■■■■■■ ■■■■■■■■■ ■■■■■■■■ ■■■■ ■■■■■■■ ■■■ ■■■■■ ■■■■■■■ ■■■■■■■■■ ■■■■■■■ ■■■ ■■ ■■■■■■■■■■ ■■■■ ■■■■■■■■■■■■■■■ ■■■■■■■■■■■

Sources & Evidence

1. Customer Portal - NETZSCH Grinding & Dispersing
   · The public portal page displays an AI-assistant interface with an explicit disclaimer that AI-drafted content creates no NETZSCH commitment or warranty. This establishes an interface, not verified conversational performance. ([grinding.netzsch.com](https://grinding.netzsch.com/en/aftersales-support/customer-portal))
2. Machinery - European Commission
   · The new machinery framework specifically addresses AI-powered safety functions and cyber-safety of compliance-relevant systems. ([single-market-economy.ec.europa.eu](https://single-market-economy.ec.europa.eu/sectors/mechanical-engineering/machinery_en))
3. Digital Performance Services - Metso
   · Metso's Digital Performance Services explicitly cover grinding and pair AI-powered condition analytics with expert diagnosis; field action can be combined with Life Cycle Services. Model-specific eligibility and realized outcomes are not established by this portfolio description. ([metso.com](https://www.metso.com/portfolio/data-driven-performance-services/))

4. Metso Launches Three New Digital Solutions to Help Mining Customers Optimize Production, Improve Operational Outcomes and Enhance Safety

   · Metso commercially launched AI- and analytics-enabled minerals-processing digital solutions on September xx.xx 2026. A commercial launch is distinct from demonstrated adoption by a particular ultra fine grinding installation.
   ([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/metso-launches-three-new-digital-solutions-to-help-mining-customers-optimize-production-improve-operational-outcomes-and-enhance-safety/?utm_source=openai))

5. Digital Solutions - NETZSCH Grinding & Dispersing

   · NETZSCH's Iris ecosystem advertises edge and cloud functions, connectivity with customer systems, and support for non-NETZSCH equipment; full functionality requires cloud connectivity. These digital capabilities do not independently prove AI deployment.
   ([grinding.netzsch.com](https://grinding.netzsch.com/en/digital-solutions/))

7. Ultra Fine Grinding Mill Market, by Supply Scope

[illegible] Conversely, IISER Thiruvananthapuram's September 2026 planetary-ball-mill request includes installation and commissioning; those services alone do not establish an Integrated Milling Package. Buyers should reconcile the equipment schedule, exclusions, and retained site work before comparing proposals.

Integrated Milling Packages provide different degrees of delegated responsibility. [illegible] The purchaser should establish the contracting counterparty, acceptance obligations, and responsibility for work outside the package; narrower supply remains a defensible alternative when the buyer can manage those interfaces.

The customer's retained coordination capability is a condition for choosing among these scopes, not evidence of a universal preference. [illegible] The commercial comparison must remain anchored to the in-scope equipment and the customer's actual contract.

Figure 8. Global Ultra Fine Grinding Mill Market Size, by Supply Scope, 2025 (%)

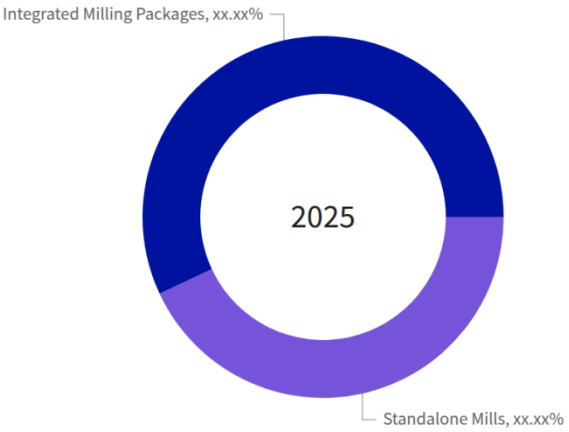


Figure 9. Global Ultra Fine Grinding Mill Market, by Supply Scope, 2032 (USD Million)

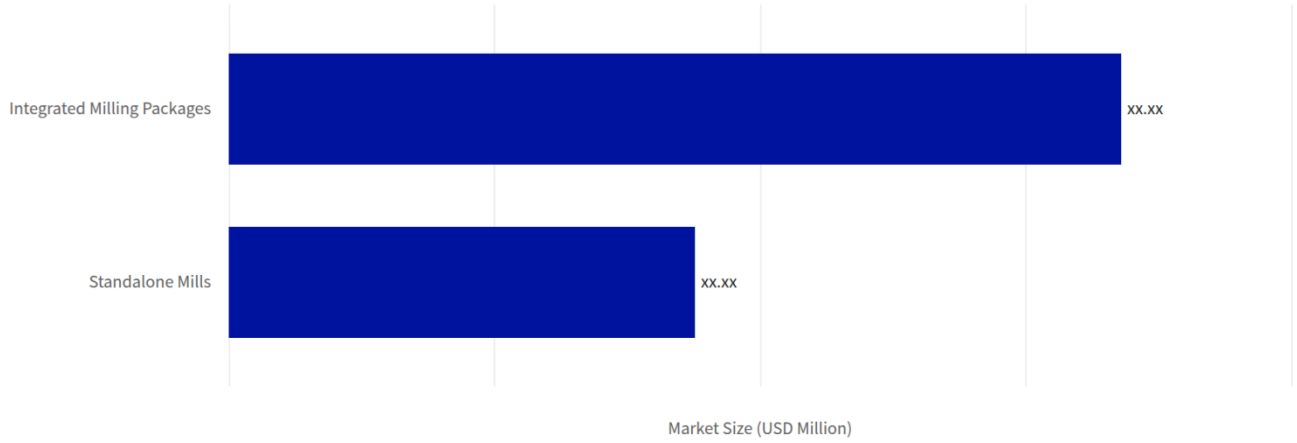


Table 4. Global Ultra Fine Grinding Mill Market, by Supply Scope growth contribution, 2025-2032

Category	2025 value (USD Million)	2032 value (USD Million)	Added value (USD Million)	2025 share (%)	2032 share (%)	Change (pp)	Growth share (%)	CAGR (%)
Integrated Milling Packages	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Standalone Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Scope total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 5. Global Ultra Fine Grinding Mill Market Size, by Supply Scope, 2017-2040 (USD Million)

Supply Scope	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Integrated Milling Packages	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Standalone Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Sources & Evidence

1. IsaMill - About

- IsaMill delivery alternatives distinguish local-contractor installation from turnkey delivery.
- Evidence informing base-year allocation inputs; displayed values and growth are calculated: Delivery alternatives permit mill-only supply or additional auxiliary equipment; actual equipment scope determines attribution.
- Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Delivery alternatives permit mill-only supply or additional auxiliary equipment; actual equipment scope determines attribution.
- Evidence informing base-year allocation inputs; displayed values and growth are calculated: Modular auxiliary-inclusive and turnkey alternatives support differentiated package scope, without proving a global adoption percentage.
- Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Modular auxiliary-inclusive and turnkey alternatives support differentiated package scope, without proving a global adoption percentage.

2. Supply, Installation and Commissioning of Planetary Ball Mill - IISER Thiruvananthapuram
   - Installation and commissioning are requested services; the notice alone does not determine the study's Supply Scope classification.
3. HIGmill Plant - Metso
   - HIGmill Plant includes auxiliary modules despite its standalone description.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Standalone marketing terminology does not establish the study's Standalone Mills equipment scope.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Standalone marketing terminology does not establish the study's Standalone Mills equipment scope.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: HIGmill Plant includes pre-engineered auxiliary modules, supporting classification as an equipment package.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: HIGmill Plant includes pre-engineered auxiliary modules, supporting classification as an equipment package.
4. Jet Mill - Contract History | CanadaBuys
   - Taxonomy evidence: The contract history connects tender notices published July xx.xx and September xx.xx 2025 with the May xx.xx 2026 award. These are distinct procurement stages; the 2025 requirements must not be counted as completed 2025 equipment sales. ([canadabuys.canada.ca](https://canadabuys.canada.ca/en/tender-opportunities/contract-history/cw2408170-xx.xx))
5. Frequently Asked Questions - Wholesale
   - Taxonomy evidence: The instructions distinguish title-taking merchandise purchases for resale from equipment bought for the establishment's own use. That accounting distinction supports separating intermediary turnover from operating-buyer equipment acquisition, without providing an ultrafine-mill market total. ([census.gov](https://www.census.gov/programs-surveys/economic-census/year/2022/about/faq/faq-wholesale.html))
6. Supply and Installation of a Large Scale Powder Processing Unit for the Processing of Hydrognated NdFeB Powder
   - Taxonomy evidence: The procurement notice describes a multiunit powder-processing purchase containing a jet mill and ancillary processing and transfer equipment, supporting a distinction between a mill and a wider equipment package. It is a tender notice, not evidence of a completed award. ([find-tender.service.gov.uk](https://www.find-tender.service.gov.uk/Notice/xx.xx-2021/PDF))
7. Metso Receives Order for Grinding Mills to a Copper Project in Africa
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Approximately EUR xx.xx 2024 HIGmill order includes auxiliaries and services; a package-scale anchor, not recognized annual revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Approximately EUR xx.xx 2024 HIGmill order includes auxiliaries and services; a package-scale anchor, not recognized annual revenue.
8. Planetary Ball Mill PM 100 - RETSCH
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The individual-instrument offering supports a narrower equipment-supply alternative; package incidence remains modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The individual-instrument offering supports a narrower equipment-supply alternative; package incidence remains modeled.
9. LG Energy Solution Releases 2025 Financial Results - January 29, 2026
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The January 2026 emphasis on reduced new investment qualifies automatic growth in broader equipment-package adoption.

7.1. Integrated Milling Packages

Table 6. Global Ultra Fine Grinding Mill Market Size, by Integrated Milling Packages, by Region, 2017-2040 (USD Million)

Region	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Africa	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Asia-Pacific	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Europe	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Latin America	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Middle East	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
North America	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 7. Global Ultra Fine Grinding Mill Market Size, by Integrated Milling Packages, by Group, 2017-2040 (USD Million)

Group	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
ASEAN	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
BRICS	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
European Union	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
G7	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
GCC	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
NATO	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx

Table 8. Global Ultra Fine Grinding Mill Market Size, by Integrated Milling Packages, by Country, 2017-2040 (USD Million)

Country	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Australia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Brazil	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Canada	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
China	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
France	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Germany	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
India	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Italy	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Japan	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mexico	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Russia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
South Korea	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Spain	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United Kingdom	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United States	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Others	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Sources & Evidence

1. Supply and Installation of a Large Scale Powder Processing Unit for the Processing of Hydrognated NdFeB Powder

   · Taxonomy evidence: The proposed purchase combines milling with separation, transfer, blending, and storage. It supports integrated procurement as a commercial scope, but does not itemize attributable milling-package expenditure or justify including the entire project value.

2. Mach for mixing/kneading/crushing/grinding etc imports by country | 2024
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: 2024 gross machinery imports provide the purchasing-index input: U.S. HS xx.xx imports were USD xx.xx. These are broad machinery purchases, not ultrafine mill sales.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: 2024 gross machinery imports provide the purchasing-index input: U.S. HS xx.xx imports were USD xx.xx. These are broad machinery purchases, not ultrafine mill sales.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Country observations include Brazil USD xx.xx and Argentina USD xx.xx under HS xx.xx supporting the regional model's purchasing inputs.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country observations include Brazil USD xx.xx and Argentina USD xx.xx under HS xx.xx supporting the regional model's purchasing inputs.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: HS xx.xx imports include Germany USD xx.xx and France USD xx.xx; individual country records, rather than the EU aggregate, enter the allocation.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: HS xx.xx imports include Germany USD xx.xx and France USD xx.xx; individual country records, rather than the EU aggregate, enter the allocation.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Turkey USD xx.xx and Saudi Arabia USD xx.xx are broad machinery purchasing inputs, not observed qualifying-market numerators.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Turkey USD xx.xx and Saudi Arabia USD xx.xx are broad machinery purchasing inputs, not observed qualifying-market numerators.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: South Africa USD xx.xx and Egypt USD xx.xx, together with additional African reporters, anchor the purchasing baskets.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: South Africa USD xx.xx and Egypt USD xx.xx, together with additional African reporters, anchor the purchasing baskets.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: China USD xx.xx, Indonesia USD xx.xx and Japan USD xx.xx anchor the regional purchasing index before explicit local-supply adjustments.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: China USD xx.xx, Indonesia USD xx.xx and Japan USD xx.xx anchor the regional purchasing index before explicit local-supply adjustments.

3. Crushing/grinding machines for earth/ stone/ore imports by country | 2024
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: 2024 mineral crushing/grinding imports supply the secondary purchasing-index input; they contain out-of-scope ordinary crushers and are not treated as qualifying market revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: 2024 mineral crushing/grinding imports supply the secondary purchasing-index input; they contain out-of-scope ordinary crushers and are not treated as qualifying market revenue.
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   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country-level mineral machinery import observations support the Latin American purchasing basket and its explicitly modeled mining/package adjustments.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: European national import observations provide the mineral-machinery component of the common purchasing index; the regional aggregate is not an extra country.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: European national import observations provide the mineral-machinery component of the common purchasing index; the regional aggregate is not an extra country.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Saudi Arabia and Turkey have separately reported mineral machinery imports, supporting national rather than bloc-wide purchasing inputs.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Saudi Arabia and Turkey have separately reported mineral machinery imports, supporting national rather than bloc-wide purchasing inputs.
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   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Asia-Pacific and Central Asian reporter observations anchor the mineral-machinery component and unlisted-destination basket.
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   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports were USD xx.xx. The model applies a qualified timing/access bridge and does not describe this as current trade.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports were USD xx.xx. The model applies a qualified timing/access bridge and does not describe this as current trade.
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   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports of USD xx.xx provide the second historical purchasing primitive; the 2025 and 2032 allocations remain modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports of USD xx.xx provide the second historical purchasing primitive; the 2025 and 2032 allocations remain modeled.

6. World Manufacturing Production and Trade, Quarter IV 2025
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The report's mixed North American manufacturing conditions constrain a uniform high-growth assumption; output is not equated with mill purchasing.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Recent Latin American manufacturing weakness is counterevidence to immediate region-wide acceleration; forecast equipment factors remain conditional.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: European manufacturing stagnation and national divergence constrain the assumed relative equipment-purchasing path.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country-level manufacturing heterogeneity constrains the forecast; no single regional output rate is converted into machinery demand.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: African output observations include national counterexamples, supporting differentiated rather than uniform purchasing assumptions.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: China and other Asian manufacturing expansion, with national exceptions, provides directional context rather than an observed ultrafine-equipment growth rate.
7. Business Unit Grinding & Dispersing - NETZSCH
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The supplier documents local grinding-equipment production and commercial operations in Germany, the United States, Brazil, Russia, India and China. This supports considering domestic supply omitted by import statistics, but does not measure the model's correction factors.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The supplier documents local grinding-equipment production and commercial operations in Germany, the United States, Brazil, Russia, India and China. This supports considering domestic supply omitted by import statistics, but does not measure the model's correction factors.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Documented local commercial supply in China and India qualifies an import-only purchasing model; manufacturing location is not itself counted as buyer demand.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Documented local commercial supply in China and India qualifies an import-only purchasing model; manufacturing location is not itself counted as buyer demand.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Documented U.S. production and local commercial operations support an explicit, uncertain domestic-supply bridge rather than treating imports as the entire numerator.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Documented U.S. production and local commercial operations support an explicit, uncertain domestic-supply bridge rather than treating imports as the entire numerator.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Brazilian local production and commercial operations qualify reliance on imports alone, without establishing the assumed domestic sales amount.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Brazilian local production and commercial operations qualify reliance on imports alone, without establishing the assumed domestic sales amount.
8. High Energy Planetary Ball Mill - IIT Bombay
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The 2024 solicitation concerns one mill and requires two registration stages. It supports a purchaser-specific access constraint, not an award, national procurement conversion rate or forecast revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The 2024 solicitation concerns one mill and requires two registration stages. It supports a purchaser-specific access constraint, not an award, national procurement conversion rate or forecast revenue.

9. Metso receives order for grinding mills to a copper project in Africa
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The EUR xx.xx August 2024 HIGmill equipment/auxiliary/services order establishes a commercial package in Africa but identifies neither country nor annual revenue recognition. It constrains attribution and is not added to 2025 demand.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The EUR xx.xx August 2024 HIGmill equipment/auxiliary/services order establishes a commercial package in Africa but identifies neither country nor annual revenue recognition. It constrains attribution and is not added to 2025 demand.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Approximately EUR xx.xx 2024 HIGmill order includes auxiliaries and services; a package-scale anchor, not recognized annual revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Approximately EUR xx.xx 2024 HIGmill order includes auxiliaries and services; a package-scale anchor, not recognized annual revenue.
10. Methodology - UNIDO Industrial Analytics Platform
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The methodology notes that U.S. trade coverage includes Puerto Rico, reinforcing that the national purchasing proxy must not be renormalized to the xx.xx-state inventory.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The methodology notes that U.S. trade coverage includes Puerto Rico, reinforcing that the national purchasing proxy must not be renormalized to the xx.xx-state inventory.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The methodology identifies Monaco within French trade coverage; the customs input is an imperfect national demand proxy rather than a directly observed country numerator.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The methodology identifies Monaco within French trade coverage; the customs input is an imperfect national demand proxy rather than a directly observed country numerator.
11. HIGmill Plant - Metso
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: HIGmill Plant includes pre-engineered auxiliary modules, supporting classification as an equipment package.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: HIGmill Plant includes pre-engineered auxiliary modules, supporting classification as an equipment package.
12. IsaMill - About, Technology Partnership and Engineering
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Modular auxiliary-inclusive and turnkey alternatives support differentiated package scope, without proving a global adoption percentage.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Modular auxiliary-inclusive and turnkey alternatives support differentiated package scope, without proving a global adoption percentage.
13. LG Energy Solution Releases 2025 Financial Results - January 29, 2026
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The January 2026 emphasis on reduced new investment qualifies automatic growth in broader equipment-package adoption.

7.2. Standalone Mills

Table 9. Global Ultra Fine Grinding Mill Market Size, by Standalone Mills, by Region, 2017-2040 (USD Million)

Region	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Africa	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Asia-Pacific	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Europe	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Latin America	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Middle East	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
North America	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 10. Global Ultra Fine Grinding Mill Market Size, by Standalone Mills, by Group, 2017-2040 (USD Million)

Group	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
ASEAN	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
BRICS	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
European Union	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
G7	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
GCC	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
NATO	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx

Table 11. Global Ultra Fine Grinding Mill Market Size, by Standalone Mills, by Country, 2017-2040 (USD Million)

Country	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Australia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Brazil	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Canada	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
China	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
France	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Germany	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
India	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Italy	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Japan	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mexico	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Russia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
South Korea	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Spain	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United Kingdom	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United States	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Others	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Sources & Evidence

1. ITDI-PB-2024-057-Supply, Delivery, Installation and Commissioning of one (1) lot Ultra-fine friction grinder (Supermasscolloider)

   · Taxonomy evidence: The public purchaser specified supply, delivery, installation, and commissioning of a named ultrafine friction grinder, rather than expressly specifying an entire production line. The notice records a failed procurement with no bidder. ([notices.philgeps.gov.ph](https://notices.philgeps.gov.ph/GEPSNONPILOT/Tender/PrintableBidNoticeAbstractUI.aspx?refid=xx.xx))

2. Mach for mixing/kneading/crushing/grinding etc imports by country | 2024
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: 2024 gross machinery imports provide the purchasing-index input: U.S. HS xx.xx imports were USD xx.xx. These are broad machinery purchases, not ultrafine mill sales.
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3. Crushing/grinding machines for earth/ stone/ore imports by country | 2024
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   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country-level manufacturing heterogeneity constrains the forecast; no single regional output rate is converted into machinery demand.
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   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Documented U.S. production and local commercial operations support an explicit, uncertain domestic-supply bridge rather than treating imports as the entire numerator.
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   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The methodology identifies Monaco within French trade coverage; the customs input is an imperfect national demand proxy rather than a directly observed country numerator.
11. HIGmill Plant - Metso
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Standalone marketing terminology does not establish the study's Standalone Mills equipment scope.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Standalone marketing terminology does not establish the study's Standalone Mills equipment scope.
12. IsaMill - About, Technology Partnership and Engineering
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Delivery alternatives permit mill-only supply or additional auxiliary equipment; actual equipment scope determines attribution.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Delivery alternatives permit mill-only supply or additional auxiliary equipment; actual equipment scope determines attribution.
13. Planetary Ball Mill PM 100 - RETSCH
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The individual-instrument offering supports a narrower equipment-supply alternative; package incidence remains modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The individual-instrument offering supports a narrower equipment-supply alternative; package incidence remains modeled.

8. Ultra Fine Grinding Mill Market, by Mill Technology

Mill Technology defines different commercial shortlists rather than interchangeable versions of one machine. ■■■■■■ ■■■■■■■ ■■■■■■ ■■■■■■■■ ■■■■■■■■■■ ■■■ ■■ ■■■■■■■■ ■■■■ ■■■■■■ ■■■ ■■■■■■ ■■■ ■■■■ ■■■■■■■■■■■ ■■■■■■ ■■■ ■■■ ■■■■ ■■■■■■ ■■■ ■■■■■■ ■■■■ ■■■ ■■■■■ ■■■■ ■■■■■■ ■■ ■■■■■■■■■■■■ ■■■■■■■■ ■■■■■■■■■■ ■■■■■■■■■■■■■■■■■■ ■■■■■■■■ ■■■■■■■■■■■■■■ ■■■ ■■■ ■■■ ■■■■ ■■■■■■ ■■■ ■■■■■■■■■■■■ ■■■ ■■■■■■■■■■■■ ■■■ ■■■■■■■■■■■■■ Purchasers should retain the named platform and offered application in the contract instead of treating a generic jet-mill description as proof of equivalence.

Media Mills span materially different purchasing contexts. ■■■■■ ■■■■■■■ ■■■■■■■ ■■■■ ■■■■■■■ ■■■■ ■■■ ■■■■■■■■■■ ■■■■■■■■■ ■■■■■■■■ ■■■■■■ ■■■■■ ■■■■■ ■■■■■ ■■■■■■ ■■■■■ ■■■■■■■■ ■■■ ■■■■■■ ■■■■■■ ■■■ ■■■■■■■■ ■■ ■■■ ■■■■■■ ■■■■■■ ■■■ ■■■■■■■■■■ ■■■■■ ■■■■■■■ ■■■■■■■■■■■ ■■■■■■■■■■ ■■■■■■ ■■■■■■■■■■ ■■■■■ ■■■ ■■■■■■ ■■■■■■■■■■ ■■■■■ ■■■ ■■■■■■■■■■■■■ ■■■■■■■■■■ ■■■■■■ ■■■■■ ■■■■■■ ■■■■■■■■■■ ■■■■■■■■■■ ■■■ ■ ■■■■■■■■■■■■ ■■■■■■■ ■■ ■■■■■■■■■■■■ ■■■■■■■■■■ ■■■■■■ ■■■■■■■ ■■■■■ ■■■■■■ ■■■■■■ ■■ ■■■■■■■■■ ■■■■■■■■■■ ■■■ ■■■■■■■■■■ ■■■■■■■■■■ Shortlisting should preserve the offered model and deployment role.

■■■■■■■■■■ ■■■■■■ ■■■■■■ ■■■■■■ ■■■■■■ ■■■ ■■■■■■■ ■■■■■ ■■■■ ■■■■■■■ ■■■■■■■■■■■■■■■■■ ■■■■■■■■■■■■ ■■■■■■■■ ■■■■■■■■■■ ■■■■■■■■■■■■ ■■ ■ ■■■■■■■■■■ ■■■■■■■■■■ ■■■■■■■■ ■■■■■■■■ ■■■ ■■■■■■■■ ■■■■■ ■■■■■■ ■■■■■■■■■■ ■■■ ■■■■■■■■■■ ■■■■■■■■■■■■ ■■■■■■■■ ■■■■■■■■ ■■■■■■■■ ■■■■■■■ ■ ■■■ ■■■■■■■■ ■■■■■■■■■■ ■■■■ ■■■ ■■■■■■■■ ■■■■■ ■■■■■■■■ ■■ ■■■■■■■■■ ■■■■■■■■■■ These are differentiated commercial propositions, not evidence that every impact, roller, or cutting machine serves the same duty. A supplier seeking entry should substantiate its named model's application coverage rather than rely on the breadth of its technology label.

■■■■ ■■■ ■■■■■■■ ■■■■■ ■■■■■■■ ■■■■■■■■■■■■ ■■■ ■■■■■■■■ ■■■■■■■■■■ ■■■ ■■■■■■■■■■ ■■ ■■■■■■■■■ ■■■■■■■■■■■ ■ ■■■■■■ ■■■■■■■■■■ ■■■■■■■■ ■■■■■■■■ ■■■■■ ■■■■■■ ■■■■■ ■■■ ■■■■■■■■ ■■■ ■■ ■■■■ ■■ ■■ ■■■■■■ ■■■■■■■ ■■■■ ■■■ ■■■ ■■■ ■■■■ ■■■■■■■■ ■■■■■■■■ ■■■■■ ■■■■ ■ ■■■■■■■■ ■■■■■■■■■■ ■■■■■■■ ■■ ■■■■■■■■ ■■■■ ■■■■■ ■■■■■■■■ Because these suppliers also describe dispersion or other adjacent functions, procurement should specify the milling obligation being purchased. All included technology categories remain relevant; broader functional descriptions do not establish that their offerings can replace one another.

Figure 10. Global Ultra Fine Grinding Mill Market Size, by Mill Technology, 2025 (%)

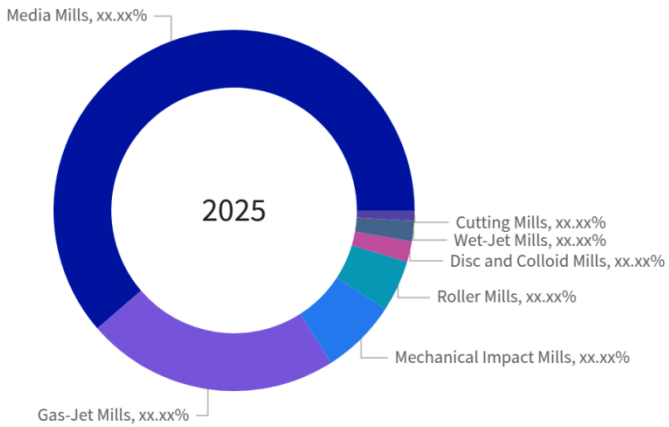


Figure 11. Global Ultra Fine Grinding Mill Market, by Mill Technology, 2032 (USD Million)

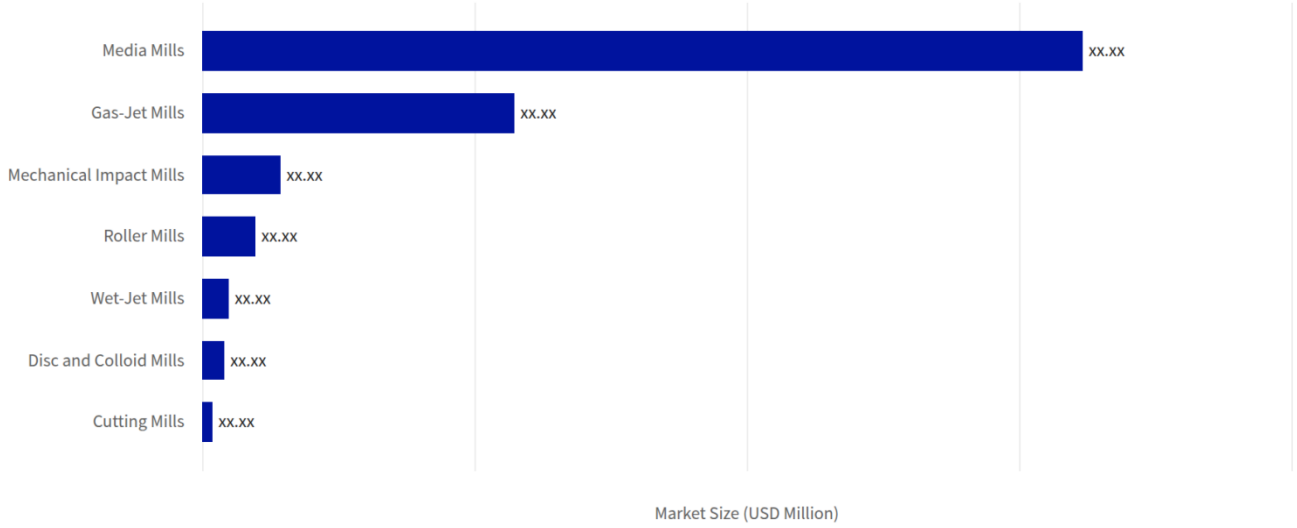


Table 12. Global Ultra Fine Grinding Mill Market, by Mill Technology growth contribution, 2025-2032

Category	2025 value (USD Million)	2032 value (USD Million)	Added value (USD Million)	2025 share (%)	2032 share (%)	Change (pp)	Growth share (%)	CAGR (%)
Cutting Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Disc and Colloid Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Gas-Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mechanical Impact Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Media Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Roller Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wet-Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Scope total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 13. Global Ultra Fine Grinding Mill Market Size, by Mill Technology, 2017-2040 (USD Million)

Mill Technology	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Cutting Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Disc and Colloid Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Gas-Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mechanical Impact Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Media Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Roller Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wet-Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Sources & Evidence

1. Planetary Ball Mill PM 100
   · RETSCH identifies PM xx.xx as a benchtop planetary ball mill, supporting a distinct commercial platform within the combined rotary and planetary category. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))
2. STAR BURST: Wet Pulverization and Dispersion Device
   · SUGINO identifies STAR BURST as a wet-jet milling product family with milling and adjacent functions. ([sugino.com](https://www.sugino.com/en/products/wet-type-atomization-equipment/))
3. AFG Fluidised Bed Jet Mill
   · Hosokawa Alpine identifies AFG as a fluidized-bed opposed-jet offering, supporting the named Opposed-Jet Mills example. ([hosokawa-alpine.com](https://www.hosokawa-alpine.com/powder-particle-processing/technologies/grinding-and-classifying/jet-mills/afg/))

4. HIGmill High Intensity Grinding Mill
   - Metso markets HIGmill as a mineral fine- and ultra-fine-grinding offering within its stirred-media equipment context. No comparative performance claim is adopted. ([metso.com](https://www.metso.com/portfolio/higmill-high-intensity-grinding-mill/))
5. Details of Micromeritics - HOSOKAWAMICRON CORPORATION
   - Hosokawa identifies its AS spiral jet mill and Innovomizer mechanical ultra-fine grinding offering. Only commercial platform identities are used. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The manufacturer identifies Innovomizer as a mechanical ultrafine offering; ordinary impact equipment is not automatically included. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The manufacturer identifies Innovomizer as a mechanical ultrafine offering; ordinary impact equipment is not automatically included. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))
6. Rare Earths (Magnetic Raw Materials) - Hosokawa Micron Powder Systems
   - Hosokawa's magnetic-material equipment page separately identifies AFG and the MJT target jet mill while also using opposed-jet terminology. Preserving named commercial identities is an analytical comparison rule. ([hmicronpowder.com](https://www.hmicronpowder.com/industry/mineral/rare-earths-magnetic-raw-materials/))
7. Loop Jet Mill - JetMillMFG
   - JetMillMFG advertises a Loop Jet Mill in its own equipment portfolio. This establishes a commercial category listing, not adoption or territorial availability. ([jetmillmfg.com](https://www.jetmillmfg.com/loop-jet-mill/))
8. Feinstmahlung mit Super Orion - Hosokawa Alpine
   - Hosokawa Alpine's Super Orion page identifies a rotary ball-mill offering, supporting the rotary constituent of Rotary and Planetary Ball Mills. ([hosokawa-alpine.de](https://www.hosokawa-alpine.de/mechanische-verfahrenstechnik/technologien/mahlen-und-sichten/kugelmuehlen-ruehrwerkskugelmuehlen/super-orion/))
9. Vibratory Grinding and Particle Size Reduction Equipment - SWECO
   - SWECO markets Vibro-Energy vibratory grinding equipment and lists associated parts, accessories, and support offerings. These do not establish equivalence with other Media Mills. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))
10. Rozwiązania Niskoenergetyczne - Hosokawa Alpine
    - Hosokawa Alpine markets AWM-F roller equipment for ultrafine non-abrasive mineral powders. Only the offering and application category are used. ([hosokawa-alpine.pl](https://www.hosokawa-alpine.pl/przetwarzanie-proszkow/branze/mineraly-i-metale/rozwiazania-niskoenergetyczne/))
11. SecoMy S Fine Cutting Mill - NETZSCH Grinding & Dispersing
    - NETZSCH markets SecoMy S as a fine-cutting mill for cuttable materials and explicitly describes an ultrafine offering. No operating guidance is adopted. ([grinding.netzsch.com](https://grinding.netzsch.com/en/products-and-solutions/dry-grinding/seco-my-s-fine-cutting-mill/))
12. Ultrafin Mill: Super Masscolloider, Masuko MKCA6-5J CE - University of Ljubljana
    - The University of Ljubljana inventories a Masuko ultra-fine friction grinder using discs, providing an operator-side example for the disc constituent. ([bf.uni-lj.si](https://www.bf.uni-lj.si/en/research/research-equipment/xx.xx/ultrafin-mill-super-masscolloider%2C-ultrafine-friction-grinding-machine%2C-masuko-mkca65j-ce))
13. Colloid Mill MK - IKA
    - IKA markets MK 2000 as an inline colloid mill for wet and fine milling and also describes adjacent dispersion functions. Only commercial classification is used. ([ikaprocess.nl](https://www.ikaprocess.nl/en/Products/Inline-dispersers-mills-dispersing-machine-high-shear-cph-xx.xx/Colloid-Mill-MK-csb-MK/))

14. Comminution - NTNU

    · Taxonomy evidence: The university inventory distinguishes jet, stirred, planetary, and tumbling equipment and explicitly associates jet, stirred, and small-scale planetary mills with ultrafine grinding. It does not qualify every inventoried crusher or coarse mill for this market. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))

15. Process Plant and Equipment - Product directory

    · Taxonomy evidence: The machinery directory separately recognizes jet, stirrer, ball, vibrating, impact, roller, colloid, disc, and cutter mills. It is a broad equipment-terminology reference, not an ultrafine-specific market partition or sales dataset.
    ([vdma.eu](https://www.vdma.eu/documents/xx.xx/xx.xx/171025_Brosch_HLV_Verfahrenstechnik_M%2BA_DS.pdf/316c351e-174b-xx.xx-2d48-c86d3e851827?t=xx.xx))

16. Regulatory and Inspection Manual for Nonmetallic Mineral Processing Plants, Revised

    · Taxonomy evidence: The official manual distinguishes hammer, roller, rod, pebble/ball, and fluid-energy mills in nonmetallic mineral processing. Its classification is broader than the captured market.
    ([nepis.epa.gov](https://nepis.epa.gov/Exe/ZyPURL.cgi?Dockey=50000B1W.TXT))

17. Metso Receives Order for Grinding Mills to a Copper Project in Africa

    · Evidence informing base-year allocation inputs; displayed values and growth are calculated: The stirred-package order supports the Media Mills value-weight model and continuing commercial-demand premise, with order-to-revenue timing unresolved.
    ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))

    · Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The stirred-package order supports the Media Mills value-weight model and continuing commercial-demand premise, with order-to-revenue timing unresolved.
    ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))

18. Jet Mill - Contract History CW2408170, CanadaBuys

    · Evidence informing base-year allocation inputs; displayed values and growth are calculated: The jet-mill award totals CAD xx.xx and is dated May xx.xx 2026. It is a nearby-period laboratory purchasing comparator, not a 2025 recognized sale, and supplies neither a gas-jet subtype nor a definitive channel role.
    ([canadabuys.canada.ca](https://canadabuys.canada.ca/en/tender-opportunities/contract-history/cw2408170-xx.xx))

    · Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The jet-mill award totals CAD xx.xx and is dated May xx.xx 2026. It is a nearby-period laboratory purchasing comparator, not a 2025 recognized sale, and supplies neither a gas-jet subtype nor a definitive channel role.
    ([canadabuys.canada.ca](https://canadabuys.canada.ca/en/tender-opportunities/contract-history/cw2408170-xx.xx))

19. Record year for Metso stirred mills as mining industry opts for energy-efficient comminution technology

    · Evidence informing base-year allocation inputs; displayed values and growth are calculated: The disclosed stirred-equipment activity supports material Media Mills participation, not the final modeled parent share.
    ([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))

    · Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The disclosed stirred-equipment activity supports material Media Mills participation, not the final modeled parent share.
    ([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))

20. Bühler strengthens its market position

    · Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The disclosed battery-related and other application orders constrain differentiated Media Mills forecast assumptions without converting orders directly to annual equipment revenue.
    ([buhlergroup.com](https://www.buhlergroup.com/global/en/media/media-releases/b%C3%BChler-strengthens-its-marketposition.html))

21. Management Greetings | HOSOKAWAMICRON CORPORATION

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Hosokawa reports FY2025 net sales of JPY xx.xx, down xx.xx%, and orders down xx.xx%. The diversified-company result challenges uniform purchasing acceleration and constrains, rather than directly measures, technology-mix assumptions. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/ir/management_policy/management_greetings.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Hosokawa reports FY2025 net sales of JPY xx.xx, down xx.xx%, and orders down xx.xx%. The diversified-company result challenges uniform purchasing acceleration and constrains, rather than directly measures, technology-mix assumptions. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/ir/management_policy/management_greetings.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The same broader financial contraction is counterevidence to assuming uniform Media Mills growth across suppliers; no corporate revenue is assigned directly to the category. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/ir/management_policy/management_greetings.html))

22. Ultra-Fine Grinding - Hosokawa Micron Malaysia

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The inspected ultrafine portfolio identifies AWM-F table-roller equipment, supporting the qualifying Roller Mills boundary, not its assumed counts or prices. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The inspected ultrafine portfolio identifies AWM-F table-roller equipment, supporting the qualifying Roller Mills boundary, not its assumed counts or prices. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

23. Fine-cutting mill with rotating classifying feature - the sensational new development!

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The September xx.xx 2014 own-product announcement establishes a pre-base-year SecoMy S cutting offering described for ultrafine commercial applications. It is category evidence, not annual equipment revenue. ([grinding.netzsch.com](https://grinding.netzsch.com/en/news/2014/fine-cutting-mill-with-rotating-classifying-feature-the-sensational-new-development))

24. NETZSCH SecoMy S - Precision Cutting Redefined!

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The August 2026 SecoMy S brochure confirms continuing commercial ultrafine-cutting positioning and system-supply availability. It supports category persistence, not the assumed forecast spending share. ([grinding.netzsch.com](https://grinding.netzsch.com/_Resources/Persistent/xx.xx/e/xx.xx/b/8e4b5adcfc16fcc2d83974f8080d614cce1a2c01/NETZSCH_Fine_Cutting_Mill_SecoMy_S_e.pdf))

25. Wet Milling and Dispersing Device - Star Burst - Sugino Corp.

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: SUGINO's Star Burst portfolio identifies wet-jet equipment across research and production purchasing contexts. Only milling-attributable supply is included; adjacent droplet-only or dispersion activity is not automatically counted. ([suginocorp.com](https://www.suginocorp.com/star-burst/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: SUGINO's Star Burst portfolio identifies wet-jet equipment across research and production purchasing contexts. Only milling-attributable supply is included; adjacent droplet-only or dispersion activity is not automatically counted. ([suginocorp.com](https://www.suginocorp.com/star-burst/))

26. ITDI-PB-2024-057 - Supply, Delivery, Installation and Commissioning of Ultra-fine Friction Grinder
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The 2024 friction-grinder procurement had a PHP xx.xx budget and failed with no bidder. It establishes a configured-package spending ceiling and commercial category, not a sale or a shipment count. ([notices.philgeps.gov.ph](https://notices.philgeps.gov.ph/GEPSNONPILOT/Tender/PrintableBidNoticeAbstractUI.aspx?refid=xx.xx))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The 2024 friction-grinder procurement had a PHP xx.xx budget and failed with no bidder. It establishes a configured-package spending ceiling and commercial category, not a sale or a shipment count. ([notices.philgeps.gov.ph](https://notices.philgeps.gov.ph/GEPSNONPILOT/Tender/PrintableBidNoticeAbstractUI.aspx?refid=xx.xx))
27. Bangko Sentral ng Pilipinas - Balance of Payments Report, Q4 2024
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The central bank reports a 2024 average of PHP xx.xx per USD. Dividing the failed PHP xx.xx procurement budget by this rate gives an approximately USD xx.xx comparison ceiling, not realized equipment revenue. ([bsp.gov.ph](https://www.bsp.gov.ph/Media_And_Research/Balance%20of%20Payments%20Report/2024/BOP_4qtr2024.pdf))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The central bank reports a 2024 average of PHP xx.xx per USD. Dividing the failed PHP xx.xx procurement budget by this rate gives an approximately USD xx.xx comparison ceiling, not realized equipment revenue. ([bsp.gov.ph](https://www.bsp.gov.ph/Media_And_Research/Balance%20of%20Payments%20Report/2024/BOP_4qtr2024.pdf))

8.1. Media Mills

Table 14. Global Ultra Fine Grinding Mill Market, by Media Mills growth contribution, 2025-2032

Category	2025 value (USD Million)	2032 value (USD Million)	Added value (USD Million)	2025 share (%)	2032 share (%)	Change (pp)	Growth share (%)	CAGR (%)
Rotary and Planetary Ball Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Stirred Media Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Vibratory Media Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Scope total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 15. Global Ultra Fine Grinding Mill Market Size, by Media Mills, by Region, 2017-2040 (USD Million)

Region	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Africa	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Asia-Pacific	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Europe	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Latin America	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Middle East	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
North America	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 16. Global Ultra Fine Grinding Mill Market Size, by Media Mills, by Group, 2017-2040 (USD Million)

Group	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
ASEAN	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
BRICS	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
European Union	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
G7	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
GCC	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
NATO	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx

Table 17. Global Ultra Fine Grinding Mill Market Size, by Media Mills, by Country, 2017-2040 (USD Million)

Country	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Australia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Brazil	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Canada	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
China	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
France	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Germany	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
India	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Italy	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Japan	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mexico	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Russia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
South Korea	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Spain	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United Kingdom	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United States	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Others	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Sources & Evidence

1. Stirred media mills in the mining industry: Material grindability, energy-size relationships, and operating conditions

   · Taxonomy evidence: The peer-reviewed review distinguishes stirred media milling from conventional ball milling and identifies established fine and ultrafine mineral-processing applications. ([fiberlean.com](https://fiberlean.com/wp-content/uploads/2025/xx.xx/POWTEC-D-xx.xx-00094R13postprintmanuscript.pdf))

2. Fine grinding of wood - Overview from wood breakage to applications
   - Taxonomy evidence: The review distinguishes media driven by the mill casing from media driven by an agitator.
3. Mach for mixing/kneading/crushing/grinding etc imports by country | 2024
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: 2024 gross machinery imports provide the purchasing-index input: U.S. HS xx.xx imports were USD xx.xx. These are broad machinery purchases, not ultrafine mill sales.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: 2024 gross machinery imports provide the purchasing-index input: U.S. HS xx.xx imports were USD xx.xx. These are broad machinery purchases, not ultrafine mill sales.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Country observations include Brazil USD xx.xx and Argentina USD xx.xx under HS xx.xx supporting the regional model's purchasing inputs.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country observations include Brazil USD xx.xx and Argentina USD xx.xx under HS xx.xx supporting the regional model's purchasing inputs.
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   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: HS xx.xx imports include Germany USD xx.xx and France USD xx.xx; individual country records, rather than the EU aggregate, enter the allocation.
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   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Turkey USD xx.xx and Saudi Arabia USD xx.xx are broad machinery purchasing inputs, not observed qualifying-market numerators.
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   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: China USD xx.xx, Indonesia USD xx.xx and Japan USD xx.xx anchor the regional purchasing index before explicit local-supply adjustments.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: China USD xx.xx, Indonesia USD xx.xx and Japan USD xx.xx anchor the regional purchasing index before explicit local-supply adjustments.

4. Crushing/grinding machines for earth/ stone/ore imports by country | 2024
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: 2024 mineral crushing/grinding imports supply the secondary purchasing-index input; they contain out-of-scope ordinary crushers and are not treated as qualifying market revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: 2024 mineral crushing/grinding imports supply the secondary purchasing-index input; they contain out-of-scope ordinary crushers and are not treated as qualifying market revenue.
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   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country-level mineral machinery import observations support the Latin American purchasing basket and its explicitly modeled mining/package adjustments.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: European national import observations provide the mineral-machinery component of the common purchasing index; the regional aggregate is not an extra country.
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5. Mach for mixing/kneading/crushing/grinding etc imports by country | 2021
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports were USD xx.xx. The model applies a qualified timing/access bridge and does not describe this as current trade.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports were USD xx.xx. The model applies a qualified timing/access bridge and does not describe this as current trade.
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   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports of USD xx.xx provide the second historical purchasing primitive; the 2025 and 2032 allocations remain modeled.

7. World Manufacturing Production and Trade, Quarter IV 2025
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The report's mixed North American manufacturing conditions constrain a uniform high-growth assumption; output is not equated with mill purchasing.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Recent Latin American manufacturing weakness is counterevidence to immediate region-wide acceleration; forecast equipment factors remain conditional.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: European manufacturing stagnation and national divergence constrain the assumed relative equipment-purchasing path.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country-level manufacturing heterogeneity constrains the forecast; no single regional output rate is converted into machinery demand.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: African output observations include national counterexamples, supporting differentiated rather than uniform purchasing assumptions.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: China and other Asian manufacturing expansion, with national exceptions, provides directional context rather than an observed ultrafine-equipment growth rate.
8. Business Unit Grinding & Dispersing - NETZSCH
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The supplier documents local grinding-equipment production and commercial operations in Germany, the United States, Brazil, Russia, India and China. This supports considering domestic supply omitted by import statistics, but does not measure the model's correction factors.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The supplier documents local grinding-equipment production and commercial operations in Germany, the United States, Brazil, Russia, India and China. This supports considering domestic supply omitted by import statistics, but does not measure the model's correction factors.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Documented local commercial supply in China and India qualifies an import-only purchasing model; manufacturing location is not itself counted as buyer demand.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Documented local commercial supply in China and India qualifies an import-only purchasing model; manufacturing location is not itself counted as buyer demand.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Documented U.S. production and local commercial operations support an explicit, uncertain domestic-supply bridge rather than treating imports as the entire numerator.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Documented U.S. production and local commercial operations support an explicit, uncertain domestic-supply bridge rather than treating imports as the entire numerator.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Brazilian local production and commercial operations qualify reliance on imports alone, without establishing the assumed domestic sales amount.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Brazilian local production and commercial operations qualify reliance on imports alone, without establishing the assumed domestic sales amount.
9. High Energy Planetary Ball Mill - IIT Bombay
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The 2024 solicitation concerns one mill and requires two registration stages. It supports a purchaser-specific access constraint, not an award, national procurement conversion rate or forecast revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The 2024 solicitation concerns one mill and requires two registration stages. It supports a purchaser-specific access constraint, not an award, national procurement conversion rate or forecast revenue.

10. Metso receives order for grinding mills to a copper project in Africa
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The EUR xx.xx August 2024 HIGmill equipment/auxiliary/services order establishes a commercial package in Africa but identifies neither country nor annual revenue recognition. It constrains attribution and is not added to 2025 demand.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The EUR xx.xx August 2024 HIGmill equipment/auxiliary/services order establishes a commercial package in Africa but identifies neither country nor annual revenue recognition. It constrains attribution and is not added to 2025 demand.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The August xx.xx 2024 announcement records an approximately EUR xx.xx HIGmill order including auxiliaries and services. It anchors package-level commercial materiality, not a mill unit price or 2025 recognized revenue. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The August xx.xx 2024 announcement records an approximately EUR xx.xx HIGmill order including auxiliaries and services. It anchors package-level commercial materiality, not a mill unit price or 2025 recognized revenue. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The stirred-package order supports the Media Mills value-weight model and continuing commercial-demand premise, with order-to-revenue timing unresolved. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The stirred-package order supports the Media Mills value-weight model and continuing commercial-demand premise, with order-to-revenue timing unresolved. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
11. Methodology - UNIDO Industrial Analytics Platform
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The methodology notes that U.S. trade coverage includes Puerto Rico, reinforcing that the national purchasing proxy must not be renormalized to the xx.xx-state inventory.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The methodology notes that U.S. trade coverage includes Puerto Rico, reinforcing that the national purchasing proxy must not be renormalized to the xx.xx-state inventory.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The methodology identifies Monaco within French trade coverage; the customs input is an imperfect national demand proxy rather than a directly observed country numerator.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The methodology identifies Monaco within French trade coverage; the customs input is an imperfect national demand proxy rather than a directly observed country numerator.
12. Planetary Ball Mill PM 100 - RETSCH
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: PM xx.xx is a marketed benchtop planetary platform, supporting laboratory-category mapping rather than shipment or price weights. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: PM xx.xx is a marketed benchtop planetary platform, supporting laboratory-category mapping rather than shipment or price weights. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))

13. Record year for Metso stirred mills as mining industry opts for energy-efficient comminution technology
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Metso reports more than twenty Vertimill sales in 2025 and approximately xx.xx cumulative stirred-mill deliveries. Broader application coverage prevents treating these as ultrafine-only annual shipments; they constrain the modeled stirred/mining allocation and forecast premise. ([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Metso reports more than twenty Vertimill sales in 2025 and approximately xx.xx cumulative stirred-mill deliveries. Broader application coverage prevents treating these as ultrafine-only annual shipments; they constrain the modeled stirred/mining allocation and forecast premise. ([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The disclosed stirred-equipment activity supports material Media Mills participation, not the final modeled parent share. ([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The disclosed stirred-equipment activity supports material Media Mills participation, not the final modeled parent share. ([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))
14. Bühler strengthens its market position
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Bühler reports xx.xx% Grinding & Dispersing order growth in 2025 against a xx.xx% decline in broader Advanced Materials orders. This is a mixed commercial leading indicator, not observed market-share growth. ([buhlergroup.com](https://www.buhlergroup.com/global/en/media/media-releases/b%C3%BChler-strengthens-its-marketposition.html))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Bühler reports xx.xx% Grinding & Dispersing order growth in 2025 against a xx.xx% decline in broader Advanced Materials orders. This is a mixed commercial leading indicator, not observed market-share growth. ([buhlergroup.com](https://www.buhlergroup.com/global/en/media/media-releases/b%C3%BChler-strengthens-its-marketposition.html))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The disclosed battery-related and other application orders constrain differentiated Media Mills forecast assumptions without converting orders directly to annual equipment revenue. ([buhlergroup.com](https://www.buhlergroup.com/global/en/media/media-releases/b%C3%BChler-strengthens-its-marketposition.html))
15. Management Greetings | HOSOKAWAMICRON CORPORATION
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The same broader financial contraction is counterevidence to assuming uniform Media Mills growth across suppliers; no corporate revenue is assigned directly to the category. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/ir/management_policy/management_greetings.html))
16. Grinding Equipment Manufacturer Supplier Factory, Grinding System | Longly
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: LONGLY discloses current annual capacity above 2,000 equipment units and commercial wet-grinding offerings. Capacity is bridged through explicitly assumed timing, utilization and eligible-product factors; it is not reported 2025 stirred-mill shipments. ([longlymill.com](https://www.longlymill.com/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: LONGLY discloses current annual capacity above 2,000 equipment units and commercial wet-grinding offerings. Capacity is bridged through explicitly assumed timing, utilization and eligible-product factors; it is not reported 2025 stirred-mill shipments. ([longlymill.com](https://www.longlymill.com/))

17. Ultra-Fine Grinding - Hosokawa Micron Malaysia
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Super Orion is a marketed rotary ball-mill constituent of the combined rotary/planetary category. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Super Orion is a marketed rotary ball-mill constituent of the combined rotary/planetary category. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))
18. SWECO Vibratory Grinding and Particle Size Reduction Equipment
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: SWECO markets Vibro-Energy grinding equipment with separate wet and wet/dry offerings. This supports commercial category and configuration mapping, not the modeled frequency of purchases. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: SWECO markets Vibro-Energy grinding equipment with separate wet and wet/dry offerings. This supports commercial category and configuration mapping, not the modeled frequency of purchases. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))

8.1.1. Stirred Media Mills

Table 18. Global Ultra Fine Grinding Mill Market Size, by Stirred Media Mills, by Region, 2017-2040 (USD Million)

Region	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Africa	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Asia-Pacific	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Europe	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Latin America	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Middle East	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
North America	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 19. Global Ultra Fine Grinding Mill Market Size, by Stirred Media Mills, by Group, 2017-2040 (USD Million)

Group	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
ASEAN	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
BRICS	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
European Union	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
G7	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
GCC	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
NATO	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx

Table 20. Global Ultra Fine Grinding Mill Market Size, by Stirred Media Mills, by Country, 2017-2040 (USD Million)

Country	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Australia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Brazil	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Canada	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
China	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
France	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Germany	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
India	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Italy	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Japan	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mexico	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Russia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
South Korea	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Spain	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United Kingdom	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United States	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Others	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Sources & Evidence

1. Comminution - NTNU
   · Taxonomy evidence: The institution identifies stirred mills among its ultrafine-capable platforms and separately inventories a stirred attritor, independently corroborating the retained stirred-media constituent. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
2. Comminution Testing | Core Resources
   · Taxonomy evidence: The company's own inventory and service disclosure identify operation of stirred-media equipment for ultrafine grinding, corroborating an operating-user context rather than relying solely on a machinery supplier portfolio. ([coreresources.com.au](https://coreresources.com.au/services/metallurgical-services/laboratory-testing/comminution-testing/))
3. Process Plant and Equipment - Product directory
   · Taxonomy evidence: Stirrer mills are separately listed, supporting distinct commercial platform nomenclature.
4. Stirred media mills in the mining industry: Material grindability, energy-size relationships, and operating conditions
   · Taxonomy evidence: The review identifies commercially established gravity-induced and fluidized stirred-mill platforms, including horizontal and vertical examples, within ultrafine grinding.

5. Mach for mixing/kneading/crushing/grinding etc imports by country | 2024
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: 2024 gross machinery imports provide the purchasing-index input: U.S. HS xx.xx imports were USD xx.xx. These are broad machinery purchases, not ultrafine mill sales.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: 2024 gross machinery imports provide the purchasing-index input: U.S. HS xx.xx imports were USD xx.xx. These are broad machinery purchases, not ultrafine mill sales.
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   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country observations include Brazil USD xx.xx and Argentina USD xx.xx under HS xx.xx supporting the regional model's purchasing inputs.
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   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: 2024 mineral crushing/grinding imports supply the secondary purchasing-index input; they contain out-of-scope ordinary crushers and are not treated as qualifying market revenue.
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   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country-level mineral machinery import observations support the Latin American purchasing basket and its explicitly modeled mining/package adjustments.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: European national import observations provide the mineral-machinery component of the common purchasing index; the regional aggregate is not an extra country.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: European national import observations provide the mineral-machinery component of the common purchasing index; the regional aggregate is not an extra country.
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   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Saudi Arabia and Turkey have separately reported mineral machinery imports, supporting national rather than bloc-wide purchasing inputs.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: African reporter observations include major destinations outside the mandatory-country inventory, constraining a substantial noncatalog demand pool.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: African reporter observations include major destinations outside the mandatory-country inventory, constraining a substantial noncatalog demand pool.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Asia-Pacific and Central Asian reporter observations anchor the mineral-machinery component and unlisted-destination basket.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Asia-Pacific and Central Asian reporter observations anchor the mineral-machinery component and unlisted-destination basket.
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   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports were USD xx.xx. The model applies a qualified timing/access bridge and does not describe this as current trade.
8. Crushing/grinding machines for earth/ stone/ore imports by country | 2021
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports of USD xx.xx provide the second historical purchasing primitive; the 2025 and 2032 allocations remain modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports of USD xx.xx provide the second historical purchasing primitive; the 2025 and 2032 allocations remain modeled.

9. World Manufacturing Production and Trade, Quarter IV 2025
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The report's mixed North American manufacturing conditions constrain a uniform high-growth assumption; output is not equated with mill purchasing.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Recent Latin American manufacturing weakness is counterevidence to immediate region-wide acceleration; forecast equipment factors remain conditional.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: European manufacturing stagnation and national divergence constrain the assumed relative equipment-purchasing path.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country-level manufacturing heterogeneity constrains the forecast; no single regional output rate is converted into machinery demand.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: African output observations include national counterexamples, supporting differentiated rather than uniform purchasing assumptions.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: China and other Asian manufacturing expansion, with national exceptions, provides directional context rather than an observed ultrafine-equipment growth rate.
10. Business Unit Grinding & Dispersing - NETZSCH
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The supplier documents local grinding-equipment production and commercial operations in Germany, the United States, Brazil, Russia, India and China. This supports considering domestic supply omitted by import statistics, but does not measure the model's correction factors.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The supplier documents local grinding-equipment production and commercial operations in Germany, the United States, Brazil, Russia, India and China. This supports considering domestic supply omitted by import statistics, but does not measure the model's correction factors.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Documented local commercial supply in China and India qualifies an import-only purchasing model; manufacturing location is not itself counted as buyer demand.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Documented local commercial supply in China and India qualifies an import-only purchasing model; manufacturing location is not itself counted as buyer demand.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Documented U.S. production and local commercial operations support an explicit, uncertain domestic-supply bridge rather than treating imports as the entire numerator.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Documented U.S. production and local commercial operations support an explicit, uncertain domestic-supply bridge rather than treating imports as the entire numerator.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Brazilian local production and commercial operations qualify reliance on imports alone, without establishing the assumed domestic sales amount.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Brazilian local production and commercial operations qualify reliance on imports alone, without establishing the assumed domestic sales amount.
11. High Energy Planetary Ball Mill - IIT Bombay
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The 2024 solicitation concerns one mill and requires two registration stages. It supports a purchaser-specific access constraint, not an award, national procurement conversion rate or forecast revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The 2024 solicitation concerns one mill and requires two registration stages. It supports a purchaser-specific access constraint, not an award, national procurement conversion rate or forecast revenue.

12. Metso receives order for grinding mills to a copper project in Africa
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The EUR xx.xx August 2024 HIGmill equipment/auxiliary/services order establishes a commercial package in Africa but identifies neither country nor annual revenue recognition. It constrains attribution and is not added to 2025 demand.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The EUR xx.xx August 2024 HIGmill equipment/auxiliary/services order establishes a commercial package in Africa but identifies neither country nor annual revenue recognition. It constrains attribution and is not added to 2025 demand.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The August xx.xx 2024 announcement records an approximately EUR xx.xx HIGmill order including auxiliaries and services. It anchors package-level commercial materiality, not a mill unit price or 2025 recognized revenue. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The August xx.xx 2024 announcement records an approximately EUR xx.xx HIGmill order including auxiliaries and services. It anchors package-level commercial materiality, not a mill unit price or 2025 recognized revenue. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
13. Methodology - UNIDO Industrial Analytics Platform
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The methodology notes that U.S. trade coverage includes Puerto Rico, reinforcing that the national purchasing proxy must not be renormalized to the xx.xx-state inventory.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The methodology notes that U.S. trade coverage includes Puerto Rico, reinforcing that the national purchasing proxy must not be renormalized to the xx.xx-state inventory.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The methodology identifies Monaco within French trade coverage; the customs input is an imperfect national demand proxy rather than a directly observed country numerator.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The methodology identifies Monaco within French trade coverage; the customs input is an imperfect national demand proxy rather than a directly observed country numerator.
14. Record year for Metso stirred mills as mining industry opts for energy-efficient comminution technology
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Metso reports more than twenty Vertimill sales in 2025 and approximately xx.xx cumulative stirred-mill deliveries. Broader application coverage prevents treating these as ultrafine-only annual shipments; they constrain the modeled stirred/mining allocation and forecast premise. ([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Metso reports more than twenty Vertimill sales in 2025 and approximately xx.xx cumulative stirred-mill deliveries. Broader application coverage prevents treating these as ultrafine-only annual shipments; they constrain the modeled stirred/mining allocation and forecast premise. ([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))

15. Bühler strengthens its market position

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Bühler reports xx.xx% Grinding & Dispersing order growth in 2025 against a xx.xx% decline in broader Advanced Materials orders. This is a mixed commercial leading indicator, not observed market-share growth. ([buhlergroup.com](https://www.buhlergroup.com/global/en/media/media-releases/b%C3%BChler-strengthens-its-marketposition.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Bühler reports xx.xx% Grinding & Dispersing order growth in 2025 against a xx.xx% decline in broader Advanced Materials orders. This is a mixed commercial leading indicator, not observed market-share growth. ([buhlergroup.com](https://www.buhlergroup.com/global/en/media/media-releases/b%C3%BChler-strengthens-its-marketposition.html))

16. Grinding Equipment Manufacturer Supplier Factory, Grinding System | Longly

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: LONGLY discloses current annual capacity above 2,000 equipment units and commercial wet-grinding offerings. Capacity is bridged through explicitly assumed timing, utilization and eligible-product factors; it is not reported 2025 stirred-mill shipments. ([longlymill.com](https://www.longlymill.com/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: LONGLY discloses current annual capacity above 2,000 equipment units and commercial wet-grinding offerings. Capacity is bridged through explicitly assumed timing, utilization and eligible-product factors; it is not reported 2025 stirred-mill shipments. ([longlymill.com](https://www.longlymill.com/))

8.1.2. Rotary and Planetary Ball Mills

Table 21. Global Ultra Fine Grinding Mill Market Size, by Rotary and Planetary Ball Mills, by Region, 2017-2040 (USD Million)

Region	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Africa	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Asia-Pacific	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Europe	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Latin America	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Middle East	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
North America	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 22. Global Ultra Fine Grinding Mill Market Size, by Rotary and Planetary Ball Mills, by Group, 2017-2040 (USD Million)

Group	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
ASEAN	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
BRICS	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
European Union	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
G7	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
GCC	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
NATO	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx

Table 23. Global Ultra Fine Grinding Mill Market Size, by Rotary and Planetary Ball Mills, by Country, 2017-2040 (USD Million)

Country	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Australia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Brazil	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Canada	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
China	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
France	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Germany	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
India	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Italy	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Japan	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mexico	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Russia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
South Korea	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Spain	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United Kingdom	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United States	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Others	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Sources & Evidence

1. Comminution - NTNU
   · Taxonomy evidence: Planetary milling is explicitly identified as an ultrafine-capable laboratory platform. This supports that constituent, not standardization of the combined rotary/planetary category. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
2. Process Plant and Equipment - Product directory
   · Taxonomy evidence: Ball and drum mills are listed; these support constituent terminology, not the full combined rotary/planetary grouping.
3. Regulatory and Inspection Manual for Nonmetallic Mineral Processing Plants, Revised
   · Taxonomy evidence: The manual identifies rotating-drum ball and pebble mills, supporting the tumbling constituent of the proposed combined family, not planetary or orbital variants.
4. Fine grinding of wood - Overview from wood breakage to applications
   · Taxonomy evidence: Planetary and tumbling ball milling are identified separately, supporting constituent families rather than a standardized combined label.
5. Particle size distribution control during wheat milling: nutritional quality and functional basis of flour products-a comprehensive review
   · Taxonomy evidence: The review's milling-equipment table identifies ball milling for ultra-fine flour refinement, while separately describing ordinary roller milling. This supports an ultrafine application context for ball mills, not the proposed grouping's complete platform definition or equipment sales. ([academic.oup.com](https://academic.oup.com/ijfst/article/xx.xx/xx.xx/xx.xx/xx.xx))

6. Mach for mixing/kneading/crushing/grinding etc imports by country | 2024
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: 2024 gross machinery imports provide the purchasing-index input: U.S. HS xx.xx imports were USD xx.xx. These are broad machinery purchases, not ultrafine mill sales.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: 2024 gross machinery imports provide the purchasing-index input: U.S. HS xx.xx imports were USD xx.xx. These are broad machinery purchases, not ultrafine mill sales.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Country observations include Brazil USD xx.xx and Argentina USD xx.xx under HS xx.xx supporting the regional model's purchasing inputs.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country observations include Brazil USD xx.xx and Argentina USD xx.xx under HS xx.xx supporting the regional model's purchasing inputs.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: HS xx.xx imports include Germany USD xx.xx and France USD xx.xx; individual country records, rather than the EU aggregate, enter the allocation.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: HS xx.xx imports include Germany USD xx.xx and France USD xx.xx; individual country records, rather than the EU aggregate, enter the allocation.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Turkey USD xx.xx and Saudi Arabia USD xx.xx are broad machinery purchasing inputs, not observed qualifying-market numerators.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Turkey USD xx.xx and Saudi Arabia USD xx.xx are broad machinery purchasing inputs, not observed qualifying-market numerators.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: South Africa USD xx.xx and Egypt USD xx.xx, together with additional African reporters, anchor the purchasing baskets.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: South Africa USD xx.xx and Egypt USD xx.xx, together with additional African reporters, anchor the purchasing baskets.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: China USD xx.xx, Indonesia USD xx.xx and Japan USD xx.xx anchor the regional purchasing index before explicit local-supply adjustments.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: China USD xx.xx, Indonesia USD xx.xx and Japan USD xx.xx anchor the regional purchasing index before explicit local-supply adjustments.

7. Crushing/grinding machines for earth/ stone/ore imports by country | 2024
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: 2024 mineral crushing/grinding imports supply the secondary purchasing-index input; they contain out-of-scope ordinary crushers and are not treated as qualifying market revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: 2024 mineral crushing/grinding imports supply the secondary purchasing-index input; they contain out-of-scope ordinary crushers and are not treated as qualifying market revenue.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Country-level mineral machinery import observations support the Latin American purchasing basket and its explicitly modeled mining/package adjustments.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country-level mineral machinery import observations support the Latin American purchasing basket and its explicitly modeled mining/package adjustments.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: European national import observations provide the mineral-machinery component of the common purchasing index; the regional aggregate is not an extra country.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: European national import observations provide the mineral-machinery component of the common purchasing index; the regional aggregate is not an extra country.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Saudi Arabia and Turkey have separately reported mineral machinery imports, supporting national rather than bloc-wide purchasing inputs.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Saudi Arabia and Turkey have separately reported mineral machinery imports, supporting national rather than bloc-wide purchasing inputs.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: African reporter observations include major destinations outside the mandatory-country inventory, constraining a substantial noncatalog demand pool.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: African reporter observations include major destinations outside the mandatory-country inventory, constraining a substantial noncatalog demand pool.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Asia-Pacific and Central Asian reporter observations anchor the mineral-machinery component and unlisted-destination basket.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Asia-Pacific and Central Asian reporter observations anchor the mineral-machinery component and unlisted-destination basket.
8. Mach for mixing/kneading/crushing/grinding etc imports by country | 2021
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports were USD xx.xx. The model applies a qualified timing/access bridge and does not describe this as current trade.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports were USD xx.xx. The model applies a qualified timing/access bridge and does not describe this as current trade.
9. Crushing/grinding machines for earth/ stone/ore imports by country | 2021
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports of USD xx.xx provide the second historical purchasing primitive; the 2025 and 2032 allocations remain modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports of USD xx.xx provide the second historical purchasing primitive; the 2025 and 2032 allocations remain modeled.

10. World Manufacturing Production and Trade, Quarter IV 2025
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The report's mixed North American manufacturing conditions constrain a uniform high-growth assumption; output is not equated with mill purchasing.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Recent Latin American manufacturing weakness is counterevidence to immediate region-wide acceleration; forecast equipment factors remain conditional.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: European manufacturing stagnation and national divergence constrain the assumed relative equipment-purchasing path.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country-level manufacturing heterogeneity constrains the forecast; no single regional output rate is converted into machinery demand.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: African output observations include national counterexamples, supporting differentiated rather than uniform purchasing assumptions.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: China and other Asian manufacturing expansion, with national exceptions, provides directional context rather than an observed ultrafine-equipment growth rate.
11. Business Unit Grinding & Dispersing - NETZSCH
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The supplier documents local grinding-equipment production and commercial operations in Germany, the United States, Brazil, Russia, India and China. This supports considering domestic supply omitted by import statistics, but does not measure the model's correction factors.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The supplier documents local grinding-equipment production and commercial operations in Germany, the United States, Brazil, Russia, India and China. This supports considering domestic supply omitted by import statistics, but does not measure the model's correction factors.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Documented local commercial supply in China and India qualifies an import-only purchasing model; manufacturing location is not itself counted as buyer demand.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Documented local commercial supply in China and India qualifies an import-only purchasing model; manufacturing location is not itself counted as buyer demand.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Documented U.S. production and local commercial operations support an explicit, uncertain domestic-supply bridge rather than treating imports as the entire numerator.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Documented U.S. production and local commercial operations support an explicit, uncertain domestic-supply bridge rather than treating imports as the entire numerator.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Brazilian local production and commercial operations qualify reliance on imports alone, without establishing the assumed domestic sales amount.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Brazilian local production and commercial operations qualify reliance on imports alone, without establishing the assumed domestic sales amount.
12. High Energy Planetary Ball Mill - IIT Bombay
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The 2024 solicitation concerns one mill and requires two registration stages. It supports a purchaser-specific access constraint, not an award, national procurement conversion rate or forecast revenue.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The 2024 solicitation concerns one mill and requires two registration stages. It supports a purchaser-specific access constraint, not an award, national procurement conversion rate or forecast revenue.

13. Metso receives order for grinding mills to a copper project in Africa
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The EUR xx.xx August 2024 HIGmill equipment/auxiliary/services order establishes a commercial package in Africa but identifies neither country nor annual revenue recognition. It constrains attribution and is not added to 2025 demand.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The EUR xx.xx August 2024 HIGmill equipment/auxiliary/services order establishes a commercial package in Africa but identifies neither country nor annual revenue recognition. It constrains attribution and is not added to 2025 demand.
14. Methodology - UNIDO Industrial Analytics Platform
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The methodology notes that U.S. trade coverage includes Puerto Rico, reinforcing that the national purchasing proxy must not be renormalized to the xx.xx-state inventory.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The methodology notes that U.S. trade coverage includes Puerto Rico, reinforcing that the national purchasing proxy must not be renormalized to the xx.xx-state inventory.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The methodology identifies Monaco within French trade coverage; the customs input is an imperfect national demand proxy rather than a directly observed country numerator.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The methodology identifies Monaco within French trade coverage; the customs input is an imperfect national demand proxy rather than a directly observed country numerator.
15. Planetary Ball Mill PM 100 - RETSCH
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: PM xx.xx is a marketed benchtop planetary platform, supporting laboratory-category mapping rather than shipment or price weights. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: PM xx.xx is a marketed benchtop planetary platform, supporting laboratory-category mapping rather than shipment or price weights. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))
16. Ultra-Fine Grinding - Hosokawa Micron Malaysia
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Super Orion is a marketed rotary ball-mill constituent of the combined rotary/planetary category. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Super Orion is a marketed rotary ball-mill constituent of the combined rotary/planetary category. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

8.1.3. Vibratory Media Mills

Table 24. Global Ultra Fine Grinding Mill Market Size, by Vibratory Media Mills, by Region, 2017-2040 (USD Million)

Region	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Africa	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Asia-Pacific	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Europe	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Latin America	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Middle East	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
North America	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 25. Global Ultra Fine Grinding Mill Market Size, by Vibratory Media Mills, by Group, 2017-2040 (USD Million)

Group	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
ASEAN	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
BRICS	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
European Union	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
G7	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
GCC	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
NATO	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx

Table 26. Global Ultra Fine Grinding Mill Market Size, by Vibratory Media Mills, by Country, 2017-2040 (USD Million)

Country	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Australia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Brazil	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Canada	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
China	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
France	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Germany	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
India	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Italy	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Japan	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mexico	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Russia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
South Korea	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Spain	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United Kingdom	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United States	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Others	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Sources & Evidence

1. Process Plant and Equipment - Product directory
   · Taxonomy evidence: Tube vibrating and oscillating mills are separately recognized equipment categories.
2. Fine grinding of wood - Overview from wood breakage to applications
   · Taxonomy evidence: Vibration milling is identified separately from planetary and tumbling ball milling.
3. Investigation of Ultra-Fine Grinding of Basalt Powder in Vibratory Mills: Grinding Efficiency and Implementation Potential
   · Taxonomy evidence: The 2025 peer-reviewed study explicitly addresses ultrafine basalt grinding using vibratory mills, establishing a distinct ultrafine-grinding application context. It does not establish equipment sales, commercial commissioning, or a market share.
   ([reference-global.com](https://reference-global.com/article/xx.xx/mspe-2025-xx.xx))

4. Mach for mixing/kneading/crushing/grinding etc imports by country | 2024
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: 2024 gross machinery imports provide the purchasing-index input: U.S. HS xx.xx imports were USD xx.xx. These are broad machinery purchases, not ultrafine mill sales.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: 2024 gross machinery imports provide the purchasing-index input: U.S. HS xx.xx imports were USD xx.xx. These are broad machinery purchases, not ultrafine mill sales.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Country observations include Brazil USD xx.xx and Argentina USD xx.xx under HS xx.xx supporting the regional model's purchasing inputs.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country observations include Brazil USD xx.xx and Argentina USD xx.xx under HS xx.xx supporting the regional model's purchasing inputs.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: HS xx.xx imports include Germany USD xx.xx and France USD xx.xx; individual country records, rather than the EU aggregate, enter the allocation.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: HS xx.xx imports include Germany USD xx.xx and France USD xx.xx; individual country records, rather than the EU aggregate, enter the allocation.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Turkey USD xx.xx and Saudi Arabia USD xx.xx are broad machinery purchasing inputs, not observed qualifying-market numerators.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Turkey USD xx.xx and Saudi Arabia USD xx.xx are broad machinery purchasing inputs, not observed qualifying-market numerators.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: South Africa USD xx.xx and Egypt USD xx.xx, together with additional African reporters, anchor the purchasing baskets.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: South Africa USD xx.xx and Egypt USD xx.xx, together with additional African reporters, anchor the purchasing baskets.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: China USD xx.xx, Indonesia USD xx.xx and Japan USD xx.xx anchor the regional purchasing index before explicit local-supply adjustments.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: China USD xx.xx, Indonesia USD xx.xx and Japan USD xx.xx anchor the regional purchasing index before explicit local-supply adjustments.

5. Crushing/grinding machines for earth/ stone/ore imports by country | 2024
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: 2024 mineral crushing/grinding imports supply the secondary purchasing-index input; they contain out-of-scope ordinary crushers and are not treated as qualifying market revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: 2024 mineral crushing/grinding imports supply the secondary purchasing-index input; they contain out-of-scope ordinary crushers and are not treated as qualifying market revenue.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Country-level mineral machinery import observations support the Latin American purchasing basket and its explicitly modeled mining/package adjustments.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country-level mineral machinery import observations support the Latin American purchasing basket and its explicitly modeled mining/package adjustments.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: European national import observations provide the mineral-machinery component of the common purchasing index; the regional aggregate is not an extra country.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: European national import observations provide the mineral-machinery component of the common purchasing index; the regional aggregate is not an extra country.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Saudi Arabia and Turkey have separately reported mineral machinery imports, supporting national rather than bloc-wide purchasing inputs.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Saudi Arabia and Turkey have separately reported mineral machinery imports, supporting national rather than bloc-wide purchasing inputs.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: African reporter observations include major destinations outside the mandatory-country inventory, constraining a substantial noncatalog demand pool.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: African reporter observations include major destinations outside the mandatory-country inventory, constraining a substantial noncatalog demand pool.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Asia-Pacific and Central Asian reporter observations anchor the mineral-machinery component and unlisted-destination basket.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Asia-Pacific and Central Asian reporter observations anchor the mineral-machinery component and unlisted-destination basket.
6. Mach for mixing/kneading/crushing/grinding etc imports by country | 2021
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports were USD xx.xx. The model applies a qualified timing/access bridge and does not describe this as current trade.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports were USD xx.xx. The model applies a qualified timing/access bridge and does not describe this as current trade.
7. Crushing/grinding machines for earth/ stone/ore imports by country | 2021
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports of USD xx.xx provide the second historical purchasing primitive; the 2025 and 2032 allocations remain modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports of USD xx.xx provide the second historical purchasing primitive; the 2025 and 2032 allocations remain modeled.

8. World Manufacturing Production and Trade, Quarter IV 2025
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The report's mixed North American manufacturing conditions constrain a uniform high-growth assumption; output is not equated with mill purchasing.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Recent Latin American manufacturing weakness is counterevidence to immediate region-wide acceleration; forecast equipment factors remain conditional.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: European manufacturing stagnation and national divergence constrain the assumed relative equipment-purchasing path.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country-level manufacturing heterogeneity constrains the forecast; no single regional output rate is converted into machinery demand.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: African output observations include national counterexamples, supporting differentiated rather than uniform purchasing assumptions.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: China and other Asian manufacturing expansion, with national exceptions, provides directional context rather than an observed ultrafine-equipment growth rate.
9. Business Unit Grinding & Dispersing - NETZSCH
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The supplier documents local grinding-equipment production and commercial operations in Germany, the United States, Brazil, Russia, India and China. This supports considering domestic supply omitted by import statistics, but does not measure the model's correction factors.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The supplier documents local grinding-equipment production and commercial operations in Germany, the United States, Brazil, Russia, India and China. This supports considering domestic supply omitted by import statistics, but does not measure the model's correction factors.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Documented local commercial supply in China and India qualifies an import-only purchasing model; manufacturing location is not itself counted as buyer demand.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Documented local commercial supply in China and India qualifies an import-only purchasing model; manufacturing location is not itself counted as buyer demand.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Documented U.S. production and local commercial operations support an explicit, uncertain domestic-supply bridge rather than treating imports as the entire numerator.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Documented U.S. production and local commercial operations support an explicit, uncertain domestic-supply bridge rather than treating imports as the entire numerator.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Brazilian local production and commercial operations qualify reliance on imports alone, without establishing the assumed domestic sales amount.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Brazilian local production and commercial operations qualify reliance on imports alone, without establishing the assumed domestic sales amount.
10. High Energy Planetary Ball Mill - IIT Bombay
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The 2024 solicitation concerns one mill and requires two registration stages. It supports a purchaser-specific access constraint, not an award, national procurement conversion rate or forecast revenue.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The 2024 solicitation concerns one mill and requires two registration stages. It supports a purchaser-specific access constraint, not an award, national procurement conversion rate or forecast revenue.

11. Metso receives order for grinding mills to a copper project in Africa
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The EUR xx.xx August 2024 HIGmill equipment/auxiliary/services order establishes a commercial package in Africa but identifies neither country nor annual revenue recognition. It constrains attribution and is not added to 2025 demand.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The EUR xx.xx August 2024 HIGmill equipment/auxiliary/services order establishes a commercial package in Africa but identifies neither country nor annual revenue recognition. It constrains attribution and is not added to 2025 demand.
12. Methodology - UNIDO Industrial Analytics Platform
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The methodology notes that U.S. trade coverage includes Puerto Rico, reinforcing that the national purchasing proxy must not be renormalized to the xx.xx-state inventory.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The methodology notes that U.S. trade coverage includes Puerto Rico, reinforcing that the national purchasing proxy must not be renormalized to the xx.xx-state inventory.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The methodology identifies Monaco within French trade coverage; the customs input is an imperfect national demand proxy rather than a directly observed country numerator.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The methodology identifies Monaco within French trade coverage; the customs input is an imperfect national demand proxy rather than a directly observed country numerator.
13. SWECO Vibratory Grinding and Particle Size Reduction Equipment
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: SWECO markets Vibro-Energy grinding equipment with separate wet and wet/dry offerings. This supports commercial category and configuration mapping, not the modeled frequency of purchases. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: SWECO markets Vibro-Energy grinding equipment with separate wet and wet/dry offerings. This supports commercial category and configuration mapping, not the modeled frequency of purchases. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))

8.2. Gas-Jet Mills

Table 27. Global Ultra Fine Grinding Mill Market, by Gas-Jet Mills growth contribution, 2025-2032

Category	2025 value (USD Million)	2032 value (USD Million)	Added value (USD Million)	2025 share (%)	2032 share (%)	Change (pp)	Growth share (%)	CAGR (%)
Loop Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Opposed-Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Spiral Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Target Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Scope total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 28. Global Ultra Fine Grinding Mill Market Size, by Gas-Jet Mills, by Region, 2017-2040 (USD Million)

Region	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Africa	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Asia-Pacific	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Europe	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Latin America	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Middle East	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
North America	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 29. Global Ultra Fine Grinding Mill Market Size, by Gas-Jet Mills, by Group, 2017-2040 (USD Million)

Group	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
ASEAN	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
BRICS	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
European Union	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
G7	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
GCC	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
NATO	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx

Table 30. Global Ultra Fine Grinding Mill Market Size, by Gas-Jet Mills, by Country, 2017-2040 (USD Million)

Country	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Australia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Brazil	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Canada	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
China	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
France	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Germany	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
India	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Italy	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Japan	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mexico	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Russia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
South Korea	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Spain	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United Kingdom	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United States	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Others	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Sources & Evidence

1. Process Plant and Equipment - Product directory
   · Taxonomy evidence: Jet mills appear as a named machinery category; the directory does not distinguish gas-jet subtypes.
2. Regulatory and Inspection Manual for Nonmetallic Mineral Processing Plants, Revised
   · Taxonomy evidence: The manual expressly identifies gas-driven fluid-energy mills as ultrafine grinders, supporting the gas-jet family independently of supplier portfolios.
3. Fine grinding of wood - Overview from wood breakage to applications
   · Taxonomy evidence: The review distinguishes gas-jet milling from rotor-impact and grinding-media milling, and recognizes gas choice separately from jet-platform type.
   ([oulurepo.oulu.fi](https://oulurepo.oulu.fi/bitstream/handle/xx.xx/xx.xx/nbnfi-fe201803266180.pdf%3Bjsessionid%3DC41BCC8185A9D1DD6061389E12A5E827?sequence=xx.xx))

4. Mach for mixing/kneading/crushing/grinding etc imports by country | 2024
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: 2024 gross machinery imports provide the purchasing-index input: U.S. HS xx.xx imports were USD xx.xx. These are broad machinery purchases, not ultrafine mill sales.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: 2024 gross machinery imports provide the purchasing-index input: U.S. HS xx.xx imports were USD xx.xx. These are broad machinery purchases, not ultrafine mill sales.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Country observations include Brazil USD xx.xx and Argentina USD xx.xx under HS xx.xx supporting the regional model's purchasing inputs.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country observations include Brazil USD xx.xx and Argentina USD xx.xx under HS xx.xx supporting the regional model's purchasing inputs.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: HS xx.xx imports include Germany USD xx.xx and France USD xx.xx; individual country records, rather than the EU aggregate, enter the allocation.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: HS xx.xx imports include Germany USD xx.xx and France USD xx.xx; individual country records, rather than the EU aggregate, enter the allocation.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Turkey USD xx.xx and Saudi Arabia USD xx.xx are broad machinery purchasing inputs, not observed qualifying-market numerators.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Turkey USD xx.xx and Saudi Arabia USD xx.xx are broad machinery purchasing inputs, not observed qualifying-market numerators.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: South Africa USD xx.xx and Egypt USD xx.xx, together with additional African reporters, anchor the purchasing baskets.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: South Africa USD xx.xx and Egypt USD xx.xx, together with additional African reporters, anchor the purchasing baskets.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: China USD xx.xx, Indonesia USD xx.xx and Japan USD xx.xx anchor the regional purchasing index before explicit local-supply adjustments.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: China USD xx.xx, Indonesia USD xx.xx and Japan USD xx.xx anchor the regional purchasing index before explicit local-supply adjustments.

5. Crushing/grinding machines for earth/ stone/ore imports by country | 2024
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: 2024 mineral crushing/grinding imports supply the secondary purchasing-index input; they contain out-of-scope ordinary crushers and are not treated as qualifying market revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: 2024 mineral crushing/grinding imports supply the secondary purchasing-index input; they contain out-of-scope ordinary crushers and are not treated as qualifying market revenue.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Country-level mineral machinery import observations support the Latin American purchasing basket and its explicitly modeled mining/package adjustments.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country-level mineral machinery import observations support the Latin American purchasing basket and its explicitly modeled mining/package adjustments.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: European national import observations provide the mineral-machinery component of the common purchasing index; the regional aggregate is not an extra country.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: European national import observations provide the mineral-machinery component of the common purchasing index; the regional aggregate is not an extra country.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Saudi Arabia and Turkey have separately reported mineral machinery imports, supporting national rather than bloc-wide purchasing inputs.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Saudi Arabia and Turkey have separately reported mineral machinery imports, supporting national rather than bloc-wide purchasing inputs.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: African reporter observations include major destinations outside the mandatory-country inventory, constraining a substantial noncatalog demand pool.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: African reporter observations include major destinations outside the mandatory-country inventory, constraining a substantial noncatalog demand pool.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Asia-Pacific and Central Asian reporter observations anchor the mineral-machinery component and unlisted-destination basket.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Asia-Pacific and Central Asian reporter observations anchor the mineral-machinery component and unlisted-destination basket.
6. Mach for mixing/kneading/crushing/grinding etc imports by country | 2021
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports were USD xx.xx. The model applies a qualified timing/access bridge and does not describe this as current trade.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports were USD xx.xx. The model applies a qualified timing/access bridge and does not describe this as current trade.
7. Crushing/grinding machines for earth/ stone/ore imports by country | 2021
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports of USD xx.xx provide the second historical purchasing primitive; the 2025 and 2032 allocations remain modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports of USD xx.xx provide the second historical purchasing primitive; the 2025 and 2032 allocations remain modeled.

8. World Manufacturing Production and Trade, Quarter IV 2025
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The report's mixed North American manufacturing conditions constrain a uniform high-growth assumption; output is not equated with mill purchasing.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Recent Latin American manufacturing weakness is counterevidence to immediate region-wide acceleration; forecast equipment factors remain conditional.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: European manufacturing stagnation and national divergence constrain the assumed relative equipment-purchasing path.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country-level manufacturing heterogeneity constrains the forecast; no single regional output rate is converted into machinery demand.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: African output observations include national counterexamples, supporting differentiated rather than uniform purchasing assumptions.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: China and other Asian manufacturing expansion, with national exceptions, provides directional context rather than an observed ultrafine-equipment growth rate.
9. Business Unit Grinding & Dispersing - NETZSCH
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The supplier documents local grinding-equipment production and commercial operations in Germany, the United States, Brazil, Russia, India and China. This supports considering domestic supply omitted by import statistics, but does not measure the model's correction factors.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The supplier documents local grinding-equipment production and commercial operations in Germany, the United States, Brazil, Russia, India and China. This supports considering domestic supply omitted by import statistics, but does not measure the model's correction factors.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Documented local commercial supply in China and India qualifies an import-only purchasing model; manufacturing location is not itself counted as buyer demand.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Documented local commercial supply in China and India qualifies an import-only purchasing model; manufacturing location is not itself counted as buyer demand.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Documented U.S. production and local commercial operations support an explicit, uncertain domestic-supply bridge rather than treating imports as the entire numerator.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Documented U.S. production and local commercial operations support an explicit, uncertain domestic-supply bridge rather than treating imports as the entire numerator.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Brazilian local production and commercial operations qualify reliance on imports alone, without establishing the assumed domestic sales amount.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Brazilian local production and commercial operations qualify reliance on imports alone, without establishing the assumed domestic sales amount.
10. High Energy Planetary Ball Mill - IIT Bombay
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The 2024 solicitation concerns one mill and requires two registration stages. It supports a purchaser-specific access constraint, not an award, national procurement conversion rate or forecast revenue.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The 2024 solicitation concerns one mill and requires two registration stages. It supports a purchaser-specific access constraint, not an award, national procurement conversion rate or forecast revenue.

11. Metso receives order for grinding mills to a copper project in Africa
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The EUR xx.xx August 2024 HIGmill equipment/auxiliary/services order establishes a commercial package in Africa but identifies neither country nor annual revenue recognition. It constrains attribution and is not added to 2025 demand.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The EUR xx.xx August 2024 HIGmill equipment/auxiliary/services order establishes a commercial package in Africa but identifies neither country nor annual revenue recognition. It constrains attribution and is not added to 2025 demand.
12. Methodology - UNIDO Industrial Analytics Platform
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The methodology notes that U.S. trade coverage includes Puerto Rico, reinforcing that the national purchasing proxy must not be renormalized to the xx.xx-state inventory.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The methodology notes that U.S. trade coverage includes Puerto Rico, reinforcing that the national purchasing proxy must not be renormalized to the xx.xx-state inventory.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The methodology identifies Monaco within French trade coverage; the customs input is an imperfect national demand proxy rather than a directly observed country numerator.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The methodology identifies Monaco within French trade coverage; the customs input is an imperfect national demand proxy rather than a directly observed country numerator.
13. Jet Mill - Contract History CW2408170, CanadaBuys
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The jet-mill award totals CAD xx.xx and is dated May xx.xx 2026. It is a nearby-period laboratory purchasing comparator, not a 2025 recognized sale, and supplies neither a gas-jet subtype nor a definitive channel role. ([canadabuys.canada.ca](https://canadabuys.canada.ca/en/tender-opportunities/contract-history/cw2408170-xx.xx))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The jet-mill award totals CAD xx.xx and is dated May xx.xx 2026. It is a nearby-period laboratory purchasing comparator, not a 2025 recognized sale, and supplies neither a gas-jet subtype nor a definitive channel role. ([canadabuys.canada.ca](https://canadabuys.canada.ca/en/tender-opportunities/contract-history/cw2408170-xx.xx))
14. Management Greetings | HOSOKAWAMICRON CORPORATION
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Hosokawa reports FY2025 net sales of JPY xx.xx, down xx.xx%, and orders down xx.xx%. The diversified-company result challenges uniform purchasing acceleration and constrains, rather than directly measures, technology-mix assumptions. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/ir/management_policy/management_greetings.html))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Hosokawa reports FY2025 net sales of JPY xx.xx, down xx.xx%, and orders down xx.xx%. The diversified-company result challenges uniform purchasing acceleration and constrains, rather than directly measures, technology-mix assumptions. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/ir/management_policy/management_greetings.html))

15. Details of micromeritics | HOSOKAWAMICRON CORPORATION
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Hosokawa identifies its AS spiral offering, supporting subtype mapping rather than a sales weight. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Hosokawa identifies its AS spiral offering, supporting subtype mapping rather than a sales weight. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The AFG/TFG counterjet offerings support the retained Opposed-Jet commercial mapping. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The AFG/TFG counterjet offerings support the retained Opposed-Jet commercial mapping. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))
16. Ultra-Fine Grinding - Hosokawa Micron Malaysia
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: MJT is explicitly listed as a target-type offering, supporting precedence of the named platform over overlapping generic jet terminology. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: MJT is explicitly listed as a target-type offering, supporting precedence of the named platform over overlapping generic jet terminology. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))
17. Loop Jet Mill - Consistency. Compliance. Engineered.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The current named Loop Jet Mill listing establishes an offered commercial platform. It supports forecast category continuity, but does not disclose subtype revenue or prove 2025 sales. ([jetmillmfg.com](https://www.jetmillmfg.com/loop-jet-mill/))

8.2.1. Opposed-Jet Mills

Table 31. Global Ultra Fine Grinding Mill Market Size, by Opposed-Jet Mills, by Region, 2017-2040 (USD Million)

Region	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Africa	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Asia-Pacific	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Europe	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Latin America	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Middle East	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
North America	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 32. Global Ultra Fine Grinding Mill Market Size, by Opposed-Jet Mills, by Group, 2017-2040 (USD Million)

Group	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
ASEAN	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
BRICS	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
European Union	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
G7	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
GCC	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
NATO	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx

Table 33. Global Ultra Fine Grinding Mill Market Size, by Opposed-Jet Mills, by Country, 2017-2040 (USD Million)

Country	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Australia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Brazil	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Canada	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
China	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
France	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Germany	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
India	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Italy	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Japan	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mexico	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Russia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
South Korea	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Spain	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United Kingdom	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United States	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Others	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Sources & Evidence

1. Rare earths (magnetic raw materials) - Hosokawa Micron Powder Systems

· Taxonomy evidence: The same commercial page separately identifies its AFG fluidized-bed jet offering and its MJT target offering. These named product facts supplement independent category nomenclature but do not establish the global sibling partition or category sales.
([hmicronpowder.com](https://www.hmicronpowder.com/industry/mineral/rare-earths-magnetic-raw-materials/))

2. Details of micromeritics | HOSOKAWAMICRON CORPORATION

· Taxonomy evidence: The company identifies its AFG/TFG counterjet families and expressly states that AFG-CR and AFG-CRS have been marketed. These are attributed own-product facts, not verification of every counterjet alias or a market share.
([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The AFG/TFG counterjet offerings support the retained Opposed-Jet commercial mapping.
([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The AFG/TFG counterjet offerings support the retained Opposed-Jet commercial mapping.
([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

3. Fine grinding of wood - Overview from wood breakage to applications

· Taxonomy evidence: Opposed jet mills are explicitly identified and discussed for fine-powder production.

4. Mach for mixing/kneading/crushing/grinding etc imports by country | 2024
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: 2024 gross machinery imports provide the purchasing-index input: U.S. HS xx.xx imports were USD xx.xx. These are broad machinery purchases, not ultrafine mill sales.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: 2024 gross machinery imports provide the purchasing-index input: U.S. HS xx.xx imports were USD xx.xx. These are broad machinery purchases, not ultrafine mill sales.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Country observations include Brazil USD xx.xx and Argentina USD xx.xx under HS xx.xx supporting the regional model's purchasing inputs.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country observations include Brazil USD xx.xx and Argentina USD xx.xx under HS xx.xx supporting the regional model's purchasing inputs.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: HS xx.xx imports include Germany USD xx.xx and France USD xx.xx; individual country records, rather than the EU aggregate, enter the allocation.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: HS xx.xx imports include Germany USD xx.xx and France USD xx.xx; individual country records, rather than the EU aggregate, enter the allocation.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Turkey USD xx.xx and Saudi Arabia USD xx.xx are broad machinery purchasing inputs, not observed qualifying-market numerators.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Turkey USD xx.xx and Saudi Arabia USD xx.xx are broad machinery purchasing inputs, not observed qualifying-market numerators.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: South Africa USD xx.xx and Egypt USD xx.xx, together with additional African reporters, anchor the purchasing baskets.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: South Africa USD xx.xx and Egypt USD xx.xx, together with additional African reporters, anchor the purchasing baskets.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: China USD xx.xx, Indonesia USD xx.xx and Japan USD xx.xx anchor the regional purchasing index before explicit local-supply adjustments.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: China USD xx.xx, Indonesia USD xx.xx and Japan USD xx.xx anchor the regional purchasing index before explicit local-supply adjustments.

5. Crushing/grinding machines for earth/ stone/ore imports by country | 2024
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: 2024 mineral crushing/grinding imports supply the secondary purchasing-index input; they contain out-of-scope ordinary crushers and are not treated as qualifying market revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: 2024 mineral crushing/grinding imports supply the secondary purchasing-index input; they contain out-of-scope ordinary crushers and are not treated as qualifying market revenue.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Country-level mineral machinery import observations support the Latin American purchasing basket and its explicitly modeled mining/package adjustments.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country-level mineral machinery import observations support the Latin American purchasing basket and its explicitly modeled mining/package adjustments.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: European national import observations provide the mineral-machinery component of the common purchasing index; the regional aggregate is not an extra country.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: European national import observations provide the mineral-machinery component of the common purchasing index; the regional aggregate is not an extra country.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Saudi Arabia and Turkey have separately reported mineral machinery imports, supporting national rather than bloc-wide purchasing inputs.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Saudi Arabia and Turkey have separately reported mineral machinery imports, supporting national rather than bloc-wide purchasing inputs.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: African reporter observations include major destinations outside the mandatory-country inventory, constraining a substantial noncatalog demand pool.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: African reporter observations include major destinations outside the mandatory-country inventory, constraining a substantial noncatalog demand pool.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Asia-Pacific and Central Asian reporter observations anchor the mineral-machinery component and unlisted-destination basket.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Asia-Pacific and Central Asian reporter observations anchor the mineral-machinery component and unlisted-destination basket.
6. Mach for mixing/kneading/crushing/grinding etc imports by country | 2021
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports were USD xx.xx. The model applies a qualified timing/access bridge and does not describe this as current trade.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports were USD xx.xx. The model applies a qualified timing/access bridge and does not describe this as current trade.
7. Crushing/grinding machines for earth/ stone/ore imports by country | 2021
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports of USD xx.xx provide the second historical purchasing primitive; the 2025 and 2032 allocations remain modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports of USD xx.xx provide the second historical purchasing primitive; the 2025 and 2032 allocations remain modeled.

8. World Manufacturing Production and Trade, Quarter IV 2025
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The report's mixed North American manufacturing conditions constrain a uniform high-growth assumption; output is not equated with mill purchasing.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Recent Latin American manufacturing weakness is counterevidence to immediate region-wide acceleration; forecast equipment factors remain conditional.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: European manufacturing stagnation and national divergence constrain the assumed relative equipment-purchasing path.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country-level manufacturing heterogeneity constrains the forecast; no single regional output rate is converted into machinery demand.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: African output observations include national counterexamples, supporting differentiated rather than uniform purchasing assumptions.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: China and other Asian manufacturing expansion, with national exceptions, provides directional context rather than an observed ultrafine-equipment growth rate.
9. Business Unit Grinding & Dispersing - NETZSCH
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The supplier documents local grinding-equipment production and commercial operations in Germany, the United States, Brazil, Russia, India and China. This supports considering domestic supply omitted by import statistics, but does not measure the model's correction factors.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The supplier documents local grinding-equipment production and commercial operations in Germany, the United States, Brazil, Russia, India and China. This supports considering domestic supply omitted by import statistics, but does not measure the model's correction factors.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Documented local commercial supply in China and India qualifies an import-only purchasing model; manufacturing location is not itself counted as buyer demand.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Documented local commercial supply in China and India qualifies an import-only purchasing model; manufacturing location is not itself counted as buyer demand.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Documented U.S. production and local commercial operations support an explicit, uncertain domestic-supply bridge rather than treating imports as the entire numerator.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Documented U.S. production and local commercial operations support an explicit, uncertain domestic-supply bridge rather than treating imports as the entire numerator.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Brazilian local production and commercial operations qualify reliance on imports alone, without establishing the assumed domestic sales amount.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Brazilian local production and commercial operations qualify reliance on imports alone, without establishing the assumed domestic sales amount.
10. High Energy Planetary Ball Mill - IIT Bombay
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The 2024 solicitation concerns one mill and requires two registration stages. It supports a purchaser-specific access constraint, not an award, national procurement conversion rate or forecast revenue.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The 2024 solicitation concerns one mill and requires two registration stages. It supports a purchaser-specific access constraint, not an award, national procurement conversion rate or forecast revenue.

11. Metso receives order for grinding mills to a copper project in Africa
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The EUR xx.xx August 2024 HIGmill equipment/auxiliary/services order establishes a commercial package in Africa but identifies neither country nor annual revenue recognition. It constrains attribution and is not added to 2025 demand.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The EUR xx.xx August 2024 HIGmill equipment/auxiliary/services order establishes a commercial package in Africa but identifies neither country nor annual revenue recognition. It constrains attribution and is not added to 2025 demand.
12. Methodology - UNIDO Industrial Analytics Platform
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The methodology notes that U.S. trade coverage includes Puerto Rico, reinforcing that the national purchasing proxy must not be renormalized to the xx.xx-state inventory.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The methodology notes that U.S. trade coverage includes Puerto Rico, reinforcing that the national purchasing proxy must not be renormalized to the xx.xx-state inventory.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The methodology identifies Monaco within French trade coverage; the customs input is an imperfect national demand proxy rather than a directly observed country numerator.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The methodology identifies Monaco within French trade coverage; the customs input is an imperfect national demand proxy rather than a directly observed country numerator.

8.2.2. Spiral Jet Mills

Table 34. Global Ultra Fine Grinding Mill Market Size, by Spiral Jet Mills, by Region, 2017-2040 (USD Million)

Region	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Africa	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Asia-Pacific	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Europe	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Latin America	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Middle East	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
North America	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 35. Global Ultra Fine Grinding Mill Market Size, by Spiral Jet Mills, by Group, 2017-2040 (USD Million)

Group	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
ASEAN	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
BRICS	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
European Union	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
G7	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
GCC	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
NATO	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx

Table 36. Global Ultra Fine Grinding Mill Market Size, by Spiral Jet Mills, by Country, 2017-2040 (USD Million)

Country	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Australia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Brazil	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Canada	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
China	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
France	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Germany	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
India	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Italy	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Japan	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mexico	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Russia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
South Korea	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Spain	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United Kingdom	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United States	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Others	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Sources & Evidence

1. Details of micromeritics | HOSOKAWAMICRON CORPORATION
   - Taxonomy evidence: Within its ultrafine-equipment discussion, the company identifies its own AS spiral jet mill. This refreshes a named offering only; independent literature remains the basis for category nomenclature. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Hosokawa identifies its AS spiral offering, supporting subtype mapping rather than a sales weight. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Hosokawa identifies its AS spiral offering, supporting subtype mapping rather than a sales weight. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))
2. Fine grinding of wood - Overview from wood breakage to applications
   - Taxonomy evidence: Spiral jet mills are explicitly identified as a jet-mill category.
3. Mach for mixing/kneading/crushing/grinding etc imports by country | 2024
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: 2024 gross machinery imports provide the purchasing-index input: U.S. HS xx.xx imports were USD xx.xx. These are broad machinery purchases, not ultrafine mill sales.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: 2024 gross machinery imports provide the purchasing-index input: U.S. HS xx.xx imports were USD xx.xx. These are broad machinery purchases, not ultrafine mill sales.
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   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country observations include Brazil USD xx.xx and Argentina USD xx.xx under HS xx.xx supporting the regional model's purchasing inputs.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: HS xx.xx imports include Germany USD xx.xx and France USD xx.xx; individual country records, rather than the EU aggregate, enter the allocation.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: HS xx.xx imports include Germany USD xx.xx and France USD xx.xx; individual country records, rather than the EU aggregate, enter the allocation.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Turkey USD xx.xx and Saudi Arabia USD xx.xx are broad machinery purchasing inputs, not observed qualifying-market numerators.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Turkey USD xx.xx and Saudi Arabia USD xx.xx are broad machinery purchasing inputs, not observed qualifying-market numerators.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: South Africa USD xx.xx and Egypt USD xx.xx, together with additional African reporters, anchor the purchasing baskets.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: South Africa USD xx.xx and Egypt USD xx.xx, together with additional African reporters, anchor the purchasing baskets.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: China USD xx.xx, Indonesia USD xx.xx and Japan USD xx.xx anchor the regional purchasing index before explicit local-supply adjustments.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: China USD xx.xx, Indonesia USD xx.xx and Japan USD xx.xx anchor the regional purchasing index before explicit local-supply adjustments.

4. Crushing/grinding machines for earth/ stone/ore imports by country | 2024
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: 2024 mineral crushing/grinding imports supply the secondary purchasing-index input; they contain out-of-scope ordinary crushers and are not treated as qualifying market revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: 2024 mineral crushing/grinding imports supply the secondary purchasing-index input; they contain out-of-scope ordinary crushers and are not treated as qualifying market revenue.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Country-level mineral machinery import observations support the Latin American purchasing basket and its explicitly modeled mining/package adjustments.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country-level mineral machinery import observations support the Latin American purchasing basket and its explicitly modeled mining/package adjustments.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: European national import observations provide the mineral-machinery component of the common purchasing index; the regional aggregate is not an extra country.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: European national import observations provide the mineral-machinery component of the common purchasing index; the regional aggregate is not an extra country.
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   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Saudi Arabia and Turkey have separately reported mineral machinery imports, supporting national rather than bloc-wide purchasing inputs.
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   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Asia-Pacific and Central Asian reporter observations anchor the mineral-machinery component and unlisted-destination basket.
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   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports were USD xx.xx. The model applies a qualified timing/access bridge and does not describe this as current trade.
6. Crushing/grinding machines for earth/ stone/ore imports by country | 2021
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports of USD xx.xx provide the second historical purchasing primitive; the 2025 and 2032 allocations remain modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports of USD xx.xx provide the second historical purchasing primitive; the 2025 and 2032 allocations remain modeled.

7. World Manufacturing Production and Trade, Quarter IV 2025
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The report's mixed North American manufacturing conditions constrain a uniform high-growth assumption; output is not equated with mill purchasing.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Recent Latin American manufacturing weakness is counterevidence to immediate region-wide acceleration; forecast equipment factors remain conditional.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: European manufacturing stagnation and national divergence constrain the assumed relative equipment-purchasing path.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country-level manufacturing heterogeneity constrains the forecast; no single regional output rate is converted into machinery demand.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: African output observations include national counterexamples, supporting differentiated rather than uniform purchasing assumptions.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: China and other Asian manufacturing expansion, with national exceptions, provides directional context rather than an observed ultrafine-equipment growth rate.
8. Business Unit Grinding & Dispersing - NETZSCH
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The supplier documents local grinding-equipment production and commercial operations in Germany, the United States, Brazil, Russia, India and China. This supports considering domestic supply omitted by import statistics, but does not measure the model's correction factors.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The supplier documents local grinding-equipment production and commercial operations in Germany, the United States, Brazil, Russia, India and China. This supports considering domestic supply omitted by import statistics, but does not measure the model's correction factors.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Documented local commercial supply in China and India qualifies an import-only purchasing model; manufacturing location is not itself counted as buyer demand.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Documented local commercial supply in China and India qualifies an import-only purchasing model; manufacturing location is not itself counted as buyer demand.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Documented U.S. production and local commercial operations support an explicit, uncertain domestic-supply bridge rather than treating imports as the entire numerator.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Documented U.S. production and local commercial operations support an explicit, uncertain domestic-supply bridge rather than treating imports as the entire numerator.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Brazilian local production and commercial operations qualify reliance on imports alone, without establishing the assumed domestic sales amount.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Brazilian local production and commercial operations qualify reliance on imports alone, without establishing the assumed domestic sales amount.
9. High Energy Planetary Ball Mill - IIT Bombay
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The 2024 solicitation concerns one mill and requires two registration stages. It supports a purchaser-specific access constraint, not an award, national procurement conversion rate or forecast revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The 2024 solicitation concerns one mill and requires two registration stages. It supports a purchaser-specific access constraint, not an award, national procurement conversion rate or forecast revenue.

10. Metso receives order for grinding mills to a copper project in Africa
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The EUR xx.xx August 2024 HIGmill equipment/auxiliary/services order establishes a commercial package in Africa but identifies neither country nor annual revenue recognition. It constrains attribution and is not added to 2025 demand.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The EUR xx.xx August 2024 HIGmill equipment/auxiliary/services order establishes a commercial package in Africa but identifies neither country nor annual revenue recognition. It constrains attribution and is not added to 2025 demand.
11. Methodology - UNIDO Industrial Analytics Platform
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The methodology notes that U.S. trade coverage includes Puerto Rico, reinforcing that the national purchasing proxy must not be renormalized to the xx.xx-state inventory.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The methodology notes that U.S. trade coverage includes Puerto Rico, reinforcing that the national purchasing proxy must not be renormalized to the xx.xx-state inventory.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The methodology identifies Monaco within French trade coverage; the customs input is an imperfect national demand proxy rather than a directly observed country numerator.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The methodology identifies Monaco within French trade coverage; the customs input is an imperfect national demand proxy rather than a directly observed country numerator.

8.2.3. Loop Jet Mills

Table 37. Global Ultra Fine Grinding Mill Market Size, by Loop Jet Mills, by Region, 2017-2040 (USD Million)

Region	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Africa	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Asia-Pacific	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Europe	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Latin America	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Middle East	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
North America	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 38. Global Ultra Fine Grinding Mill Market Size, by Loop Jet Mills, by Group, 2017-2040 (USD Million)

Group	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
ASEAN	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
BRICS	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
European Union	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
G7	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
GCC	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
NATO	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx

Table 39. Global Ultra Fine Grinding Mill Market Size, by Loop Jet Mills, by Country, 2017-2040 (USD Million)

Country	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Australia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Brazil	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Canada	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
China	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
France	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Germany	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
India	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Italy	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Japan	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mexico	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Russia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
South Korea	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Spain	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United Kingdom	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United States	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Others	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Sources & Evidence

1. Regulatory and Inspection Manual for Nonmetallic Mineral Processing Plants, Revised
   · Taxonomy evidence: Its fluid-energy description includes circular or elliptical particle paths and loop classification, supporting historical loop-platform terminology.

2. Fine grinding of wood - Overview from wood breakage to applications
   - Taxonomy evidence: Oval-chamber jet mills are explicitly identified; mapping them to the loop label is an analytical terminology harmonization.
3. Mach for mixing/kneading/crushing/grinding etc imports by country | 2024
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: 2024 gross machinery imports provide the purchasing-index input: U.S. HS xx.xx imports were USD xx.xx. These are broad machinery purchases, not ultrafine mill sales.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: 2024 gross machinery imports provide the purchasing-index input: U.S. HS xx.xx imports were USD xx.xx. These are broad machinery purchases, not ultrafine mill sales.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Country observations include Brazil USD xx.xx and Argentina USD xx.xx under HS xx.xx supporting the regional model's purchasing inputs.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country observations include Brazil USD xx.xx and Argentina USD xx.xx under HS xx.xx supporting the regional model's purchasing inputs.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: HS xx.xx imports include Germany USD xx.xx and France USD xx.xx; individual country records, rather than the EU aggregate, enter the allocation.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: HS xx.xx imports include Germany USD xx.xx and France USD xx.xx; individual country records, rather than the EU aggregate, enter the allocation.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Turkey USD xx.xx and Saudi Arabia USD xx.xx are broad machinery purchasing inputs, not observed qualifying-market numerators.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Turkey USD xx.xx and Saudi Arabia USD xx.xx are broad machinery purchasing inputs, not observed qualifying-market numerators.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: South Africa USD xx.xx and Egypt USD xx.xx, together with additional African reporters, anchor the purchasing baskets.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: South Africa USD xx.xx and Egypt USD xx.xx, together with additional African reporters, anchor the purchasing baskets.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: China USD xx.xx, Indonesia USD xx.xx and Japan USD xx.xx anchor the regional purchasing index before explicit local-supply adjustments.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: China USD xx.xx, Indonesia USD xx.xx and Japan USD xx.xx anchor the regional purchasing index before explicit local-supply adjustments.

4. Crushing/grinding machines for earth/ stone/ore imports by country | 2024
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: 2024 mineral crushing/grinding imports supply the secondary purchasing-index input; they contain out-of-scope ordinary crushers and are not treated as qualifying market revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: 2024 mineral crushing/grinding imports supply the secondary purchasing-index input; they contain out-of-scope ordinary crushers and are not treated as qualifying market revenue.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Country-level mineral machinery import observations support the Latin American purchasing basket and its explicitly modeled mining/package adjustments.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country-level mineral machinery import observations support the Latin American purchasing basket and its explicitly modeled mining/package adjustments.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: European national import observations provide the mineral-machinery component of the common purchasing index; the regional aggregate is not an extra country.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: European national import observations provide the mineral-machinery component of the common purchasing index; the regional aggregate is not an extra country.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Saudi Arabia and Turkey have separately reported mineral machinery imports, supporting national rather than bloc-wide purchasing inputs.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Saudi Arabia and Turkey have separately reported mineral machinery imports, supporting national rather than bloc-wide purchasing inputs.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: African reporter observations include major destinations outside the mandatory-country inventory, constraining a substantial noncatalog demand pool.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: African reporter observations include major destinations outside the mandatory-country inventory, constraining a substantial noncatalog demand pool.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Asia-Pacific and Central Asian reporter observations anchor the mineral-machinery component and unlisted-destination basket.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Asia-Pacific and Central Asian reporter observations anchor the mineral-machinery component and unlisted-destination basket.
5. Mach for mixing/kneading/crushing/grinding etc imports by country | 2021
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports were USD xx.xx. The model applies a qualified timing/access bridge and does not describe this as current trade.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports were USD xx.xx. The model applies a qualified timing/access bridge and does not describe this as current trade.
6. Crushing/grinding machines for earth/ stone/ore imports by country | 2021
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports of USD xx.xx provide the second historical purchasing primitive; the 2025 and 2032 allocations remain modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports of USD xx.xx provide the second historical purchasing primitive; the 2025 and 2032 allocations remain modeled.

7. World Manufacturing Production and Trade, Quarter IV 2025
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The report's mixed North American manufacturing conditions constrain a uniform high-growth assumption; output is not equated with mill purchasing.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Recent Latin American manufacturing weakness is counterevidence to immediate region-wide acceleration; forecast equipment factors remain conditional.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: European manufacturing stagnation and national divergence constrain the assumed relative equipment-purchasing path.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country-level manufacturing heterogeneity constrains the forecast; no single regional output rate is converted into machinery demand.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: African output observations include national counterexamples, supporting differentiated rather than uniform purchasing assumptions.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: China and other Asian manufacturing expansion, with national exceptions, provides directional context rather than an observed ultrafine-equipment growth rate.
8. Business Unit Grinding & Dispersing - NETZSCH
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The supplier documents local grinding-equipment production and commercial operations in Germany, the United States, Brazil, Russia, India and China. This supports considering domestic supply omitted by import statistics, but does not measure the model's correction factors.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The supplier documents local grinding-equipment production and commercial operations in Germany, the United States, Brazil, Russia, India and China. This supports considering domestic supply omitted by import statistics, but does not measure the model's correction factors.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Documented local commercial supply in China and India qualifies an import-only purchasing model; manufacturing location is not itself counted as buyer demand.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Documented local commercial supply in China and India qualifies an import-only purchasing model; manufacturing location is not itself counted as buyer demand.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Documented U.S. production and local commercial operations support an explicit, uncertain domestic-supply bridge rather than treating imports as the entire numerator.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Documented U.S. production and local commercial operations support an explicit, uncertain domestic-supply bridge rather than treating imports as the entire numerator.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Brazilian local production and commercial operations qualify reliance on imports alone, without establishing the assumed domestic sales amount.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Brazilian local production and commercial operations qualify reliance on imports alone, without establishing the assumed domestic sales amount.
9. High Energy Planetary Ball Mill - IIT Bombay
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The 2024 solicitation concerns one mill and requires two registration stages. It supports a purchaser-specific access constraint, not an award, national procurement conversion rate or forecast revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The 2024 solicitation concerns one mill and requires two registration stages. It supports a purchaser-specific access constraint, not an award, national procurement conversion rate or forecast revenue.

10. Metso receives order for grinding mills to a copper project in Africa
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The EUR xx.xx August 2024 HIGmill equipment/auxiliary/services order establishes a commercial package in Africa but identifies neither country nor annual revenue recognition. It constrains attribution and is not added to 2025 demand.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The EUR xx.xx August 2024 HIGmill equipment/auxiliary/services order establishes a commercial package in Africa but identifies neither country nor annual revenue recognition. It constrains attribution and is not added to 2025 demand.
11. Methodology - UNIDO Industrial Analytics Platform
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The methodology notes that U.S. trade coverage includes Puerto Rico, reinforcing that the national purchasing proxy must not be renormalized to the xx.xx-state inventory.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The methodology notes that U.S. trade coverage includes Puerto Rico, reinforcing that the national purchasing proxy must not be renormalized to the xx.xx-state inventory.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The methodology identifies Monaco within French trade coverage; the customs input is an imperfect national demand proxy rather than a directly observed country numerator.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The methodology identifies Monaco within French trade coverage; the customs input is an imperfect national demand proxy rather than a directly observed country numerator.
12. Loop Jet Mill - Consistency. Compliance. Engineered.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The current named Loop Jet Mill listing establishes an offered commercial platform. It supports forecast category continuity, but does not disclose subtype revenue or prove 2025 sales. ([jetmillmfg.com](https://www.jetmillmfg.com/loop-jet-mill/))

8.2.4. Target Jet Mills

Table 40. Global Ultra Fine Grinding Mill Market Size, by Target Jet Mills, by Region, 2017-2040 (USD Million)

Region	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Africa	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Asia-Pacific	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Europe	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Latin America	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Middle East	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
North America	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 41. Global Ultra Fine Grinding Mill Market Size, by Target Jet Mills, by Group, 2017-2040 (USD Million)

Group	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
ASEAN	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
BRICS	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
European Union	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
G7	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
GCC	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
NATO	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx

Table 42. Global Ultra Fine Grinding Mill Market Size, by Target Jet Mills, by Country, 2017-2040 (USD Million)

Country	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Australia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Brazil	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Canada	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
China	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
France	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Germany	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
India	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Italy	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Japan	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mexico	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Russia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
South Korea	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Spain	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United Kingdom	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United States	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Others	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Sources & Evidence

1. Rare earths (magnetic raw materials) - Hosokawa Micron Powder Systems
   · Taxonomy evidence: The manufacturer's own offering identifies MJT as a target jet mill while its narrative also uses opposed-jet terminology. This exposes a naming overlap; giving an explicit target-platform label precedence is an analytical allocation convention, not a claim of technical equivalence. ([hmicronpowder.com](https://www.hmicronpowder.com/industry/mineral/rare-earths-magnetic-raw-materials/))
2. Details of micromeritics | HOSOKAWAMICRON CORPORATION
   · Taxonomy evidence: The company identifies its own MJQ and MJT collision-jet series within the ultrafine discussion. Combined with the explicit MJT target label in its separate offering, this supplements current named-platform recognition without proving purchaser adoption. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))
3. Fine grinding of wood - Overview from wood breakage to applications
   · Taxonomy evidence: Target jet mills are explicitly identified, without establishing current subtype sales.
4. Mach for mixing/kneading/crushing/grinding etc imports by country | 2024
   · Evidence informing base-year allocation inputs; displayed values and growth are calculated: 2024 gross machinery imports provide the purchasing-index input: U.S. HS xx.xx imports were USD xx.xx. These are broad machinery purchases, not ultrafine mill sales.
   · Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: 2024 gross machinery imports provide the purchasing-index input: U.S. HS xx.xx imports were USD xx.xx. These are broad machinery purchases, not ultrafine mill sales.
   · Evidence informing base-year allocation inputs; displayed values and growth are calculated: Country observations include Brazil USD xx.xx and Argentina USD xx.xx under HS xx.xx supporting the regional model's purchasing inputs.
   · Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country observations include Brazil USD xx.xx and Argentina USD xx.xx under HS xx.xx supporting the regional model's purchasing inputs.
   · Evidence informing base-year allocation inputs; displayed values and growth are calculated: HS xx.xx imports include Germany USD xx.xx and France USD xx.xx; individual country records, rather than the EU aggregate, enter the allocation.
   · Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: HS xx.xx imports include Germany USD xx.xx and France USD xx.xx; individual country records, rather than the EU aggregate, enter the allocation.
   · Evidence informing base-year allocation inputs; displayed values and growth are calculated: Turkey USD xx.xx and Saudi Arabia USD xx.xx are broad machinery purchasing inputs, not observed qualifying-market numerators.
   · Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Turkey USD xx.xx and Saudi Arabia USD xx.xx are broad machinery purchasing inputs, not observed qualifying-market numerators.
   · Evidence informing base-year allocation inputs; displayed values and growth are calculated: South Africa USD xx.xx and Egypt USD xx.xx, together with additional African reporters, anchor the purchasing baskets.
   · Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: South Africa USD xx.xx and Egypt USD xx.xx, together with additional African reporters, anchor the purchasing baskets.
   · Evidence informing base-year allocation inputs; displayed values and growth are calculated: China USD xx.xx, Indonesia USD xx.xx and Japan USD xx.xx anchor the regional purchasing index before explicit local-supply adjustments.
   · Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: China USD xx.xx, Indonesia USD xx.xx and Japan USD xx.xx anchor the regional purchasing index before explicit local-supply adjustments.

5. Crushing/grinding machines for earth/ stone/ore imports by country | 2024
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: 2024 mineral crushing/grinding imports supply the secondary purchasing-index input; they contain out-of-scope ordinary crushers and are not treated as qualifying market revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: 2024 mineral crushing/grinding imports supply the secondary purchasing-index input; they contain out-of-scope ordinary crushers and are not treated as qualifying market revenue.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Country-level mineral machinery import observations support the Latin American purchasing basket and its explicitly modeled mining/package adjustments.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country-level mineral machinery import observations support the Latin American purchasing basket and its explicitly modeled mining/package adjustments.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: European national import observations provide the mineral-machinery component of the common purchasing index; the regional aggregate is not an extra country.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: European national import observations provide the mineral-machinery component of the common purchasing index; the regional aggregate is not an extra country.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Saudi Arabia and Turkey have separately reported mineral machinery imports, supporting national rather than bloc-wide purchasing inputs.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Saudi Arabia and Turkey have separately reported mineral machinery imports, supporting national rather than bloc-wide purchasing inputs.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: African reporter observations include major destinations outside the mandatory-country inventory, constraining a substantial noncatalog demand pool.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: African reporter observations include major destinations outside the mandatory-country inventory, constraining a substantial noncatalog demand pool.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Asia-Pacific and Central Asian reporter observations anchor the mineral-machinery component and unlisted-destination basket.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Asia-Pacific and Central Asian reporter observations anchor the mineral-machinery component and unlisted-destination basket.
6. Mach for mixing/kneading/crushing/grinding etc imports by country | 2021
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports were USD xx.xx. The model applies a qualified timing/access bridge and does not describe this as current trade.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports were USD xx.xx. The model applies a qualified timing/access bridge and does not describe this as current trade.
7. Crushing/grinding machines for earth/ stone/ore imports by country | 2021
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports of USD xx.xx provide the second historical purchasing primitive; the 2025 and 2032 allocations remain modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports of USD xx.xx provide the second historical purchasing primitive; the 2025 and 2032 allocations remain modeled.

8. World Manufacturing Production and Trade, Quarter IV 2025
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The report's mixed North American manufacturing conditions constrain a uniform high-growth assumption; output is not equated with mill purchasing.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Recent Latin American manufacturing weakness is counterevidence to immediate region-wide acceleration; forecast equipment factors remain conditional.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: European manufacturing stagnation and national divergence constrain the assumed relative equipment-purchasing path.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country-level manufacturing heterogeneity constrains the forecast; no single regional output rate is converted into machinery demand.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: African output observations include national counterexamples, supporting differentiated rather than uniform purchasing assumptions.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: China and other Asian manufacturing expansion, with national exceptions, provides directional context rather than an observed ultrafine-equipment growth rate.
9. Business Unit Grinding & Dispersing - NETZSCH
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The supplier documents local grinding-equipment production and commercial operations in Germany, the United States, Brazil, Russia, India and China. This supports considering domestic supply omitted by import statistics, but does not measure the model's correction factors.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The supplier documents local grinding-equipment production and commercial operations in Germany, the United States, Brazil, Russia, India and China. This supports considering domestic supply omitted by import statistics, but does not measure the model's correction factors.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Documented local commercial supply in China and India qualifies an import-only purchasing model; manufacturing location is not itself counted as buyer demand.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Documented local commercial supply in China and India qualifies an import-only purchasing model; manufacturing location is not itself counted as buyer demand.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Documented U.S. production and local commercial operations support an explicit, uncertain domestic-supply bridge rather than treating imports as the entire numerator.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Documented U.S. production and local commercial operations support an explicit, uncertain domestic-supply bridge rather than treating imports as the entire numerator.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Brazilian local production and commercial operations qualify reliance on imports alone, without establishing the assumed domestic sales amount.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Brazilian local production and commercial operations qualify reliance on imports alone, without establishing the assumed domestic sales amount.
10. High Energy Planetary Ball Mill - IIT Bombay
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The 2024 solicitation concerns one mill and requires two registration stages. It supports a purchaser-specific access constraint, not an award, national procurement conversion rate or forecast revenue.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The 2024 solicitation concerns one mill and requires two registration stages. It supports a purchaser-specific access constraint, not an award, national procurement conversion rate or forecast revenue.

11. Metso receives order for grinding mills to a copper project in Africa
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The EUR xx.xx August 2024 HIGmill equipment/auxiliary/services order establishes a commercial package in Africa but identifies neither country nor annual revenue recognition. It constrains attribution and is not added to 2025 demand.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The EUR xx.xx August 2024 HIGmill equipment/auxiliary/services order establishes a commercial package in Africa but identifies neither country nor annual revenue recognition. It constrains attribution and is not added to 2025 demand.
12. Methodology - UNIDO Industrial Analytics Platform
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The methodology notes that U.S. trade coverage includes Puerto Rico, reinforcing that the national purchasing proxy must not be renormalized to the xx.xx-state inventory.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The methodology notes that U.S. trade coverage includes Puerto Rico, reinforcing that the national purchasing proxy must not be renormalized to the xx.xx-state inventory.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The methodology identifies Monaco within French trade coverage; the customs input is an imperfect national demand proxy rather than a directly observed country numerator.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The methodology identifies Monaco within French trade coverage; the customs input is an imperfect national demand proxy rather than a directly observed country numerator.
13. Ultra-Fine Grinding - Hosokawa Micron Malaysia
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: MJT is explicitly listed as a target-type offering, supporting precedence of the named platform over overlapping generic jet terminology. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: MJT is explicitly listed as a target-type offering, supporting precedence of the named platform over overlapping generic jet terminology. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

8.3. Mechanical Impact Mills

Table 43. Global Ultra Fine Grinding Mill Market Size, by Mechanical Impact Mills, by Region, 2017-2040 (USD Million)

Region	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Africa	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Asia-Pacific	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Europe	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Latin America	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Middle East	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
North America	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 44. Global Ultra Fine Grinding Mill Market Size, by Mechanical Impact Mills, by Group, 2017-2040 (USD Million)

Group	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
ASEAN	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
BRICS	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
European Union	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
G7	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
GCC	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
NATO	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx

Table 45. Global Ultra Fine Grinding Mill Market Size, by Mechanical Impact Mills, by Country, 2017-2040 (USD Million)

Country	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Australia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Brazil	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Canada	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
China	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
France	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Germany	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
India	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Italy	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Japan	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mexico	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Russia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
South Korea	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Spain	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United Kingdom	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United States	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Others	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Sources & Evidence

1. Details of micromeritics | HOSOKAWAMICRON CORPORATION
   · Taxonomy evidence: The company identifies its Innovomizer as a mechanical ultrafine grinding mill. This corroborates one named qualifying offering, not eligibility of all hammer, pin, or rotor-impact equipment. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))
   · Evidence informing base-year allocation inputs; displayed values and growth are calculated: The manufacturer identifies Innovomizer as a mechanical ultrafine offering; ordinary impact equipment is not automatically included. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))
   · Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The manufacturer identifies Innovomizer as a mechanical ultrafine offering; ordinary impact equipment is not automatically included. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))
2. Process Plant and Equipment - Product directory
   · Taxonomy evidence: Impact, pin, hammer, beater, and sifter mills are separately named equipment categories.
3. Regulatory and Inspection Manual for Nonmetallic Mineral Processing Plants, Revised
   · Taxonomy evidence: Hammermills are described as mechanically driven impact equipment; this does not establish that every hammermill qualifies as ultrafine.
4. Fine grinding of wood - Overview from wood breakage to applications
   · Taxonomy evidence: Rotor-impact mills include screened and integrated-classifier configurations; classifier presence does not define a separate principal milling platform.

5. Mach for mixing/kneading/crushing/grinding etc imports by country | 2024
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: 2024 gross machinery imports provide the purchasing-index input: U.S. HS xx.xx imports were USD xx.xx. These are broad machinery purchases, not ultrafine mill sales.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: 2024 gross machinery imports provide the purchasing-index input: U.S. HS xx.xx imports were USD xx.xx. These are broad machinery purchases, not ultrafine mill sales.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Country observations include Brazil USD xx.xx and Argentina USD xx.xx under HS xx.xx supporting the regional model's purchasing inputs.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country observations include Brazil USD xx.xx and Argentina USD xx.xx under HS xx.xx supporting the regional model's purchasing inputs.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: HS xx.xx imports include Germany USD xx.xx and France USD xx.xx; individual country records, rather than the EU aggregate, enter the allocation.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: HS xx.xx imports include Germany USD xx.xx and France USD xx.xx; individual country records, rather than the EU aggregate, enter the allocation.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Turkey USD xx.xx and Saudi Arabia USD xx.xx are broad machinery purchasing inputs, not observed qualifying-market numerators.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Turkey USD xx.xx and Saudi Arabia USD xx.xx are broad machinery purchasing inputs, not observed qualifying-market numerators.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: South Africa USD xx.xx and Egypt USD xx.xx, together with additional African reporters, anchor the purchasing baskets.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: South Africa USD xx.xx and Egypt USD xx.xx, together with additional African reporters, anchor the purchasing baskets.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: China USD xx.xx, Indonesia USD xx.xx and Japan USD xx.xx anchor the regional purchasing index before explicit local-supply adjustments.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: China USD xx.xx, Indonesia USD xx.xx and Japan USD xx.xx anchor the regional purchasing index before explicit local-supply adjustments.

6. Crushing/grinding machines for earth/ stone/ore imports by country | 2024
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: 2024 mineral crushing/grinding imports supply the secondary purchasing-index input; they contain out-of-scope ordinary crushers and are not treated as qualifying market revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: 2024 mineral crushing/grinding imports supply the secondary purchasing-index input; they contain out-of-scope ordinary crushers and are not treated as qualifying market revenue.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Country-level mineral machinery import observations support the Latin American purchasing basket and its explicitly modeled mining/package adjustments.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country-level mineral machinery import observations support the Latin American purchasing basket and its explicitly modeled mining/package adjustments.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: European national import observations provide the mineral-machinery component of the common purchasing index; the regional aggregate is not an extra country.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: European national import observations provide the mineral-machinery component of the common purchasing index; the regional aggregate is not an extra country.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Saudi Arabia and Turkey have separately reported mineral machinery imports, supporting national rather than bloc-wide purchasing inputs.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Saudi Arabia and Turkey have separately reported mineral machinery imports, supporting national rather than bloc-wide purchasing inputs.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: African reporter observations include major destinations outside the mandatory-country inventory, constraining a substantial noncatalog demand pool.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: African reporter observations include major destinations outside the mandatory-country inventory, constraining a substantial noncatalog demand pool.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Asia-Pacific and Central Asian reporter observations anchor the mineral-machinery component and unlisted-destination basket.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Asia-Pacific and Central Asian reporter observations anchor the mineral-machinery component and unlisted-destination basket.
7. Mach for mixing/kneading/crushing/grinding etc imports by country | 2021
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports were USD xx.xx. The model applies a qualified timing/access bridge and does not describe this as current trade.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports were USD xx.xx. The model applies a qualified timing/access bridge and does not describe this as current trade.
8. Crushing/grinding machines for earth/ stone/ore imports by country | 2021
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports of USD xx.xx provide the second historical purchasing primitive; the 2025 and 2032 allocations remain modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports of USD xx.xx provide the second historical purchasing primitive; the 2025 and 2032 allocations remain modeled.

9. World Manufacturing Production and Trade, Quarter IV 2025
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The report's mixed North American manufacturing conditions constrain a uniform high-growth assumption; output is not equated with mill purchasing.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Recent Latin American manufacturing weakness is counterevidence to immediate region-wide acceleration; forecast equipment factors remain conditional.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: European manufacturing stagnation and national divergence constrain the assumed relative equipment-purchasing path.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country-level manufacturing heterogeneity constrains the forecast; no single regional output rate is converted into machinery demand.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: African output observations include national counterexamples, supporting differentiated rather than uniform purchasing assumptions.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: China and other Asian manufacturing expansion, with national exceptions, provides directional context rather than an observed ultrafine-equipment growth rate.
10. Business Unit Grinding & Dispersing - NETZSCH
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The supplier documents local grinding-equipment production and commercial operations in Germany, the United States, Brazil, Russia, India and China. This supports considering domestic supply omitted by import statistics, but does not measure the model's correction factors.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The supplier documents local grinding-equipment production and commercial operations in Germany, the United States, Brazil, Russia, India and China. This supports considering domestic supply omitted by import statistics, but does not measure the model's correction factors.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Documented local commercial supply in China and India qualifies an import-only purchasing model; manufacturing location is not itself counted as buyer demand.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Documented local commercial supply in China and India qualifies an import-only purchasing model; manufacturing location is not itself counted as buyer demand.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Documented U.S. production and local commercial operations support an explicit, uncertain domestic-supply bridge rather than treating imports as the entire numerator.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Documented U.S. production and local commercial operations support an explicit, uncertain domestic-supply bridge rather than treating imports as the entire numerator.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Brazilian local production and commercial operations qualify reliance on imports alone, without establishing the assumed domestic sales amount.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Brazilian local production and commercial operations qualify reliance on imports alone, without establishing the assumed domestic sales amount.
11. High Energy Planetary Ball Mill - IIT Bombay
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The 2024 solicitation concerns one mill and requires two registration stages. It supports a purchaser-specific access constraint, not an award, national procurement conversion rate or forecast revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The 2024 solicitation concerns one mill and requires two registration stages. It supports a purchaser-specific access constraint, not an award, national procurement conversion rate or forecast revenue.

12. Metso receives order for grinding mills to a copper project in Africa
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The EUR xx.xx August 2024 HIGmill equipment/auxiliary/services order establishes a commercial package in Africa but identifies neither country nor annual revenue recognition. It constrains attribution and is not added to 2025 demand.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The EUR xx.xx August 2024 HIGmill equipment/auxiliary/services order establishes a commercial package in Africa but identifies neither country nor annual revenue recognition. It constrains attribution and is not added to 2025 demand.
13. Methodology - UNIDO Industrial Analytics Platform
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The methodology notes that U.S. trade coverage includes Puerto Rico, reinforcing that the national purchasing proxy must not be renormalized to the xx.xx-state inventory.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The methodology notes that U.S. trade coverage includes Puerto Rico, reinforcing that the national purchasing proxy must not be renormalized to the xx.xx-state inventory.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The methodology identifies Monaco within French trade coverage; the customs input is an imperfect national demand proxy rather than a directly observed country numerator.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The methodology identifies Monaco within French trade coverage; the customs input is an imperfect national demand proxy rather than a directly observed country numerator.

8.4. Roller Mills

Table 46. Global Ultra Fine Grinding Mill Market Size, by Roller Mills, by Region, 2017-2040 (USD Million)

Region	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Africa	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Asia-Pacific	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Europe	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Latin America	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Middle East	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
North America	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 47. Global Ultra Fine Grinding Mill Market Size, by Roller Mills, by Group, 2017-2040 (USD Million)

Group	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
ASEAN	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
BRICS	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
European Union	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
G7	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
GCC	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
NATO	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx

Table 48. Global Ultra Fine Grinding Mill Market Size, by Roller Mills, by Country, 2017-2040 (USD Million)

Country	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Australia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Brazil	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Canada	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
China	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
France	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Germany	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
India	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Italy	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Japan	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mexico	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Russia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
South Korea	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Spain	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United Kingdom	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United States	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Others	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Sources & Evidence

1. Process Plant and Equipment - Product directory
   - Taxonomy evidence: Roller and rolling mills are listed, without establishing ultrafine eligibility for every offering.
2. Regulatory and Inspection Manual for Nonmetallic Mineral Processing Plants, Revised
   - Taxonomy evidence: Roller mills remain a distinct platform even when an integral separator is present.

3. Fine grinding of wood - Overview from wood breakage to applications
   - Taxonomy evidence: Roller and disc milling are distinguished as separate equipment families.
4. Mach for mixing/kneading/crushing/grinding etc imports by country | 2024
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: 2024 gross machinery imports provide the purchasing-index input: U.S. HS xx.xx imports were USD xx.xx. These are broad machinery purchases, not ultrafine mill sales.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: 2024 gross machinery imports provide the purchasing-index input: U.S. HS xx.xx imports were USD xx.xx. These are broad machinery purchases, not ultrafine mill sales.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Country observations include Brazil USD xx.xx and Argentina USD xx.xx under HS xx.xx supporting the regional model's purchasing inputs.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country observations include Brazil USD xx.xx and Argentina USD xx.xx under HS xx.xx supporting the regional model's purchasing inputs.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: HS xx.xx imports include Germany USD xx.xx and France USD xx.xx; individual country records, rather than the EU aggregate, enter the allocation.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: HS xx.xx imports include Germany USD xx.xx and France USD xx.xx; individual country records, rather than the EU aggregate, enter the allocation.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Turkey USD xx.xx and Saudi Arabia USD xx.xx are broad machinery purchasing inputs, not observed qualifying-market numerators.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Turkey USD xx.xx and Saudi Arabia USD xx.xx are broad machinery purchasing inputs, not observed qualifying-market numerators.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: South Africa USD xx.xx and Egypt USD xx.xx, together with additional African reporters, anchor the purchasing baskets.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: South Africa USD xx.xx and Egypt USD xx.xx, together with additional African reporters, anchor the purchasing baskets.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: China USD xx.xx, Indonesia USD xx.xx and Japan USD xx.xx anchor the regional purchasing index before explicit local-supply adjustments.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: China USD xx.xx, Indonesia USD xx.xx and Japan USD xx.xx anchor the regional purchasing index before explicit local-supply adjustments.

5. Crushing/grinding machines for earth/ stone/ore imports by country | 2024
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: 2024 mineral crushing/grinding imports supply the secondary purchasing-index input; they contain out-of-scope ordinary crushers and are not treated as qualifying market revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: 2024 mineral crushing/grinding imports supply the secondary purchasing-index input; they contain out-of-scope ordinary crushers and are not treated as qualifying market revenue.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Country-level mineral machinery import observations support the Latin American purchasing basket and its explicitly modeled mining/package adjustments.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country-level mineral machinery import observations support the Latin American purchasing basket and its explicitly modeled mining/package adjustments.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: European national import observations provide the mineral-machinery component of the common purchasing index; the regional aggregate is not an extra country.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: European national import observations provide the mineral-machinery component of the common purchasing index; the regional aggregate is not an extra country.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Saudi Arabia and Turkey have separately reported mineral machinery imports, supporting national rather than bloc-wide purchasing inputs.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Saudi Arabia and Turkey have separately reported mineral machinery imports, supporting national rather than bloc-wide purchasing inputs.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: African reporter observations include major destinations outside the mandatory-country inventory, constraining a substantial noncatalog demand pool.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: African reporter observations include major destinations outside the mandatory-country inventory, constraining a substantial noncatalog demand pool.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Asia-Pacific and Central Asian reporter observations anchor the mineral-machinery component and unlisted-destination basket.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Asia-Pacific and Central Asian reporter observations anchor the mineral-machinery component and unlisted-destination basket.
6. Mach for mixing/kneading/crushing/grinding etc imports by country | 2021
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports were USD xx.xx. The model applies a qualified timing/access bridge and does not describe this as current trade.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports were USD xx.xx. The model applies a qualified timing/access bridge and does not describe this as current trade.
7. Crushing/grinding machines for earth/ stone/ore imports by country | 2021
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports of USD xx.xx provide the second historical purchasing primitive; the 2025 and 2032 allocations remain modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports of USD xx.xx provide the second historical purchasing primitive; the 2025 and 2032 allocations remain modeled.

8. World Manufacturing Production and Trade, Quarter IV 2025
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The report's mixed North American manufacturing conditions constrain a uniform high-growth assumption; output is not equated with mill purchasing.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Recent Latin American manufacturing weakness is counterevidence to immediate region-wide acceleration; forecast equipment factors remain conditional.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: European manufacturing stagnation and national divergence constrain the assumed relative equipment-purchasing path.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country-level manufacturing heterogeneity constrains the forecast; no single regional output rate is converted into machinery demand.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: African output observations include national counterexamples, supporting differentiated rather than uniform purchasing assumptions.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: China and other Asian manufacturing expansion, with national exceptions, provides directional context rather than an observed ultrafine-equipment growth rate.
9. Business Unit Grinding & Dispersing - NETZSCH
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The supplier documents local grinding-equipment production and commercial operations in Germany, the United States, Brazil, Russia, India and China. This supports considering domestic supply omitted by import statistics, but does not measure the model's correction factors.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The supplier documents local grinding-equipment production and commercial operations in Germany, the United States, Brazil, Russia, India and China. This supports considering domestic supply omitted by import statistics, but does not measure the model's correction factors.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Documented local commercial supply in China and India qualifies an import-only purchasing model; manufacturing location is not itself counted as buyer demand.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Documented local commercial supply in China and India qualifies an import-only purchasing model; manufacturing location is not itself counted as buyer demand.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Documented U.S. production and local commercial operations support an explicit, uncertain domestic-supply bridge rather than treating imports as the entire numerator.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Documented U.S. production and local commercial operations support an explicit, uncertain domestic-supply bridge rather than treating imports as the entire numerator.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Brazilian local production and commercial operations qualify reliance on imports alone, without establishing the assumed domestic sales amount.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Brazilian local production and commercial operations qualify reliance on imports alone, without establishing the assumed domestic sales amount.
10. High Energy Planetary Ball Mill - IIT Bombay
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The 2024 solicitation concerns one mill and requires two registration stages. It supports a purchaser-specific access constraint, not an award, national procurement conversion rate or forecast revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The 2024 solicitation concerns one mill and requires two registration stages. It supports a purchaser-specific access constraint, not an award, national procurement conversion rate or forecast revenue.

11. Metso receives order for grinding mills to a copper project in Africa
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The EUR xx.xx August 2024 HIGmill equipment/auxiliary/services order establishes a commercial package in Africa but identifies neither country nor annual revenue recognition. It constrains attribution and is not added to 2025 demand.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The EUR xx.xx August 2024 HIGmill equipment/auxiliary/services order establishes a commercial package in Africa but identifies neither country nor annual revenue recognition. It constrains attribution and is not added to 2025 demand.
12. Methodology - UNIDO Industrial Analytics Platform
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The methodology notes that U.S. trade coverage includes Puerto Rico, reinforcing that the national purchasing proxy must not be renormalized to the xx.xx-state inventory.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The methodology notes that U.S. trade coverage includes Puerto Rico, reinforcing that the national purchasing proxy must not be renormalized to the xx.xx-state inventory.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The methodology identifies Monaco within French trade coverage; the customs input is an imperfect national demand proxy rather than a directly observed country numerator.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The methodology identifies Monaco within French trade coverage; the customs input is an imperfect national demand proxy rather than a directly observed country numerator.
13. Ultra-Fine Grinding - Hosokawa Micron Malaysia
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The inspected ultrafine portfolio identifies AWM-F table-roller equipment, supporting the qualifying Roller Mills boundary, not its assumed counts or prices. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The inspected ultrafine portfolio identifies AWM-F table-roller equipment, supporting the qualifying Roller Mills boundary, not its assumed counts or prices. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

8.5. Disc and Colloid Mills

Table 49. Global Ultra Fine Grinding Mill Market Size, by Disc and Colloid Mills, by Region, 2017-2040 (USD Million)

Region	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Africa	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Asia-Pacific	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Europe	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Latin America	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Middle East	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
North America	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 50. Global Ultra Fine Grinding Mill Market Size, by Disc and Colloid Mills, by Group, 2017-2040 (USD Million)

Group	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
ASEAN	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
BRICS	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
European Union	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
G7	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
GCC	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
NATO	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx

Table 51. Global Ultra Fine Grinding Mill Market Size, by Disc and Colloid Mills, by Country, 2017-2040 (USD Million)

Country	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Australia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Brazil	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Canada	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
China	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
France	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Germany	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
India	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Italy	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Japan	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mexico	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Russia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
South Korea	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Spain	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United Kingdom	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United States	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Others	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Sources & Evidence

1. Process Plant and Equipment - Product directory
   - Taxonomy evidence: Colloid and corundum disc mills are listed as recognized equipment categories.
2. Fine grinding of wood - Overview from wood breakage to applications
   - Taxonomy evidence: Disc milling is distinguished from media and rotor-impact milling; the review does not define the full combined disc/colloid family.

3. ITDI-PB-2024-057-Supply, Delivery, Installation and Commissioning of one (1) lot Ultra-fine friction grinder (Supermasscolloider)

   · Taxonomy evidence: The notice independently establishes purchaser recognition of an ultrafine friction-grinder equipment category. It does not establish a sale or validate the entire proposed disc/colloid grouping.

   · Evidence informing base-year allocation inputs; displayed values and growth are calculated: The 2024 friction-grinder procurement had a PHP xx.xx budget and failed with no bidder. It establishes a configured-package spending ceiling and commercial category, not a sale or a shipment count. ([notices.philgeps.gov.ph](https://notices.philgeps.gov.ph/GEPSNONPILOT/Tender/PrintableBidNoticeAbstractUI.aspx?refid=xx.xx))

   · Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The 2024 friction-grinder procurement had a PHP xx.xx budget and failed with no bidder. It establishes a configured-package spending ceiling and commercial category, not a sale or a shipment count. ([notices.philgeps.gov.ph](https://notices.philgeps.gov.ph/GEPSNONPILOT/Tender/PrintableBidNoticeAbstractUI.aspx?refid=xx.xx))

4. Colloid Mill for Wet Grinding, Homogenizing and Dispersion

   · Taxonomy evidence: The inspected colloid-mill offering explicitly identifies rotor-stator equipment for wet ultrafine grinding and micron-level material reduction. It corroborates a commercial colloid-milling constituent, not the market-wide combined family or inclusion of all mixing and emulsification equipment. ([boyeemill.com](https://www.boyeemill.com/boyee-colloid-mill.html))

5. Mach for mixing/kneading/crushing/grinding etc imports by country | 2024
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: 2024 gross machinery imports provide the purchasing-index input: U.S. HS xx.xx imports were USD xx.xx. These are broad machinery purchases, not ultrafine mill sales.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: 2024 gross machinery imports provide the purchasing-index input: U.S. HS xx.xx imports were USD xx.xx. These are broad machinery purchases, not ultrafine mill sales.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Country observations include Brazil USD xx.xx and Argentina USD xx.xx under HS xx.xx supporting the regional model's purchasing inputs.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country observations include Brazil USD xx.xx and Argentina USD xx.xx under HS xx.xx supporting the regional model's purchasing inputs.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: HS xx.xx imports include Germany USD xx.xx and France USD xx.xx; individual country records, rather than the EU aggregate, enter the allocation.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: HS xx.xx imports include Germany USD xx.xx and France USD xx.xx; individual country records, rather than the EU aggregate, enter the allocation.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Turkey USD xx.xx and Saudi Arabia USD xx.xx are broad machinery purchasing inputs, not observed qualifying-market numerators.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Turkey USD xx.xx and Saudi Arabia USD xx.xx are broad machinery purchasing inputs, not observed qualifying-market numerators.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: South Africa USD xx.xx and Egypt USD xx.xx, together with additional African reporters, anchor the purchasing baskets.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: South Africa USD xx.xx and Egypt USD xx.xx, together with additional African reporters, anchor the purchasing baskets.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: China USD xx.xx, Indonesia USD xx.xx and Japan USD xx.xx anchor the regional purchasing index before explicit local-supply adjustments.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: China USD xx.xx, Indonesia USD xx.xx and Japan USD xx.xx anchor the regional purchasing index before explicit local-supply adjustments.

6. Crushing/grinding machines for earth/ stone/ore imports by country | 2024
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: 2024 mineral crushing/grinding imports supply the secondary purchasing-index input; they contain out-of-scope ordinary crushers and are not treated as qualifying market revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: 2024 mineral crushing/grinding imports supply the secondary purchasing-index input; they contain out-of-scope ordinary crushers and are not treated as qualifying market revenue.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Country-level mineral machinery import observations support the Latin American purchasing basket and its explicitly modeled mining/package adjustments.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country-level mineral machinery import observations support the Latin American purchasing basket and its explicitly modeled mining/package adjustments.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: European national import observations provide the mineral-machinery component of the common purchasing index; the regional aggregate is not an extra country.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: European national import observations provide the mineral-machinery component of the common purchasing index; the regional aggregate is not an extra country.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Saudi Arabia and Turkey have separately reported mineral machinery imports, supporting national rather than bloc-wide purchasing inputs.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Saudi Arabia and Turkey have separately reported mineral machinery imports, supporting national rather than bloc-wide purchasing inputs.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: African reporter observations include major destinations outside the mandatory-country inventory, constraining a substantial noncatalog demand pool.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: African reporter observations include major destinations outside the mandatory-country inventory, constraining a substantial noncatalog demand pool.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Asia-Pacific and Central Asian reporter observations anchor the mineral-machinery component and unlisted-destination basket.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Asia-Pacific and Central Asian reporter observations anchor the mineral-machinery component and unlisted-destination basket.
7. Mach for mixing/kneading/crushing/grinding etc imports by country | 2021
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports were USD xx.xx. The model applies a qualified timing/access bridge and does not describe this as current trade.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports were USD xx.xx. The model applies a qualified timing/access bridge and does not describe this as current trade.
8. Crushing/grinding machines for earth/ stone/ore imports by country | 2021
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports of USD xx.xx provide the second historical purchasing primitive; the 2025 and 2032 allocations remain modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports of USD xx.xx provide the second historical purchasing primitive; the 2025 and 2032 allocations remain modeled.

9. World Manufacturing Production and Trade, Quarter IV 2025
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The report's mixed North American manufacturing conditions constrain a uniform high-growth assumption; output is not equated with mill purchasing.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Recent Latin American manufacturing weakness is counterevidence to immediate region-wide acceleration; forecast equipment factors remain conditional.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: European manufacturing stagnation and national divergence constrain the assumed relative equipment-purchasing path.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country-level manufacturing heterogeneity constrains the forecast; no single regional output rate is converted into machinery demand.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: African output observations include national counterexamples, supporting differentiated rather than uniform purchasing assumptions.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: China and other Asian manufacturing expansion, with national exceptions, provides directional context rather than an observed ultrafine-equipment growth rate.
10. Business Unit Grinding & Dispersing - NETZSCH
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The supplier documents local grinding-equipment production and commercial operations in Germany, the United States, Brazil, Russia, India and China. This supports considering domestic supply omitted by import statistics, but does not measure the model's correction factors.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The supplier documents local grinding-equipment production and commercial operations in Germany, the United States, Brazil, Russia, India and China. This supports considering domestic supply omitted by import statistics, but does not measure the model's correction factors.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Documented local commercial supply in China and India qualifies an import-only purchasing model; manufacturing location is not itself counted as buyer demand.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Documented local commercial supply in China and India qualifies an import-only purchasing model; manufacturing location is not itself counted as buyer demand.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Documented U.S. production and local commercial operations support an explicit, uncertain domestic-supply bridge rather than treating imports as the entire numerator.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Documented U.S. production and local commercial operations support an explicit, uncertain domestic-supply bridge rather than treating imports as the entire numerator.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Brazilian local production and commercial operations qualify reliance on imports alone, without establishing the assumed domestic sales amount.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Brazilian local production and commercial operations qualify reliance on imports alone, without establishing the assumed domestic sales amount.
11. High Energy Planetary Ball Mill - IIT Bombay
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The 2024 solicitation concerns one mill and requires two registration stages. It supports a purchaser-specific access constraint, not an award, national procurement conversion rate or forecast revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The 2024 solicitation concerns one mill and requires two registration stages. It supports a purchaser-specific access constraint, not an award, national procurement conversion rate or forecast revenue.

12. Metso receives order for grinding mills to a copper project in Africa
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The EUR xx.xx August 2024 HIGmill equipment/auxiliary/services order establishes a commercial package in Africa but identifies neither country nor annual revenue recognition. It constrains attribution and is not added to 2025 demand.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The EUR xx.xx August 2024 HIGmill equipment/auxiliary/services order establishes a commercial package in Africa but identifies neither country nor annual revenue recognition. It constrains attribution and is not added to 2025 demand.
13. Methodology - UNIDO Industrial Analytics Platform
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The methodology notes that U.S. trade coverage includes Puerto Rico, reinforcing that the national purchasing proxy must not be renormalized to the xx.xx-state inventory.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The methodology notes that U.S. trade coverage includes Puerto Rico, reinforcing that the national purchasing proxy must not be renormalized to the xx.xx-state inventory.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The methodology identifies Monaco within French trade coverage; the customs input is an imperfect national demand proxy rather than a directly observed country numerator.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The methodology identifies Monaco within French trade coverage; the customs input is an imperfect national demand proxy rather than a directly observed country numerator.
14. Bangko Sentral ng Pilipinas - Balance of Payments Report, Q4 2024
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The central bank reports a 2024 average of PHP xx.xx per USD. Dividing the failed PHP xx.xx procurement budget by this rate gives an approximately USD xx.xx comparison ceiling, not realized equipment revenue. ([bsp.gov.ph](https://www.bsp.gov.ph/Media_And_Research/Balance%20of%20Payments%20Report/2024/BOP_4qtr2024.pdf))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The central bank reports a 2024 average of PHP xx.xx per USD. Dividing the failed PHP xx.xx procurement budget by this rate gives an approximately USD xx.xx comparison ceiling, not realized equipment revenue. ([bsp.gov.ph](https://www.bsp.gov.ph/Media_And_Research/Balance%20of%20Payments%20Report/2024/BOP_4qtr2024.pdf))

8.6. Wet-Jet Mills

Table 52. Global Ultra Fine Grinding Mill Market Size, by Wet-Jet Mills, by Region, 2017-2040 (USD Million)

Region	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Africa	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Asia-Pacific	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Europe	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Latin America	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Middle East	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
North America	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 53. Global Ultra Fine Grinding Mill Market Size, by Wet-Jet Mills, by Group, 2017-2040 (USD Million)

Group	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
ASEAN	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
BRICS	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
European Union	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
G7	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
GCC	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
NATO	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx

Table 54. Global Ultra Fine Grinding Mill Market Size, by Wet-Jet Mills, by Country, 2017-2040 (USD Million)

Country	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Australia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Brazil	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Canada	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
China	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
France	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Germany	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
India	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Italy	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Japan	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mexico	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Russia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
South Korea	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Spain	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United Kingdom	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United States	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Others	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Sources & Evidence

1. Hollow particles, process for producing the hollow particles, and use of the hollow particles - EP 2657274 B1

   · Taxonomy evidence: The published patent's equipment-category passage identifies wet-jet mill apparatus separately from stirring and ultrasonic homogenizers and names supplied wet-jet instruments. This supports historical commercial-category recognition, not present sales or every instrument's market eligibility. ([data.epo.org](https://data.epo.org/publication-server/rest/v1.xx.xx/publication-dates/xx.xx/patents/EP2657274NWB1/document.pdf))

2. STAR BURST: Wet Pulverization and Dispersion Device
   - Taxonomy evidence: The manufacturer's inspected catalog identifies STAR BURST as a media-free wet-jet milling device with pulverization among its functions and commercially offered fine-particle equipment models. This establishes a marketed named platform, not a universal performance guarantee or eligibility for droplet-only applications.
   ([sugino.com](https://www.sugino.com/en/products/wet-type-atomization-equipment/))
3. Mach for mixing/kneading/crushing/grinding etc imports by country | 2024
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: 2024 gross machinery imports provide the purchasing-index input: U.S. HS xx.xx imports were USD xx.xx. These are broad machinery purchases, not ultrafine mill sales.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: 2024 gross machinery imports provide the purchasing-index input: U.S. HS xx.xx imports were USD xx.xx. These are broad machinery purchases, not ultrafine mill sales.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Country observations include Brazil USD xx.xx and Argentina USD xx.xx under HS xx.xx supporting the regional model's purchasing inputs.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country observations include Brazil USD xx.xx and Argentina USD xx.xx under HS xx.xx supporting the regional model's purchasing inputs.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: HS xx.xx imports include Germany USD xx.xx and France USD xx.xx; individual country records, rather than the EU aggregate, enter the allocation.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: HS xx.xx imports include Germany USD xx.xx and France USD xx.xx; individual country records, rather than the EU aggregate, enter the allocation.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Turkey USD xx.xx and Saudi Arabia USD xx.xx are broad machinery purchasing inputs, not observed qualifying-market numerators.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Turkey USD xx.xx and Saudi Arabia USD xx.xx are broad machinery purchasing inputs, not observed qualifying-market numerators.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: South Africa USD xx.xx and Egypt USD xx.xx, together with additional African reporters, anchor the purchasing baskets.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: South Africa USD xx.xx and Egypt USD xx.xx, together with additional African reporters, anchor the purchasing baskets.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: China USD xx.xx, Indonesia USD xx.xx and Japan USD xx.xx anchor the regional purchasing index before explicit local-supply adjustments.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: China USD xx.xx, Indonesia USD xx.xx and Japan USD xx.xx anchor the regional purchasing index before explicit local-supply adjustments.

4. Crushing/grinding machines for earth/ stone/ore imports by country | 2024
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: 2024 mineral crushing/grinding imports supply the secondary purchasing-index input; they contain out-of-scope ordinary crushers and are not treated as qualifying market revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: 2024 mineral crushing/grinding imports supply the secondary purchasing-index input; they contain out-of-scope ordinary crushers and are not treated as qualifying market revenue.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Country-level mineral machinery import observations support the Latin American purchasing basket and its explicitly modeled mining/package adjustments.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country-level mineral machinery import observations support the Latin American purchasing basket and its explicitly modeled mining/package adjustments.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: European national import observations provide the mineral-machinery component of the common purchasing index; the regional aggregate is not an extra country.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: European national import observations provide the mineral-machinery component of the common purchasing index; the regional aggregate is not an extra country.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Saudi Arabia and Turkey have separately reported mineral machinery imports, supporting national rather than bloc-wide purchasing inputs.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Saudi Arabia and Turkey have separately reported mineral machinery imports, supporting national rather than bloc-wide purchasing inputs.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: African reporter observations include major destinations outside the mandatory-country inventory, constraining a substantial noncatalog demand pool.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: African reporter observations include major destinations outside the mandatory-country inventory, constraining a substantial noncatalog demand pool.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Asia-Pacific and Central Asian reporter observations anchor the mineral-machinery component and unlisted-destination basket.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Asia-Pacific and Central Asian reporter observations anchor the mineral-machinery component and unlisted-destination basket.
5. Mach for mixing/kneading/crushing/grinding etc imports by country | 2021
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports were USD xx.xx. The model applies a qualified timing/access bridge and does not describe this as current trade.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports were USD xx.xx. The model applies a qualified timing/access bridge and does not describe this as current trade.
6. Crushing/grinding machines for earth/ stone/ore imports by country | 2021
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports of USD xx.xx provide the second historical purchasing primitive; the 2025 and 2032 allocations remain modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports of USD xx.xx provide the second historical purchasing primitive; the 2025 and 2032 allocations remain modeled.

7. World Manufacturing Production and Trade, Quarter IV 2025
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The report's mixed North American manufacturing conditions constrain a uniform high-growth assumption; output is not equated with mill purchasing.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Recent Latin American manufacturing weakness is counterevidence to immediate region-wide acceleration; forecast equipment factors remain conditional.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: European manufacturing stagnation and national divergence constrain the assumed relative equipment-purchasing path.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country-level manufacturing heterogeneity constrains the forecast; no single regional output rate is converted into machinery demand.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: African output observations include national counterexamples, supporting differentiated rather than uniform purchasing assumptions.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: China and other Asian manufacturing expansion, with national exceptions, provides directional context rather than an observed ultrafine-equipment growth rate.
8. Business Unit Grinding & Dispersing - NETZSCH
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The supplier documents local grinding-equipment production and commercial operations in Germany, the United States, Brazil, Russia, India and China. This supports considering domestic supply omitted by import statistics, but does not measure the model's correction factors.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The supplier documents local grinding-equipment production and commercial operations in Germany, the United States, Brazil, Russia, India and China. This supports considering domestic supply omitted by import statistics, but does not measure the model's correction factors.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Documented local commercial supply in China and India qualifies an import-only purchasing model; manufacturing location is not itself counted as buyer demand.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Documented local commercial supply in China and India qualifies an import-only purchasing model; manufacturing location is not itself counted as buyer demand.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Documented U.S. production and local commercial operations support an explicit, uncertain domestic-supply bridge rather than treating imports as the entire numerator.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Documented U.S. production and local commercial operations support an explicit, uncertain domestic-supply bridge rather than treating imports as the entire numerator.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Brazilian local production and commercial operations qualify reliance on imports alone, without establishing the assumed domestic sales amount.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Brazilian local production and commercial operations qualify reliance on imports alone, without establishing the assumed domestic sales amount.
9. High Energy Planetary Ball Mill - IIT Bombay
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The 2024 solicitation concerns one mill and requires two registration stages. It supports a purchaser-specific access constraint, not an award, national procurement conversion rate or forecast revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The 2024 solicitation concerns one mill and requires two registration stages. It supports a purchaser-specific access constraint, not an award, national procurement conversion rate or forecast revenue.

10. Metso receives order for grinding mills to a copper project in Africa
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The EUR xx.xx August 2024 HIGmill equipment/auxiliary/services order establishes a commercial package in Africa but identifies neither country nor annual revenue recognition. It constrains attribution and is not added to 2025 demand.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The EUR xx.xx August 2024 HIGmill equipment/auxiliary/services order establishes a commercial package in Africa but identifies neither country nor annual revenue recognition. It constrains attribution and is not added to 2025 demand.
11. Methodology - UNIDO Industrial Analytics Platform
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The methodology notes that U.S. trade coverage includes Puerto Rico, reinforcing that the national purchasing proxy must not be renormalized to the xx.xx-state inventory.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The methodology notes that U.S. trade coverage includes Puerto Rico, reinforcing that the national purchasing proxy must not be renormalized to the xx.xx-state inventory.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The methodology identifies Monaco within French trade coverage; the customs input is an imperfect national demand proxy rather than a directly observed country numerator.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The methodology identifies Monaco within French trade coverage; the customs input is an imperfect national demand proxy rather than a directly observed country numerator.
12. Wet Milling and Dispersing Device - Star Burst - Sugino Corp.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: SUGINO's Star Burst portfolio identifies wet-jet equipment across research and production purchasing contexts. Only milling-attributable supply is included; adjacent droplet-only or dispersion activity is not automatically counted. ([suginocorp.com](https://www.suginocorp.com/star-burst/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: SUGINO's Star Burst portfolio identifies wet-jet equipment across research and production purchasing contexts. Only milling-attributable supply is included; adjacent droplet-only or dispersion activity is not automatically counted. ([suginocorp.com](https://www.suginocorp.com/star-burst/))

8.7. Cutting Mills

Table 55. Global Ultra Fine Grinding Mill Market Size, by Cutting Mills, by Region, 2017-2040 (USD Million)

Region	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Africa	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Asia-Pacific	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Europe	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Latin America	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Middle East	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
North America	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 56. Global Ultra Fine Grinding Mill Market Size, by Cutting Mills, by Group, 2017-2040 (USD Million)

Group	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
ASEAN	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
BRICS	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
European Union	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
G7	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
GCC	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
NATO	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx

Table 57. Global Ultra Fine Grinding Mill Market Size, by Cutting Mills, by Country, 2017-2040 (USD Million)

Country	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Australia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Brazil	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Canada	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
China	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
France	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Germany	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
India	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Italy	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Japan	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mexico	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Russia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
South Korea	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Spain	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United Kingdom	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United States	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Others	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Sources & Evidence

1. Process Plant and Equipment - Product directory
   - Taxonomy evidence: Cutter mills are listed; ultrafine-specific qualification requires additional evidence.

2. SecoMy® S Fine Cutting Mill

   · Taxonomy evidence: The inspected SecoMy S product page identifies a dedicated fine-cutting platform with an integrated classifier and expressly advertises ultrafine grinding. It supports this supplier's qualifying commercial terminology, while leaving cross-industry fineness comparability unresolved. ([grinding.netzsch.com](https://grinding.netzsch.com/en/products-and-solutions/dry-grinding/seco-my-s-fine-cutting-mill/))

3. Mach for mixing/kneading/crushing/grinding etc imports by country | 2024

   · Evidence informing base-year allocation inputs; displayed values and growth are calculated: 2024 gross machinery imports provide the purchasing-index input: U.S. HS xx.xx imports were USD xx.xx. These are broad machinery purchases, not ultrafine mill sales.

   · Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: 2024 gross machinery imports provide the purchasing-index input: U.S. HS xx.xx imports were USD xx.xx. These are broad machinery purchases, not ultrafine mill sales.

   · Evidence informing base-year allocation inputs; displayed values and growth are calculated: Country observations include Brazil USD xx.xx and Argentina USD xx.xx under HS xx.xx supporting the regional model's purchasing inputs.

   · Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country observations include Brazil USD xx.xx and Argentina USD xx.xx under HS xx.xx supporting the regional model's purchasing inputs.

   · Evidence informing base-year allocation inputs; displayed values and growth are calculated: HS xx.xx imports include Germany USD xx.xx and France USD xx.xx; individual country records, rather than the EU aggregate, enter the allocation.

   · Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: HS xx.xx imports include Germany USD xx.xx and France USD xx.xx; individual country records, rather than the EU aggregate, enter the allocation.

   · Evidence informing base-year allocation inputs; displayed values and growth are calculated: Turkey USD xx.xx and Saudi Arabia USD xx.xx are broad machinery purchasing inputs, not observed qualifying-market numerators.

   · Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Turkey USD xx.xx and Saudi Arabia USD xx.xx are broad machinery purchasing inputs, not observed qualifying-market numerators.

   · Evidence informing base-year allocation inputs; displayed values and growth are calculated: South Africa USD xx.xx and Egypt USD xx.xx, together with additional African reporters, anchor the purchasing baskets.

   · Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: South Africa USD xx.xx and Egypt USD xx.xx, together with additional African reporters, anchor the purchasing baskets.

   · Evidence informing base-year allocation inputs; displayed values and growth are calculated: China USD xx.xx, Indonesia USD xx.xx and Japan USD xx.xx anchor the regional purchasing index before explicit local-supply adjustments.

   · Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: China USD xx.xx, Indonesia USD xx.xx and Japan USD xx.xx anchor the regional purchasing index before explicit local-supply adjustments.

4. Crushing/grinding machines for earth/ stone/ore imports by country | 2024
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: 2024 mineral crushing/grinding imports supply the secondary purchasing-index input; they contain out-of-scope ordinary crushers and are not treated as qualifying market revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: 2024 mineral crushing/grinding imports supply the secondary purchasing-index input; they contain out-of-scope ordinary crushers and are not treated as qualifying market revenue.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Country-level mineral machinery import observations support the Latin American purchasing basket and its explicitly modeled mining/package adjustments.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country-level mineral machinery import observations support the Latin American purchasing basket and its explicitly modeled mining/package adjustments.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: European national import observations provide the mineral-machinery component of the common purchasing index; the regional aggregate is not an extra country.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: European national import observations provide the mineral-machinery component of the common purchasing index; the regional aggregate is not an extra country.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Saudi Arabia and Turkey have separately reported mineral machinery imports, supporting national rather than bloc-wide purchasing inputs.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Saudi Arabia and Turkey have separately reported mineral machinery imports, supporting national rather than bloc-wide purchasing inputs.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: African reporter observations include major destinations outside the mandatory-country inventory, constraining a substantial noncatalog demand pool.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: African reporter observations include major destinations outside the mandatory-country inventory, constraining a substantial noncatalog demand pool.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Asia-Pacific and Central Asian reporter observations anchor the mineral-machinery component and unlisted-destination basket.
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   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports were USD xx.xx. The model applies a qualified timing/access bridge and does not describe this as current trade.
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6. Crushing/grinding machines for earth/ stone/ore imports by country | 2021
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports of USD xx.xx provide the second historical purchasing primitive; the 2025 and 2032 allocations remain modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports of USD xx.xx provide the second historical purchasing primitive; the 2025 and 2032 allocations remain modeled.

7. World Manufacturing Production and Trade, Quarter IV 2025
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The report's mixed North American manufacturing conditions constrain a uniform high-growth assumption; output is not equated with mill purchasing.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Recent Latin American manufacturing weakness is counterevidence to immediate region-wide acceleration; forecast equipment factors remain conditional.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: European manufacturing stagnation and national divergence constrain the assumed relative equipment-purchasing path.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country-level manufacturing heterogeneity constrains the forecast; no single regional output rate is converted into machinery demand.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: African output observations include national counterexamples, supporting differentiated rather than uniform purchasing assumptions.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: China and other Asian manufacturing expansion, with national exceptions, provides directional context rather than an observed ultrafine-equipment growth rate.
8. Business Unit Grinding & Dispersing - NETZSCH
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The supplier documents local grinding-equipment production and commercial operations in Germany, the United States, Brazil, Russia, India and China. This supports considering domestic supply omitted by import statistics, but does not measure the model's correction factors.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The supplier documents local grinding-equipment production and commercial operations in Germany, the United States, Brazil, Russia, India and China. This supports considering domestic supply omitted by import statistics, but does not measure the model's correction factors.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Documented local commercial supply in China and India qualifies an import-only purchasing model; manufacturing location is not itself counted as buyer demand.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Documented local commercial supply in China and India qualifies an import-only purchasing model; manufacturing location is not itself counted as buyer demand.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Documented U.S. production and local commercial operations support an explicit, uncertain domestic-supply bridge rather than treating imports as the entire numerator.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Documented U.S. production and local commercial operations support an explicit, uncertain domestic-supply bridge rather than treating imports as the entire numerator.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Brazilian local production and commercial operations qualify reliance on imports alone, without establishing the assumed domestic sales amount.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Brazilian local production and commercial operations qualify reliance on imports alone, without establishing the assumed domestic sales amount.
9. High Energy Planetary Ball Mill - IIT Bombay
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The 2024 solicitation concerns one mill and requires two registration stages. It supports a purchaser-specific access constraint, not an award, national procurement conversion rate or forecast revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The 2024 solicitation concerns one mill and requires two registration stages. It supports a purchaser-specific access constraint, not an award, national procurement conversion rate or forecast revenue.

10. Metso receives order for grinding mills to a copper project in Africa
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The EUR xx.xx August 2024 HIGmill equipment/auxiliary/services order establishes a commercial package in Africa but identifies neither country nor annual revenue recognition. It constrains attribution and is not added to 2025 demand.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The EUR xx.xx August 2024 HIGmill equipment/auxiliary/services order establishes a commercial package in Africa but identifies neither country nor annual revenue recognition. It constrains attribution and is not added to 2025 demand.
11. Methodology - UNIDO Industrial Analytics Platform
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The methodology notes that U.S. trade coverage includes Puerto Rico, reinforcing that the national purchasing proxy must not be renormalized to the xx.xx-state inventory.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The methodology notes that U.S. trade coverage includes Puerto Rico, reinforcing that the national purchasing proxy must not be renormalized to the xx.xx-state inventory.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The methodology identifies Monaco within French trade coverage; the customs input is an imperfect national demand proxy rather than a directly observed country numerator.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The methodology identifies Monaco within French trade coverage; the customs input is an imperfect national demand proxy rather than a directly observed country numerator.
12. Fine-cutting mill with rotating classifying feature - the sensational new development!
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The September xx.xx 2014 own-product announcement establishes a pre-base-year SecoMy S cutting offering described for ultrafine commercial applications. It is category evidence, not annual equipment revenue. ([grinding.netzsch.com](https://grinding.netzsch.com/en/news/2014/fine-cutting-mill-with-rotating-classifying-feature-the-sensational-new-development))
13. NETZSCH SecoMy S - Precision Cutting Redefined!
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The August 2026 SecoMy S brochure confirms continuing commercial ultrafine-cutting positioning and system-supply availability. It supports category persistence, not the assumed forecast spending share. ([grinding.netzsch.com](https://grinding.netzsch.com/_Resources/Persistent/xx.xx/e/xx.xx/b/8e4b5adcfc16fcc2d83974f8080d614cce1a2c01/NETZSCH_Fine_Cutting_Mill_SecoMy_S_e.pdf))

9. Ultra Fine Grinding Mill Market, by Processed Material

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Inorganic Chemicals, Ceramics, and Glass; Metals and Alloys; and Organic Chemicals should not be collapsed into a general chemicals capability. Nippon Coke & Engineering's commission-processing portfolio names glass, ceramics, organic and inorganic pigments, and metal powders, while Hosokawa's AFG application list includes metal alloys. ■■■■■ ■■■ ■■■■■■■■ ■■■■■■■■■■ ■■■■■■■■■■■ ■■■ ■■■■■■■■■ ■■■■■■■■ ■■ ■■■■ ■■■■■■■■ ■■■■■■■■ ■■■■■■■■■■■■ ■■■■■■■■■ ■■■■ ■■ ■■■■■■■■■■ ■■■■■■■■■■■■■ ■■■■■■ ■■ ■■■■■■■■■ ■■■■■■■■■■■■■■ ■■■■■■■■■■■■■■ ■■■ ■■■■■■■■■■■■■■■ ■■■■■■■■■■ ■■■■■■■■■■ ■■■■■■■■■■■■■■■■■ ■■■■■■■■ ■■ ■■■■ ■■■■■■ ■■■■ ■■ ■■■■■■■■■■■■ ■■■■■■■■■■■■ ■■■■■■■

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Figure 12. Global Ultra Fine Grinding Mill Market Size, by Processed Material, 2025 (%)

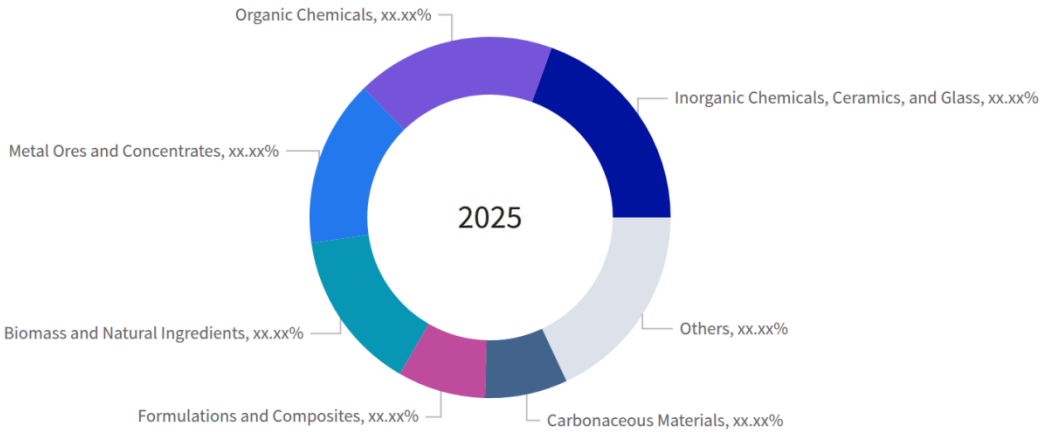


Figure 13. Global Ultra Fine Grinding Mill Market, by Processed Material, 2032 (USD Million)

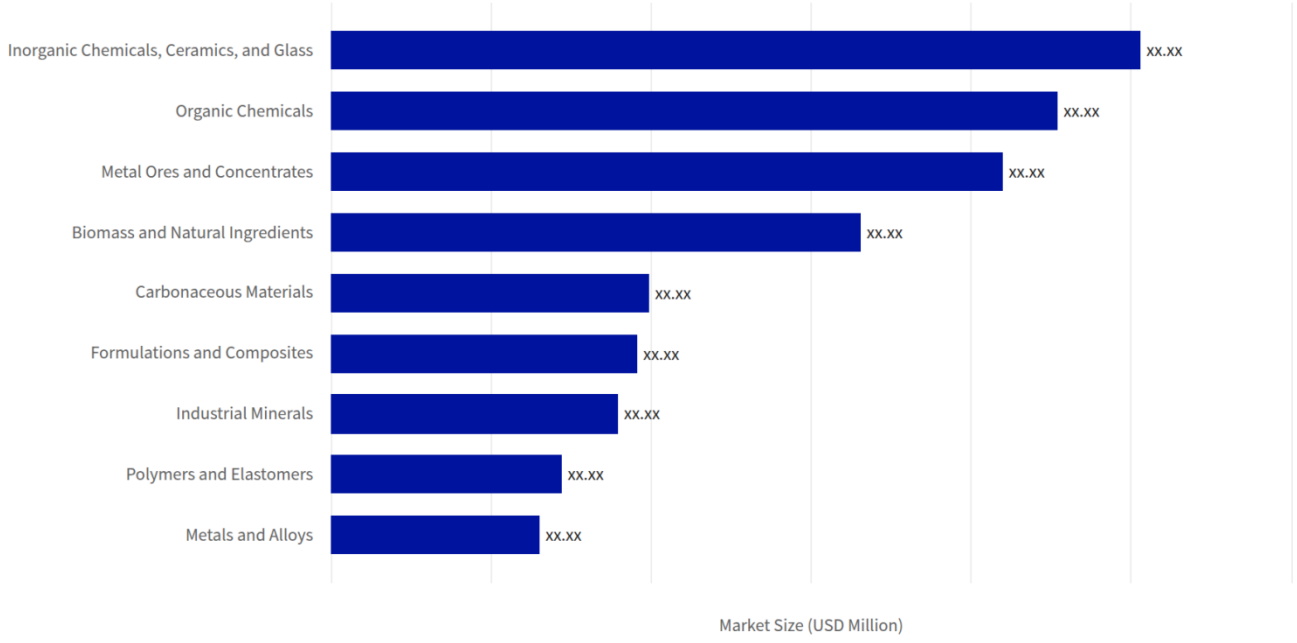


Table 58. Global Ultra Fine Grinding Mill Market, by Processed Material growth contribution, 2025-2032

Category	2025 value (USD Million)	2032 value (USD Million)	Added value (USD Million)	2025 share (%)	2032 share (%)	Change (pp)	Growth share (%)	CAGR (%)
Biomass and Natural Ingredients	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Carbonaceous Materials	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Formulations and Composites	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Industrial Minerals	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Inorganic Chemicals, Ceramics, and Glass	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Metal Ores and Concentrates	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Metals and Alloys	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Organic Chemicals	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Polymers and Elastomers	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Scope total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 59. Global Ultra Fine Grinding Mill Market Size, by Processed Material, 2017-2040 (USD Million)

Processed Material	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Biomass and Natural Ingredients	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Carbonaceous Materials	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Formulations and Composites	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Industrial Minerals	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Inorganic Chemicals, Ceramics, and Glass	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Metal Ores and Concentrates	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Metals and Alloys	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Organic Chemicals	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Polymers and Elastomers	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Sources & Evidence

1. AFG Fluidised Bed Jet Mill

· The AFG application list includes metal alloys. This is a supplier's stated application coverage, not universal capability across Metals and Alloys. ([hosokawa-alpine.com](https://www.hosokawa-alpine.com/powder-particle-processing/technologies/grinding-and-classifying/jet-mills/afg/))

2. Metso Receives Order for Grinding Mills to a Copper Project in Africa

· Metso announced an African copper-project order on August xx.xx 2024, covering HIGmill equipment, auxiliaries, and services. This is an ore-related purchase reference, not completed-delivery evidence. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The copper-project award establishes an ore/concentrate commercial purchasing context.

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The copper-project award establishes an ore/concentrate commercial purchasing context.

3. Customised system planning from Hosokawa Alpine

· The account identifies Nobelmin's MinTalc as an ultra-fine talc product, providing a named industrial-mineral business context rather than an ore-processing reference. ([hosokawa-alpine.com](https://www.hosokawa-alpine.com/powder-particle-processing/customer-stories/customised-system-planning-from-hosokawa-alpine/))

4. Commission Processing - NIPPON COKE & ENGINEERING CO., LTD.

· Nippon's commission-processing portfolio names glass, ceramics, organic and inorganic pigments, metal powders, carbon, thermosetting resin, and ink-related grinding. It does not resolve every formulation-versus-constituent purchasing duty. ([nc-kakouki.co.jp](https://www.nc-kakouki.co.jp/en/chemical/jutaku/))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Own commercial processing portfolio identifies glass, ceramics and inorganic materials; establishes material mapping, not equipment revenue.

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own commercial processing portfolio identifies glass, ceramics and inorganic materials; establishes material mapping, not equipment revenue.

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Organic pigments are named commercial processing materials.

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Organic pigments are named commercial processing materials.

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Metal powders are named commercial processing materials.

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Metal powders are named commercial processing materials.

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Carbon is identified in the operator's commercial grinding portfolio.

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Carbon is identified in the operator's commercial grinding portfolio.

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Thermosetting resin supports a polymer-material category premise.

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Thermosetting resin supports a polymer-material category premise.

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Ink-related grinding establishes a commercial reference but does not resolve whole-formulation versus constituent duty.

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Ink-related grinding establishes a commercial reference but does not resolve whole-formulation versus constituent duty.

5. Manufacturing Capabilities - Asbury Advanced Materials
   - Asbury advertises fine grinding, micronization, carbon-material processing, toll processing, and custom dispersions. The portfolio does not establish that every custom formulation is jointly milled as a whole. ([asbury.com](https://www.asbury.com/services/manufacturing-capabilities/))
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Own manufacturing disclosure identifies carbon-material grinding and micronization; supports the material-duty premise only.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own manufacturing disclosure identifies carbon-material grinding and micronization; supports the material-duty premise only.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Custom formulations and dispersions are commercial outputs, but joint whole-formulation milling remains unmeasured.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Custom formulations and dispersions are commercial outputs, but joint whole-formulation milling remains unmeasured.
6. Micronization / Grinding - A. Ebbecke Verfahrenstechnik AG
   - Ebbecke identifies plastic granulates and natural materials within its contract-grinding business and advertises confidentiality, documentation, logistics, and customs support. Only commercial roles and commitments are used. ([ebbecke-verfahrenstechnik.de](https://www.ebbecke-verfahrenstechnik.de/en/services/micronization-grinding/))
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Commercial contract-grinding coverage includes natural materials and food ingredients; processing fees are excluded from equipment value.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Commercial contract-grinding coverage includes natural materials and food ingredients; processing fees are excluded from equipment value.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Plastic granulates and resins establish material coverage, not downstream customers' equipment ownership.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Plastic granulates and resins establish material coverage, not downstream customers' equipment ownership.
7. TyreXol Rubber Powder - Recycled Tyre Rubber - TRS & Polymers
   - TRS & Polymers markets TyreXol tire-derived rubber powder. Its material offering does not establish that downstream customers purchase the milling equipment. ([trspolymers.com](https://trspolymers.com/product/tyrexol-rubber-powder/))
8. Stirred media mills in the mining industry: Material grindability, energy-size relationships, and operating conditions
   - Taxonomy evidence: The academic review distinguishes ultrafine grinding for mineral liberation from industrial-mineral grinding for functional material properties, supporting separate ore and industrial-mineral families. ([fiberlean.com](https://fiberlean.com/wp-content/uploads/2025/xx.xx/POWTEC-D-xx.xx-00094R13postprintmanuscript.pdf))
9. Hosokawa Micron - FY2025 Financial Results Presentation, November 25, 2025 (Japanese)
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; material attribution modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; material attribution modeled.

10. Pyrum Innovations AG - Interim Group Report January 1 to June 30, 2025
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The purchaser's 2025 report records a grinding-plant installation associated with recovered carbon black; no downstream material revenue is counted.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The purchaser's 2025 report records a grinding-plant installation associated with recovered carbon black; no downstream material revenue is counted.
11. LG Energy Solution Releases 2025 Financial Results - January 29, 2026
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own 2025 revenue decline and dated 2026 capital-expenditure reduction target constrain battery-related equipment-adoption assumptions.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Existing-asset reuse strategy qualifies a direct downstream-demand-to-new-carbon-material-mill investment inference.

9.1. Inorganic Chemicals, Ceramics, and Glass

Table 60. Global Ultra Fine Grinding Mill Market Size, by Inorganic Chemicals, Ceramics, and Glass, by Region, 2017-2040 (USD Million)

Region	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Africa	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Asia-Pacific	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Europe	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Latin America	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Middle East	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
North America	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 61. Global Ultra Fine Grinding Mill Market Size, by Inorganic Chemicals, Ceramics, and Glass, by Group, 2017-2040 (USD Million)

Group	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
ASEAN	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
BRICS	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
European Union	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
G7	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
GCC	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
NATO	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx

Table 62. Global Ultra Fine Grinding Mill Market Size, by Inorganic Chemicals, Ceramics, and Glass, by Country, 2017-2040 (USD Million)

Country	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Australia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Brazil	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Canada	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
China	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
France	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Germany	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
India	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Italy	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Japan	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mexico	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Russia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
South Korea	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Spain	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United Kingdom	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United States	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Others	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Sources & Evidence

1. UNSD Classification Detail - ISIC Rev.4, Division 20: Chemicals and Chemical Products
   - Taxonomy evidence: The division expressly recognizes inorganic raw materials; the proposed material family is an analytical adaptation rather than an ISIC product category.
2. Nippon Coke & Engineering - Commission Processing
   - Taxonomy evidence: The company's own commission-processing business documents ultrafine grinding of ceramic and glass materials and lists inorganic compounds among handled grinding materials. ([nc-kakouki.co.jp](https://www.nc-kakouki.co.jp/en/chemical/jutaku/))
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Own commercial processing portfolio identifies glass, ceramics and inorganic materials; establishes material mapping, not equipment revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own commercial processing portfolio identifies glass, ceramics and inorganic materials; establishes material mapping, not equipment revenue.

3. Mach for mixing/kneading/crushing/grinding etc imports by country | 2024
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: 2024 gross machinery imports provide the purchasing-index input: U.S. HS xx.xx imports were USD xx.xx. These are broad machinery purchases, not ultrafine mill sales.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: 2024 gross machinery imports provide the purchasing-index input: U.S. HS xx.xx imports were USD xx.xx. These are broad machinery purchases, not ultrafine mill sales.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Country observations include Brazil USD xx.xx and Argentina USD xx.xx under HS xx.xx supporting the regional model's purchasing inputs.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country observations include Brazil USD xx.xx and Argentina USD xx.xx under HS xx.xx supporting the regional model's purchasing inputs.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: HS xx.xx imports include Germany USD xx.xx and France USD xx.xx; individual country records, rather than the EU aggregate, enter the allocation.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: HS xx.xx imports include Germany USD xx.xx and France USD xx.xx; individual country records, rather than the EU aggregate, enter the allocation.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Turkey USD xx.xx and Saudi Arabia USD xx.xx are broad machinery purchasing inputs, not observed qualifying-market numerators.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Turkey USD xx.xx and Saudi Arabia USD xx.xx are broad machinery purchasing inputs, not observed qualifying-market numerators.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: South Africa USD xx.xx and Egypt USD xx.xx, together with additional African reporters, anchor the purchasing baskets.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: South Africa USD xx.xx and Egypt USD xx.xx, together with additional African reporters, anchor the purchasing baskets.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: China USD xx.xx, Indonesia USD xx.xx and Japan USD xx.xx anchor the regional purchasing index before explicit local-supply adjustments.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: China USD xx.xx, Indonesia USD xx.xx and Japan USD xx.xx anchor the regional purchasing index before explicit local-supply adjustments.

4. Crushing/grinding machines for earth/ stone/ore imports by country | 2024
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: 2024 mineral crushing/grinding imports supply the secondary purchasing-index input; they contain out-of-scope ordinary crushers and are not treated as qualifying market revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: 2024 mineral crushing/grinding imports supply the secondary purchasing-index input; they contain out-of-scope ordinary crushers and are not treated as qualifying market revenue.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Country-level mineral machinery import observations support the Latin American purchasing basket and its explicitly modeled mining/package adjustments.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country-level mineral machinery import observations support the Latin American purchasing basket and its explicitly modeled mining/package adjustments.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: European national import observations provide the mineral-machinery component of the common purchasing index; the regional aggregate is not an extra country.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: European national import observations provide the mineral-machinery component of the common purchasing index; the regional aggregate is not an extra country.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Saudi Arabia and Turkey have separately reported mineral machinery imports, supporting national rather than bloc-wide purchasing inputs.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Saudi Arabia and Turkey have separately reported mineral machinery imports, supporting national rather than bloc-wide purchasing inputs.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: African reporter observations include major destinations outside the mandatory-country inventory, constraining a substantial noncatalog demand pool.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: African reporter observations include major destinations outside the mandatory-country inventory, constraining a substantial noncatalog demand pool.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Asia-Pacific and Central Asian reporter observations anchor the mineral-machinery component and unlisted-destination basket.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Asia-Pacific and Central Asian reporter observations anchor the mineral-machinery component and unlisted-destination basket.
5. Mach for mixing/kneading/crushing/grinding etc imports by country | 2021
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports were USD xx.xx. The model applies a qualified timing/access bridge and does not describe this as current trade.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports were USD xx.xx. The model applies a qualified timing/access bridge and does not describe this as current trade.
6. Crushing/grinding machines for earth/ stone/ore imports by country | 2021
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports of USD xx.xx provide the second historical purchasing primitive; the 2025 and 2032 allocations remain modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports of USD xx.xx provide the second historical purchasing primitive; the 2025 and 2032 allocations remain modeled.

7. World Manufacturing Production and Trade, Quarter IV 2025
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The report's mixed North American manufacturing conditions constrain a uniform high-growth assumption; output is not equated with mill purchasing.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Recent Latin American manufacturing weakness is counterevidence to immediate region-wide acceleration; forecast equipment factors remain conditional.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: European manufacturing stagnation and national divergence constrain the assumed relative equipment-purchasing path.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country-level manufacturing heterogeneity constrains the forecast; no single regional output rate is converted into machinery demand.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: African output observations include national counterexamples, supporting differentiated rather than uniform purchasing assumptions.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: China and other Asian manufacturing expansion, with national exceptions, provides directional context rather than an observed ultrafine-equipment growth rate.
8. Business Unit Grinding & Dispersing - NETZSCH
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The supplier documents local grinding-equipment production and commercial operations in Germany, the United States, Brazil, Russia, India and China. This supports considering domestic supply omitted by import statistics, but does not measure the model's correction factors.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The supplier documents local grinding-equipment production and commercial operations in Germany, the United States, Brazil, Russia, India and China. This supports considering domestic supply omitted by import statistics, but does not measure the model's correction factors.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Documented local commercial supply in China and India qualifies an import-only purchasing model; manufacturing location is not itself counted as buyer demand.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Documented local commercial supply in China and India qualifies an import-only purchasing model; manufacturing location is not itself counted as buyer demand.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Documented U.S. production and local commercial operations support an explicit, uncertain domestic-supply bridge rather than treating imports as the entire numerator.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Documented U.S. production and local commercial operations support an explicit, uncertain domestic-supply bridge rather than treating imports as the entire numerator.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Brazilian local production and commercial operations qualify reliance on imports alone, without establishing the assumed domestic sales amount.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Brazilian local production and commercial operations qualify reliance on imports alone, without establishing the assumed domestic sales amount.
9. High Energy Planetary Ball Mill - IIT Bombay
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The 2024 solicitation concerns one mill and requires two registration stages. It supports a purchaser-specific access constraint, not an award, national procurement conversion rate or forecast revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The 2024 solicitation concerns one mill and requires two registration stages. It supports a purchaser-specific access constraint, not an award, national procurement conversion rate or forecast revenue.

10. Metso receives order for grinding mills to a copper project in Africa
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The EUR xx.xx August 2024 HIGmill equipment/auxiliary/services order establishes a commercial package in Africa but identifies neither country nor annual revenue recognition. It constrains attribution and is not added to 2025 demand.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The EUR xx.xx August 2024 HIGmill equipment/auxiliary/services order establishes a commercial package in Africa but identifies neither country nor annual revenue recognition. It constrains attribution and is not added to 2025 demand.
11. Methodology - UNIDO Industrial Analytics Platform
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The methodology notes that U.S. trade coverage includes Puerto Rico, reinforcing that the national purchasing proxy must not be renormalized to the xx.xx-state inventory.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The methodology notes that U.S. trade coverage includes Puerto Rico, reinforcing that the national purchasing proxy must not be renormalized to the xx.xx-state inventory.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The methodology identifies Monaco within French trade coverage; the customs input is an imperfect national demand proxy rather than a directly observed country numerator.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The methodology identifies Monaco within French trade coverage; the customs input is an imperfect national demand proxy rather than a directly observed country numerator.
12. Hosokawa Micron - FY2025 Financial Results Presentation, November 25, 2025 (Japanese)
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; material attribution modeled.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; material attribution modeled.
13. LG Energy Solution Releases 2025 Financial Results - January 29, 2026
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own 2025 revenue decline and dated 2026 capital-expenditure reduction target constrain battery-related equipment-adoption assumptions.

9.2. Organic Chemicals

Table 63. Global Ultra Fine Grinding Mill Market Size, by Organic Chemicals, by Region, 2017-2040 (USD Million)

Region	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Africa	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Asia-Pacific	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Europe	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Latin America	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Middle East	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
North America	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 64. Global Ultra Fine Grinding Mill Market Size, by Organic Chemicals, by Group, 2017-2040 (USD Million)

Group	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
ASEAN	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
BRICS	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
European Union	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
G7	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
GCC	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
NATO	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx

Table 65. Global Ultra Fine Grinding Mill Market Size, by Organic Chemicals, by Country, 2017-2040 (USD Million)

Country	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Australia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Brazil	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Canada	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
China	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
France	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Germany	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
India	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Italy	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Japan	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mexico	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Russia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
South Korea	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Spain	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United Kingdom	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United States	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Others	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Sources & Evidence

1. UNSD Classification Detail - ISIC Rev.4, Division 20: Chemicals and Chemical Products
   - Taxonomy evidence: The division expressly recognizes organic raw materials, providing a commercial-classification input for the organic/inorganic distinction, but not an ultrafine eligibility rule.

2. Nippon Coke & Engineering - Commission Processing
   - Taxonomy evidence: Organic pigments are expressly listed among grinding-service materials.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Organic pigments are named commercial processing materials.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Organic pigments are named commercial processing materials.
3. Mach for mixing/kneading/crushing/grinding etc imports by country | 2024
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: 2024 gross machinery imports provide the purchasing-index input: U.S. HS xx.xx imports were USD xx.xx. These are broad machinery purchases, not ultrafine mill sales.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: 2024 gross machinery imports provide the purchasing-index input: U.S. HS xx.xx imports were USD xx.xx. These are broad machinery purchases, not ultrafine mill sales.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Country observations include Brazil USD xx.xx and Argentina USD xx.xx under HS xx.xx supporting the regional model's purchasing inputs.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country observations include Brazil USD xx.xx and Argentina USD xx.xx under HS xx.xx supporting the regional model's purchasing inputs.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: HS xx.xx imports include Germany USD xx.xx and France USD xx.xx; individual country records, rather than the EU aggregate, enter the allocation.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: HS xx.xx imports include Germany USD xx.xx and France USD xx.xx; individual country records, rather than the EU aggregate, enter the allocation.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Turkey USD xx.xx and Saudi Arabia USD xx.xx are broad machinery purchasing inputs, not observed qualifying-market numerators.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Turkey USD xx.xx and Saudi Arabia USD xx.xx are broad machinery purchasing inputs, not observed qualifying-market numerators.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: South Africa USD xx.xx and Egypt USD xx.xx, together with additional African reporters, anchor the purchasing baskets.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: South Africa USD xx.xx and Egypt USD xx.xx, together with additional African reporters, anchor the purchasing baskets.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: China USD xx.xx, Indonesia USD xx.xx and Japan USD xx.xx anchor the regional purchasing index before explicit local-supply adjustments.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: China USD xx.xx, Indonesia USD xx.xx and Japan USD xx.xx anchor the regional purchasing index before explicit local-supply adjustments.

4. Crushing/grinding machines for earth/ stone/ore imports by country | 2024
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: 2024 mineral crushing/grinding imports supply the secondary purchasing-index input; they contain out-of-scope ordinary crushers and are not treated as qualifying market revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: 2024 mineral crushing/grinding imports supply the secondary purchasing-index input; they contain out-of-scope ordinary crushers and are not treated as qualifying market revenue.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Country-level mineral machinery import observations support the Latin American purchasing basket and its explicitly modeled mining/package adjustments.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country-level mineral machinery import observations support the Latin American purchasing basket and its explicitly modeled mining/package adjustments.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: European national import observations provide the mineral-machinery component of the common purchasing index; the regional aggregate is not an extra country.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: European national import observations provide the mineral-machinery component of the common purchasing index; the regional aggregate is not an extra country.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Saudi Arabia and Turkey have separately reported mineral machinery imports, supporting national rather than bloc-wide purchasing inputs.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Saudi Arabia and Turkey have separately reported mineral machinery imports, supporting national rather than bloc-wide purchasing inputs.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: African reporter observations include major destinations outside the mandatory-country inventory, constraining a substantial noncatalog demand pool.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: African reporter observations include major destinations outside the mandatory-country inventory, constraining a substantial noncatalog demand pool.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Asia-Pacific and Central Asian reporter observations anchor the mineral-machinery component and unlisted-destination basket.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Asia-Pacific and Central Asian reporter observations anchor the mineral-machinery component and unlisted-destination basket.
5. Mach for mixing/kneading/crushing/grinding etc imports by country | 2021
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports were USD xx.xx. The model applies a qualified timing/access bridge and does not describe this as current trade.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports were USD xx.xx. The model applies a qualified timing/access bridge and does not describe this as current trade.
6. Crushing/grinding machines for earth/ stone/ore imports by country | 2021
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports of USD xx.xx provide the second historical purchasing primitive; the 2025 and 2032 allocations remain modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports of USD xx.xx provide the second historical purchasing primitive; the 2025 and 2032 allocations remain modeled.

7. World Manufacturing Production and Trade, Quarter IV 2025
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The report's mixed North American manufacturing conditions constrain a uniform high-growth assumption; output is not equated with mill purchasing.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Recent Latin American manufacturing weakness is counterevidence to immediate region-wide acceleration; forecast equipment factors remain conditional.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: European manufacturing stagnation and national divergence constrain the assumed relative equipment-purchasing path.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country-level manufacturing heterogeneity constrains the forecast; no single regional output rate is converted into machinery demand.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: African output observations include national counterexamples, supporting differentiated rather than uniform purchasing assumptions.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: China and other Asian manufacturing expansion, with national exceptions, provides directional context rather than an observed ultrafine-equipment growth rate.
8. Business Unit Grinding & Dispersing - NETZSCH
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The supplier documents local grinding-equipment production and commercial operations in Germany, the United States, Brazil, Russia, India and China. This supports considering domestic supply omitted by import statistics, but does not measure the model's correction factors.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The supplier documents local grinding-equipment production and commercial operations in Germany, the United States, Brazil, Russia, India and China. This supports considering domestic supply omitted by import statistics, but does not measure the model's correction factors.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Documented local commercial supply in China and India qualifies an import-only purchasing model; manufacturing location is not itself counted as buyer demand.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Documented local commercial supply in China and India qualifies an import-only purchasing model; manufacturing location is not itself counted as buyer demand.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Documented U.S. production and local commercial operations support an explicit, uncertain domestic-supply bridge rather than treating imports as the entire numerator.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Documented U.S. production and local commercial operations support an explicit, uncertain domestic-supply bridge rather than treating imports as the entire numerator.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Brazilian local production and commercial operations qualify reliance on imports alone, without establishing the assumed domestic sales amount.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Brazilian local production and commercial operations qualify reliance on imports alone, without establishing the assumed domestic sales amount.
9. High Energy Planetary Ball Mill - IIT Bombay
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The 2024 solicitation concerns one mill and requires two registration stages. It supports a purchaser-specific access constraint, not an award, national procurement conversion rate or forecast revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The 2024 solicitation concerns one mill and requires two registration stages. It supports a purchaser-specific access constraint, not an award, national procurement conversion rate or forecast revenue.

10. Metso receives order for grinding mills to a copper project in Africa
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The EUR xx.xx August 2024 HIGmill equipment/auxiliary/services order establishes a commercial package in Africa but identifies neither country nor annual revenue recognition. It constrains attribution and is not added to 2025 demand.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The EUR xx.xx August 2024 HIGmill equipment/auxiliary/services order establishes a commercial package in Africa but identifies neither country nor annual revenue recognition. It constrains attribution and is not added to 2025 demand.
11. Methodology - UNIDO Industrial Analytics Platform
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The methodology notes that U.S. trade coverage includes Puerto Rico, reinforcing that the national purchasing proxy must not be renormalized to the xx.xx-state inventory.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The methodology notes that U.S. trade coverage includes Puerto Rico, reinforcing that the national purchasing proxy must not be renormalized to the xx.xx-state inventory.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The methodology identifies Monaco within French trade coverage; the customs input is an imperfect national demand proxy rather than a directly observed country numerator.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The methodology identifies Monaco within French trade coverage; the customs input is an imperfect national demand proxy rather than a directly observed country numerator.
12. Hosokawa Micron - FY2025 Financial Results Presentation, November 25, 2025 (Japanese)
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; material attribution modeled.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; material attribution modeled.

9.3. Metal Ores and Concentrates

Table 66. Global Ultra Fine Grinding Mill Market Size, by Metal Ores and Concentrates, by Region, 2017-2040 (USD Million)

Region	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Africa	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Asia-Pacific	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Europe	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Latin America	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Middle East	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
North America	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 67. Global Ultra Fine Grinding Mill Market Size, by Metal Ores and Concentrates, by Group, 2017-2040 (USD Million)

Group	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
ASEAN	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
BRICS	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
European Union	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
G7	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
GCC	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
NATO	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx

Table 68. Global Ultra Fine Grinding Mill Market Size, by Metal Ores and Concentrates, by Country, 2017-2040 (USD Million)

Country	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Australia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Brazil	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Canada	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
China	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
France	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Germany	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
India	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Italy	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Japan	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mexico	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Russia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
South Korea	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Spain	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United Kingdom	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United States	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Others	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Sources & Evidence

1. Stirred media mills in the mining industry: Material grindability, energy-size relationships, and operating conditions

   · Taxonomy evidence: The review identifies ultrafine grinding of metalliferous ores for mineral liberation, supporting the ore/concentrate commercial duty.

2. Mach for mixing/kneading/crushing/grinding etc imports by country | 2024
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: 2024 gross machinery imports provide the purchasing-index input: U.S. HS xx.xx imports were USD xx.xx. These are broad machinery purchases, not ultrafine mill sales.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: 2024 gross machinery imports provide the purchasing-index input: U.S. HS xx.xx imports were USD xx.xx. These are broad machinery purchases, not ultrafine mill sales.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Country observations include Brazil USD xx.xx and Argentina USD xx.xx under HS xx.xx supporting the regional model's purchasing inputs.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country observations include Brazil USD xx.xx and Argentina USD xx.xx under HS xx.xx supporting the regional model's purchasing inputs.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: HS xx.xx imports include Germany USD xx.xx and France USD xx.xx; individual country records, rather than the EU aggregate, enter the allocation.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: HS xx.xx imports include Germany USD xx.xx and France USD xx.xx; individual country records, rather than the EU aggregate, enter the allocation.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Turkey USD xx.xx and Saudi Arabia USD xx.xx are broad machinery purchasing inputs, not observed qualifying-market numerators.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Turkey USD xx.xx and Saudi Arabia USD xx.xx are broad machinery purchasing inputs, not observed qualifying-market numerators.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: South Africa USD xx.xx and Egypt USD xx.xx, together with additional African reporters, anchor the purchasing baskets.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: South Africa USD xx.xx and Egypt USD xx.xx, together with additional African reporters, anchor the purchasing baskets.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: China USD xx.xx, Indonesia USD xx.xx and Japan USD xx.xx anchor the regional purchasing index before explicit local-supply adjustments.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: China USD xx.xx, Indonesia USD xx.xx and Japan USD xx.xx anchor the regional purchasing index before explicit local-supply adjustments.

3. Crushing/grinding machines for earth/ stone/ore imports by country | 2024
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: 2024 mineral crushing/grinding imports supply the secondary purchasing-index input; they contain out-of-scope ordinary crushers and are not treated as qualifying market revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: 2024 mineral crushing/grinding imports supply the secondary purchasing-index input; they contain out-of-scope ordinary crushers and are not treated as qualifying market revenue.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Country-level mineral machinery import observations support the Latin American purchasing basket and its explicitly modeled mining/package adjustments.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country-level mineral machinery import observations support the Latin American purchasing basket and its explicitly modeled mining/package adjustments.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: European national import observations provide the mineral-machinery component of the common purchasing index; the regional aggregate is not an extra country.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: European national import observations provide the mineral-machinery component of the common purchasing index; the regional aggregate is not an extra country.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Saudi Arabia and Turkey have separately reported mineral machinery imports, supporting national rather than bloc-wide purchasing inputs.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Saudi Arabia and Turkey have separately reported mineral machinery imports, supporting national rather than bloc-wide purchasing inputs.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: African reporter observations include major destinations outside the mandatory-country inventory, constraining a substantial noncatalog demand pool.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: African reporter observations include major destinations outside the mandatory-country inventory, constraining a substantial noncatalog demand pool.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Asia-Pacific and Central Asian reporter observations anchor the mineral-machinery component and unlisted-destination basket.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Asia-Pacific and Central Asian reporter observations anchor the mineral-machinery component and unlisted-destination basket.
4. Mach for mixing/kneading/crushing/grinding etc imports by country | 2021
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports were USD xx.xx. The model applies a qualified timing/access bridge and does not describe this as current trade.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports were USD xx.xx. The model applies a qualified timing/access bridge and does not describe this as current trade.
5. Crushing/grinding machines for earth/ stone/ore imports by country | 2021
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports of USD xx.xx provide the second historical purchasing primitive; the 2025 and 2032 allocations remain modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports of USD xx.xx provide the second historical purchasing primitive; the 2025 and 2032 allocations remain modeled.

6. World Manufacturing Production and Trade, Quarter IV 2025
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The report's mixed North American manufacturing conditions constrain a uniform high-growth assumption; output is not equated with mill purchasing.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Recent Latin American manufacturing weakness is counterevidence to immediate region-wide acceleration; forecast equipment factors remain conditional.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: European manufacturing stagnation and national divergence constrain the assumed relative equipment-purchasing path.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country-level manufacturing heterogeneity constrains the forecast; no single regional output rate is converted into machinery demand.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: African output observations include national counterexamples, supporting differentiated rather than uniform purchasing assumptions.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: China and other Asian manufacturing expansion, with national exceptions, provides directional context rather than an observed ultrafine-equipment growth rate.
7. Business Unit Grinding & Dispersing - NETZSCH
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The supplier documents local grinding-equipment production and commercial operations in Germany, the United States, Brazil, Russia, India and China. This supports considering domestic supply omitted by import statistics, but does not measure the model's correction factors.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The supplier documents local grinding-equipment production and commercial operations in Germany, the United States, Brazil, Russia, India and China. This supports considering domestic supply omitted by import statistics, but does not measure the model's correction factors.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Documented local commercial supply in China and India qualifies an import-only purchasing model; manufacturing location is not itself counted as buyer demand.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Documented local commercial supply in China and India qualifies an import-only purchasing model; manufacturing location is not itself counted as buyer demand.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Documented U.S. production and local commercial operations support an explicit, uncertain domestic-supply bridge rather than treating imports as the entire numerator.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Documented U.S. production and local commercial operations support an explicit, uncertain domestic-supply bridge rather than treating imports as the entire numerator.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Brazilian local production and commercial operations qualify reliance on imports alone, without establishing the assumed domestic sales amount.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Brazilian local production and commercial operations qualify reliance on imports alone, without establishing the assumed domestic sales amount.
8. High Energy Planetary Ball Mill - IIT Bombay
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The 2024 solicitation concerns one mill and requires two registration stages. It supports a purchaser-specific access constraint, not an award, national procurement conversion rate or forecast revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The 2024 solicitation concerns one mill and requires two registration stages. It supports a purchaser-specific access constraint, not an award, national procurement conversion rate or forecast revenue.

9. Metso receives order for grinding mills to a copper project in Africa
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The EUR xx.xx August 2024 HIGmill equipment/auxiliary/services order establishes a commercial package in Africa but identifies neither country nor annual revenue recognition. It constrains attribution and is not added to 2025 demand.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The EUR xx.xx August 2024 HIGmill equipment/auxiliary/services order establishes a commercial package in Africa but identifies neither country nor annual revenue recognition. It constrains attribution and is not added to 2025 demand.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The copper-project award establishes an ore/concentrate commercial purchasing context.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The copper-project award establishes an ore/concentrate commercial purchasing context.
10. Methodology - UNIDO Industrial Analytics Platform
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The methodology notes that U.S. trade coverage includes Puerto Rico, reinforcing that the national purchasing proxy must not be renormalized to the xx.xx-state inventory.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The methodology notes that U.S. trade coverage includes Puerto Rico, reinforcing that the national purchasing proxy must not be renormalized to the xx.xx-state inventory.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The methodology identifies Monaco within French trade coverage; the customs input is an imperfect national demand proxy rather than a directly observed country numerator.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The methodology identifies Monaco within French trade coverage; the customs input is an imperfect national demand proxy rather than a directly observed country numerator.
11. Hosokawa Micron - FY2025 Financial Results Presentation, November 25, 2025 (Japanese)
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; material attribution modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; material attribution modeled.

9.4. Biomass and Natural Ingredients

Table 69. Global Ultra Fine Grinding Mill Market Size, by Biomass and Natural Ingredients, by Region, 2017-2040 (USD Million)

Region	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Africa	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Asia-Pacific	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Europe	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Latin America	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Middle East	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
North America	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 70. Global Ultra Fine Grinding Mill Market Size, by Biomass and Natural Ingredients, by Group, 2017-2040 (USD Million)

Group	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
ASEAN	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
BRICS	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
European Union	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
G7	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
GCC	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
NATO	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx

Table 71. Global Ultra Fine Grinding Mill Market Size, by Biomass and Natural Ingredients, by Country, 2017-2040 (USD Million)

Country	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Australia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Brazil	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Canada	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
China	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
France	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Germany	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
India	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Italy	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Japan	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mexico	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Russia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
South Korea	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Spain	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United Kingdom	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United States	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Others	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Sources & Evidence

1. A. Ebbecke Verfahrenstechnik - Micronization / Grinding

   · Taxonomy evidence: The processor identifies foodstuffs, plant-based ingredients, herbs, roots, and leaves within its own commercial micronization/grinding activities. Only material identities are used here; no processing instructions or efficacy claims are adopted. ([ebbecke-verfahrenstechnik.de](https://www.ebbecke-verfahrenstechnik.de/en/services/micronization-grinding/))

   · Evidence informing base-year allocation inputs; displayed values and growth are calculated: Commercial contract-grinding coverage includes natural materials and food ingredients; processing fees are excluded from equipment value.

   · Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Commercial contract-grinding coverage includes natural materials and food ingredients; processing fees are excluded from equipment value.

2. Mach for mixing/kneading/crushing/grinding etc imports by country | 2024

   · Evidence informing base-year allocation inputs; displayed values and growth are calculated: 2024 gross machinery imports provide the purchasing-index input: U.S. HS xx.xx imports were USD xx.xx. These are broad machinery purchases, not ultrafine mill sales.

   · Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: 2024 gross machinery imports provide the purchasing-index input: U.S. HS xx.xx imports were USD xx.xx. These are broad machinery purchases, not ultrafine mill sales.

   · Evidence informing base-year allocation inputs; displayed values and growth are calculated: Country observations include Brazil USD xx.xx and Argentina USD xx.xx under HS xx.xx supporting the regional model's purchasing inputs.

   · Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country observations include Brazil USD xx.xx and Argentina USD xx.xx under HS xx.xx supporting the regional model's purchasing inputs.

   · Evidence informing base-year allocation inputs; displayed values and growth are calculated: HS xx.xx imports include Germany USD xx.xx and France USD xx.xx; individual country records, rather than the EU aggregate, enter the allocation.

   · Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: HS xx.xx imports include Germany USD xx.xx and France USD xx.xx; individual country records, rather than the EU aggregate, enter the allocation.

   · Evidence informing base-year allocation inputs; displayed values and growth are calculated: Turkey USD xx.xx and Saudi Arabia USD xx.xx are broad machinery purchasing inputs, not observed qualifying-market numerators.

   · Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Turkey USD xx.xx and Saudi Arabia USD xx.xx are broad machinery purchasing inputs, not observed qualifying-market numerators.

   · Evidence informing base-year allocation inputs; displayed values and growth are calculated: South Africa USD xx.xx and Egypt USD xx.xx, together with additional African reporters, anchor the purchasing baskets.

   · Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: South Africa USD xx.xx and Egypt USD xx.xx, together with additional African reporters, anchor the purchasing baskets.

   · Evidence informing base-year allocation inputs; displayed values and growth are calculated: China USD xx.xx, Indonesia USD xx.xx and Japan USD xx.xx anchor the regional purchasing index before explicit local-supply adjustments.

   · Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: China USD xx.xx, Indonesia USD xx.xx and Japan USD xx.xx anchor the regional purchasing index before explicit local-supply adjustments.

3. Crushing/grinding machines for earth/ stone/ore imports by country | 2024
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: 2024 mineral crushing/grinding imports supply the secondary purchasing-index input; they contain out-of-scope ordinary crushers and are not treated as qualifying market revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: 2024 mineral crushing/grinding imports supply the secondary purchasing-index input; they contain out-of-scope ordinary crushers and are not treated as qualifying market revenue.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Country-level mineral machinery import observations support the Latin American purchasing basket and its explicitly modeled mining/package adjustments.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country-level mineral machinery import observations support the Latin American purchasing basket and its explicitly modeled mining/package adjustments.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: European national import observations provide the mineral-machinery component of the common purchasing index; the regional aggregate is not an extra country.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: European national import observations provide the mineral-machinery component of the common purchasing index; the regional aggregate is not an extra country.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Saudi Arabia and Turkey have separately reported mineral machinery imports, supporting national rather than bloc-wide purchasing inputs.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Saudi Arabia and Turkey have separately reported mineral machinery imports, supporting national rather than bloc-wide purchasing inputs.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: African reporter observations include major destinations outside the mandatory-country inventory, constraining a substantial noncatalog demand pool.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: African reporter observations include major destinations outside the mandatory-country inventory, constraining a substantial noncatalog demand pool.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Asia-Pacific and Central Asian reporter observations anchor the mineral-machinery component and unlisted-destination basket.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Asia-Pacific and Central Asian reporter observations anchor the mineral-machinery component and unlisted-destination basket.
4. Mach for mixing/kneading/crushing/grinding etc imports by country | 2021
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports were USD xx.xx. The model applies a qualified timing/access bridge and does not describe this as current trade.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports were USD xx.xx. The model applies a qualified timing/access bridge and does not describe this as current trade.
5. Crushing/grinding machines for earth/ stone/ore imports by country | 2021
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports of USD xx.xx provide the second historical purchasing primitive; the 2025 and 2032 allocations remain modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports of USD xx.xx provide the second historical purchasing primitive; the 2025 and 2032 allocations remain modeled.

6. World Manufacturing Production and Trade, Quarter IV 2025
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The report's mixed North American manufacturing conditions constrain a uniform high-growth assumption; output is not equated with mill purchasing.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Recent Latin American manufacturing weakness is counterevidence to immediate region-wide acceleration; forecast equipment factors remain conditional.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: European manufacturing stagnation and national divergence constrain the assumed relative equipment-purchasing path.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country-level manufacturing heterogeneity constrains the forecast; no single regional output rate is converted into machinery demand.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: African output observations include national counterexamples, supporting differentiated rather than uniform purchasing assumptions.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: China and other Asian manufacturing expansion, with national exceptions, provides directional context rather than an observed ultrafine-equipment growth rate.
7. Business Unit Grinding & Dispersing - NETZSCH
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The supplier documents local grinding-equipment production and commercial operations in Germany, the United States, Brazil, Russia, India and China. This supports considering domestic supply omitted by import statistics, but does not measure the model's correction factors.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The supplier documents local grinding-equipment production and commercial operations in Germany, the United States, Brazil, Russia, India and China. This supports considering domestic supply omitted by import statistics, but does not measure the model's correction factors.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Documented local commercial supply in China and India qualifies an import-only purchasing model; manufacturing location is not itself counted as buyer demand.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Documented local commercial supply in China and India qualifies an import-only purchasing model; manufacturing location is not itself counted as buyer demand.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Documented U.S. production and local commercial operations support an explicit, uncertain domestic-supply bridge rather than treating imports as the entire numerator.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Documented U.S. production and local commercial operations support an explicit, uncertain domestic-supply bridge rather than treating imports as the entire numerator.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Brazilian local production and commercial operations qualify reliance on imports alone, without establishing the assumed domestic sales amount.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Brazilian local production and commercial operations qualify reliance on imports alone, without establishing the assumed domestic sales amount.
8. High Energy Planetary Ball Mill - IIT Bombay
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The 2024 solicitation concerns one mill and requires two registration stages. It supports a purchaser-specific access constraint, not an award, national procurement conversion rate or forecast revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The 2024 solicitation concerns one mill and requires two registration stages. It supports a purchaser-specific access constraint, not an award, national procurement conversion rate or forecast revenue.

9. Metso receives order for grinding mills to a copper project in Africa
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The EUR xx.xx August 2024 HIGmill equipment/auxiliary/services order establishes a commercial package in Africa but identifies neither country nor annual revenue recognition. It constrains attribution and is not added to 2025 demand.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The EUR xx.xx August 2024 HIGmill equipment/auxiliary/services order establishes a commercial package in Africa but identifies neither country nor annual revenue recognition. It constrains attribution and is not added to 2025 demand.
10. Methodology - UNIDO Industrial Analytics Platform
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The methodology notes that U.S. trade coverage includes Puerto Rico, reinforcing that the national purchasing proxy must not be renormalized to the xx.xx-state inventory.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The methodology notes that U.S. trade coverage includes Puerto Rico, reinforcing that the national purchasing proxy must not be renormalized to the xx.xx-state inventory.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The methodology identifies Monaco within French trade coverage; the customs input is an imperfect national demand proxy rather than a directly observed country numerator.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The methodology identifies Monaco within French trade coverage; the customs input is an imperfect national demand proxy rather than a directly observed country numerator.
11. Hosokawa Micron - FY2025 Financial Results Presentation, November 25, 2025 (Japanese)
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; material attribution modeled.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; material attribution modeled.

9.5. Formulations and Composites

Table 72. Global Ultra Fine Grinding Mill Market Size, by Formulations and Composites, by Region, 2017-2040 (USD Million)

Region	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Africa	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Asia-Pacific	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Europe	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Latin America	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Middle East	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
North America	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 73. Global Ultra Fine Grinding Mill Market Size, by Formulations and Composites, by Group, 2017-2040 (USD Million)

Group	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
ASEAN	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
BRICS	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
European Union	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
G7	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
GCC	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
NATO	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx

Table 74. Global Ultra Fine Grinding Mill Market Size, by Formulations and Composites, by Country, 2017-2040 (USD Million)

Country	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Australia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Brazil	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Canada	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
China	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
France	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Germany	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
India	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Italy	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Japan	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mexico	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Russia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
South Korea	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Spain	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United Kingdom	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United States	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Others	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Sources & Evidence

1. Nippon Coke & Engineering - Commission Processing
   - Taxonomy evidence: Ink grinding is documented, but the page does not identify whether multiple solid constituents or one pigment constitute the grinding target.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Ink-related grinding establishes a commercial reference but does not resolve whole-formulation versus constituent duty.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Ink-related grinding establishes a commercial reference but does not resolve whole-formulation versus constituent duty.
2. Asbury Advanced Materials - Manufacturing Capabilities
   - Taxonomy evidence: The company names custom formulations and liquid dispersions as commercial outputs, but does not establish that every formulation is jointly ground as a multicomponent solid feed.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Custom formulations and dispersions are commercial outputs, but joint whole-formulation milling remains unmeasured.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Custom formulations and dispersions are commercial outputs, but joint whole-formulation milling remains unmeasured.
3. TRS & Polymers - TyreXol Rubber Powder
   - Taxonomy evidence: The page describes tire-derived rubber powders and customized compounded products. Assignment of a particular purchased mill to a joint composite-feed duty remains an analytical inference requiring transaction-level confirmation.

4. Mach for mixing/kneading/crushing/grinding etc imports by country | 2024
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: 2024 gross machinery imports provide the purchasing-index input: U.S. HS xx.xx imports were USD xx.xx. These are broad machinery purchases, not ultrafine mill sales.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: 2024 gross machinery imports provide the purchasing-index input: U.S. HS xx.xx imports were USD xx.xx. These are broad machinery purchases, not ultrafine mill sales.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Country observations include Brazil USD xx.xx and Argentina USD xx.xx under HS xx.xx supporting the regional model's purchasing inputs.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country observations include Brazil USD xx.xx and Argentina USD xx.xx under HS xx.xx supporting the regional model's purchasing inputs.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: HS xx.xx imports include Germany USD xx.xx and France USD xx.xx; individual country records, rather than the EU aggregate, enter the allocation.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: HS xx.xx imports include Germany USD xx.xx and France USD xx.xx; individual country records, rather than the EU aggregate, enter the allocation.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Turkey USD xx.xx and Saudi Arabia USD xx.xx are broad machinery purchasing inputs, not observed qualifying-market numerators.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Turkey USD xx.xx and Saudi Arabia USD xx.xx are broad machinery purchasing inputs, not observed qualifying-market numerators.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: South Africa USD xx.xx and Egypt USD xx.xx, together with additional African reporters, anchor the purchasing baskets.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: South Africa USD xx.xx and Egypt USD xx.xx, together with additional African reporters, anchor the purchasing baskets.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: China USD xx.xx, Indonesia USD xx.xx and Japan USD xx.xx anchor the regional purchasing index before explicit local-supply adjustments.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: China USD xx.xx, Indonesia USD xx.xx and Japan USD xx.xx anchor the regional purchasing index before explicit local-supply adjustments.

5. Crushing/grinding machines for earth/ stone/ore imports by country | 2024
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: 2024 mineral crushing/grinding imports supply the secondary purchasing-index input; they contain out-of-scope ordinary crushers and are not treated as qualifying market revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: 2024 mineral crushing/grinding imports supply the secondary purchasing-index input; they contain out-of-scope ordinary crushers and are not treated as qualifying market revenue.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Country-level mineral machinery import observations support the Latin American purchasing basket and its explicitly modeled mining/package adjustments.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country-level mineral machinery import observations support the Latin American purchasing basket and its explicitly modeled mining/package adjustments.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: European national import observations provide the mineral-machinery component of the common purchasing index; the regional aggregate is not an extra country.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: European national import observations provide the mineral-machinery component of the common purchasing index; the regional aggregate is not an extra country.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Saudi Arabia and Turkey have separately reported mineral machinery imports, supporting national rather than bloc-wide purchasing inputs.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Saudi Arabia and Turkey have separately reported mineral machinery imports, supporting national rather than bloc-wide purchasing inputs.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: African reporter observations include major destinations outside the mandatory-country inventory, constraining a substantial noncatalog demand pool.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: African reporter observations include major destinations outside the mandatory-country inventory, constraining a substantial noncatalog demand pool.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Asia-Pacific and Central Asian reporter observations anchor the mineral-machinery component and unlisted-destination basket.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Asia-Pacific and Central Asian reporter observations anchor the mineral-machinery component and unlisted-destination basket.
6. Mach for mixing/kneading/crushing/grinding etc imports by country | 2021
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports were USD xx.xx. The model applies a qualified timing/access bridge and does not describe this as current trade.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports were USD xx.xx. The model applies a qualified timing/access bridge and does not describe this as current trade.
7. Crushing/grinding machines for earth/ stone/ore imports by country | 2021
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports of USD xx.xx provide the second historical purchasing primitive; the 2025 and 2032 allocations remain modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports of USD xx.xx provide the second historical purchasing primitive; the 2025 and 2032 allocations remain modeled.

8. World Manufacturing Production and Trade, Quarter IV 2025
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The report's mixed North American manufacturing conditions constrain a uniform high-growth assumption; output is not equated with mill purchasing.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Recent Latin American manufacturing weakness is counterevidence to immediate region-wide acceleration; forecast equipment factors remain conditional.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: European manufacturing stagnation and national divergence constrain the assumed relative equipment-purchasing path.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country-level manufacturing heterogeneity constrains the forecast; no single regional output rate is converted into machinery demand.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: African output observations include national counterexamples, supporting differentiated rather than uniform purchasing assumptions.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: China and other Asian manufacturing expansion, with national exceptions, provides directional context rather than an observed ultrafine-equipment growth rate.
9. Business Unit Grinding & Dispersing - NETZSCH
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The supplier documents local grinding-equipment production and commercial operations in Germany, the United States, Brazil, Russia, India and China. This supports considering domestic supply omitted by import statistics, but does not measure the model's correction factors.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The supplier documents local grinding-equipment production and commercial operations in Germany, the United States, Brazil, Russia, India and China. This supports considering domestic supply omitted by import statistics, but does not measure the model's correction factors.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Documented local commercial supply in China and India qualifies an import-only purchasing model; manufacturing location is not itself counted as buyer demand.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Documented local commercial supply in China and India qualifies an import-only purchasing model; manufacturing location is not itself counted as buyer demand.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Documented U.S. production and local commercial operations support an explicit, uncertain domestic-supply bridge rather than treating imports as the entire numerator.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Documented U.S. production and local commercial operations support an explicit, uncertain domestic-supply bridge rather than treating imports as the entire numerator.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Brazilian local production and commercial operations qualify reliance on imports alone, without establishing the assumed domestic sales amount.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Brazilian local production and commercial operations qualify reliance on imports alone, without establishing the assumed domestic sales amount.
10. High Energy Planetary Ball Mill - IIT Bombay
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The 2024 solicitation concerns one mill and requires two registration stages. It supports a purchaser-specific access constraint, not an award, national procurement conversion rate or forecast revenue.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The 2024 solicitation concerns one mill and requires two registration stages. It supports a purchaser-specific access constraint, not an award, national procurement conversion rate or forecast revenue.

11. Metso receives order for grinding mills to a copper project in Africa
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The EUR xx.xx August 2024 HIGmill equipment/auxiliary/services order establishes a commercial package in Africa but identifies neither country nor annual revenue recognition. It constrains attribution and is not added to 2025 demand.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The EUR xx.xx August 2024 HIGmill equipment/auxiliary/services order establishes a commercial package in Africa but identifies neither country nor annual revenue recognition. It constrains attribution and is not added to 2025 demand.
12. Methodology - UNIDO Industrial Analytics Platform
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The methodology notes that U.S. trade coverage includes Puerto Rico, reinforcing that the national purchasing proxy must not be renormalized to the xx.xx-state inventory.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The methodology notes that U.S. trade coverage includes Puerto Rico, reinforcing that the national purchasing proxy must not be renormalized to the xx.xx-state inventory.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The methodology identifies Monaco within French trade coverage; the customs input is an imperfect national demand proxy rather than a directly observed country numerator.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The methodology identifies Monaco within French trade coverage; the customs input is an imperfect national demand proxy rather than a directly observed country numerator.
13. Hosokawa Micron - FY2025 Financial Results Presentation, November 25, 2025 (Japanese)
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; material attribution modeled.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; material attribution modeled.

9.6. Carbonaceous Materials

Table 75. Global Ultra Fine Grinding Mill Market Size, by Carbonaceous Materials, by Region, 2017-2040 (USD Million)

Region	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Africa	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Asia-Pacific	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Europe	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Latin America	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Middle East	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
North America	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 76. Global Ultra Fine Grinding Mill Market Size, by Carbonaceous Materials, by Group, 2017-2040 (USD Million)

Group	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
ASEAN	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
BRICS	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
European Union	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
G7	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
GCC	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
NATO	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx

Table 77. Global Ultra Fine Grinding Mill Market Size, by Carbonaceous Materials, by Country, 2017-2040 (USD Million)

Country	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Australia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Brazil	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Canada	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
China	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
France	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Germany	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
India	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Italy	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Japan	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mexico	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Russia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
South Korea	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Spain	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United Kingdom	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United States	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Others	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Sources & Evidence

1. Nippon Coke & Engineering - Commission Processing
   - Taxonomy evidence: Carbon is a named material handled by the company's grinding services.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Carbon is identified in the operator's commercial grinding portfolio.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Carbon is identified in the operator's commercial grinding portfolio.
2. Asbury Advanced Materials - Manufacturing Capabilities
   - Taxonomy evidence: Asbury's own manufacturing disclosure identifies fine grinding and micronization and describes processing carbon and non-carbon materials, providing an operator-side commercial anchor for carbonaceous-material processing. Material-specific eligibility remains unresolved for some subtypes. ([asbury.com](https://www.asbury.com/services/manufacturing-capabilities/))
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Own manufacturing disclosure identifies carbon-material grinding and micronization; supports the material-duty premise only.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own manufacturing disclosure identifies carbon-material grinding and micronization; supports the material-duty premise only.

3. Mach for mixing/kneading/crushing/grinding etc imports by country | 2024
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: 2024 gross machinery imports provide the purchasing-index input: U.S. HS xx.xx imports were USD xx.xx. These are broad machinery purchases, not ultrafine mill sales.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: 2024 gross machinery imports provide the purchasing-index input: U.S. HS xx.xx imports were USD xx.xx. These are broad machinery purchases, not ultrafine mill sales.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Country observations include Brazil USD xx.xx and Argentina USD xx.xx under HS xx.xx supporting the regional model's purchasing inputs.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country observations include Brazil USD xx.xx and Argentina USD xx.xx under HS xx.xx supporting the regional model's purchasing inputs.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: HS xx.xx imports include Germany USD xx.xx and France USD xx.xx; individual country records, rather than the EU aggregate, enter the allocation.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: HS xx.xx imports include Germany USD xx.xx and France USD xx.xx; individual country records, rather than the EU aggregate, enter the allocation.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Turkey USD xx.xx and Saudi Arabia USD xx.xx are broad machinery purchasing inputs, not observed qualifying-market numerators.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Turkey USD xx.xx and Saudi Arabia USD xx.xx are broad machinery purchasing inputs, not observed qualifying-market numerators.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: South Africa USD xx.xx and Egypt USD xx.xx, together with additional African reporters, anchor the purchasing baskets.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: South Africa USD xx.xx and Egypt USD xx.xx, together with additional African reporters, anchor the purchasing baskets.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: China USD xx.xx, Indonesia USD xx.xx and Japan USD xx.xx anchor the regional purchasing index before explicit local-supply adjustments.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: China USD xx.xx, Indonesia USD xx.xx and Japan USD xx.xx anchor the regional purchasing index before explicit local-supply adjustments.

4. Crushing/grinding machines for earth/ stone/ore imports by country | 2024
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: 2024 mineral crushing/grinding imports supply the secondary purchasing-index input; they contain out-of-scope ordinary crushers and are not treated as qualifying market revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: 2024 mineral crushing/grinding imports supply the secondary purchasing-index input; they contain out-of-scope ordinary crushers and are not treated as qualifying market revenue.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Country-level mineral machinery import observations support the Latin American purchasing basket and its explicitly modeled mining/package adjustments.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country-level mineral machinery import observations support the Latin American purchasing basket and its explicitly modeled mining/package adjustments.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: European national import observations provide the mineral-machinery component of the common purchasing index; the regional aggregate is not an extra country.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: European national import observations provide the mineral-machinery component of the common purchasing index; the regional aggregate is not an extra country.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Saudi Arabia and Turkey have separately reported mineral machinery imports, supporting national rather than bloc-wide purchasing inputs.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Saudi Arabia and Turkey have separately reported mineral machinery imports, supporting national rather than bloc-wide purchasing inputs.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: African reporter observations include major destinations outside the mandatory-country inventory, constraining a substantial noncatalog demand pool.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: African reporter observations include major destinations outside the mandatory-country inventory, constraining a substantial noncatalog demand pool.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Asia-Pacific and Central Asian reporter observations anchor the mineral-machinery component and unlisted-destination basket.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Asia-Pacific and Central Asian reporter observations anchor the mineral-machinery component and unlisted-destination basket.
5. Mach for mixing/kneading/crushing/grinding etc imports by country | 2021
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports were USD xx.xx. The model applies a qualified timing/access bridge and does not describe this as current trade.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports were USD xx.xx. The model applies a qualified timing/access bridge and does not describe this as current trade.
6. Crushing/grinding machines for earth/ stone/ore imports by country | 2021
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports of USD xx.xx provide the second historical purchasing primitive; the 2025 and 2032 allocations remain modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports of USD xx.xx provide the second historical purchasing primitive; the 2025 and 2032 allocations remain modeled.

7. World Manufacturing Production and Trade, Quarter IV 2025
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The report's mixed North American manufacturing conditions constrain a uniform high-growth assumption; output is not equated with mill purchasing.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Recent Latin American manufacturing weakness is counterevidence to immediate region-wide acceleration; forecast equipment factors remain conditional.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: European manufacturing stagnation and national divergence constrain the assumed relative equipment-purchasing path.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country-level manufacturing heterogeneity constrains the forecast; no single regional output rate is converted into machinery demand.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: African output observations include national counterexamples, supporting differentiated rather than uniform purchasing assumptions.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: China and other Asian manufacturing expansion, with national exceptions, provides directional context rather than an observed ultrafine-equipment growth rate.
8. Business Unit Grinding & Dispersing - NETZSCH
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The supplier documents local grinding-equipment production and commercial operations in Germany, the United States, Brazil, Russia, India and China. This supports considering domestic supply omitted by import statistics, but does not measure the model's correction factors.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The supplier documents local grinding-equipment production and commercial operations in Germany, the United States, Brazil, Russia, India and China. This supports considering domestic supply omitted by import statistics, but does not measure the model's correction factors.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Documented local commercial supply in China and India qualifies an import-only purchasing model; manufacturing location is not itself counted as buyer demand.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Documented local commercial supply in China and India qualifies an import-only purchasing model; manufacturing location is not itself counted as buyer demand.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Documented U.S. production and local commercial operations support an explicit, uncertain domestic-supply bridge rather than treating imports as the entire numerator.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Documented U.S. production and local commercial operations support an explicit, uncertain domestic-supply bridge rather than treating imports as the entire numerator.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Brazilian local production and commercial operations qualify reliance on imports alone, without establishing the assumed domestic sales amount.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Brazilian local production and commercial operations qualify reliance on imports alone, without establishing the assumed domestic sales amount.
9. High Energy Planetary Ball Mill - IIT Bombay
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The 2024 solicitation concerns one mill and requires two registration stages. It supports a purchaser-specific access constraint, not an award, national procurement conversion rate or forecast revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The 2024 solicitation concerns one mill and requires two registration stages. It supports a purchaser-specific access constraint, not an award, national procurement conversion rate or forecast revenue.

10. Metso receives order for grinding mills to a copper project in Africa
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The EUR xx.xx August 2024 HIGmill equipment/auxiliary/services order establishes a commercial package in Africa but identifies neither country nor annual revenue recognition. It constrains attribution and is not added to 2025 demand.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The EUR xx.xx August 2024 HIGmill equipment/auxiliary/services order establishes a commercial package in Africa but identifies neither country nor annual revenue recognition. It constrains attribution and is not added to 2025 demand.
11. Methodology - UNIDO Industrial Analytics Platform
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The methodology notes that U.S. trade coverage includes Puerto Rico, reinforcing that the national purchasing proxy must not be renormalized to the xx.xx-state inventory.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The methodology notes that U.S. trade coverage includes Puerto Rico, reinforcing that the national purchasing proxy must not be renormalized to the xx.xx-state inventory.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The methodology identifies Monaco within French trade coverage; the customs input is an imperfect national demand proxy rather than a directly observed country numerator.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The methodology identifies Monaco within French trade coverage; the customs input is an imperfect national demand proxy rather than a directly observed country numerator.
12. Hosokawa Micron - FY2025 Financial Results Presentation, November 25, 2025 (Japanese)
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; material attribution modeled.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; material attribution modeled.
13. Pyrum Innovations AG - Interim Group Report January 1 to June 30, 2025
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The purchaser's 2025 report records a grinding-plant installation associated with recovered carbon black; no downstream material revenue is counted.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The purchaser's 2025 report records a grinding-plant installation associated with recovered carbon black; no downstream material revenue is counted.
14. LG Energy Solution Releases 2025 Financial Results - January 29, 2026
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Existing-asset reuse strategy qualifies a direct downstream-demand-to-new-carbon-material-mill investment inference.

9.7. Industrial Minerals

Table 78. Global Ultra Fine Grinding Mill Market Size, by Industrial Minerals, by Region, 2017-2040 (USD Million)

Region	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Africa	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Asia-Pacific	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Europe	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Latin America	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Middle East	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
North America	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 79. Global Ultra Fine Grinding Mill Market Size, by Industrial Minerals, by Group, 2017-2040 (USD Million)

Group	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
ASEAN	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
BRICS	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
European Union	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
G7	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
GCC	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
NATO	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx

Table 80. Global Ultra Fine Grinding Mill Market Size, by Industrial Minerals, by Country, 2017-2040 (USD Million)

Country	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Australia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Brazil	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Canada	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
China	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
France	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Germany	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
India	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Italy	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Japan	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mexico	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Russia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
South Korea	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Spain	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United Kingdom	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United States	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Others	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Sources & Evidence

1. Stirred media mills in the mining industry: Material grindability, energy-size relationships, and operating conditions

   · Taxonomy evidence: Industrial minerals are identified as grinding targets whose particle properties are tailored for functionality rather than metallic-mineral liberation.

2. Report of Investigations 7641: Ultrafine Grinding of Several Industrial Minerals by the Attrition-Grinding Process

   · Taxonomy evidence: The Bureau of Mines publication identifies mica, pyrophyllite, talc, marble, barite, and fluorite as industrial minerals addressed by ultrafine grinding. The 1972 record supports established material terminology, not current equipment demand. ([stacks.cdc.gov](https://stacks.cdc.gov/view/cdc/xx.xx))

3. Mach for mixing/kneading/crushing/grinding etc imports by country | 2024
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: 2024 gross machinery imports provide the purchasing-index input: U.S. HS xx.xx imports were USD xx.xx. These are broad machinery purchases, not ultrafine mill sales.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: 2024 gross machinery imports provide the purchasing-index input: U.S. HS xx.xx imports were USD xx.xx. These are broad machinery purchases, not ultrafine mill sales.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Country observations include Brazil USD xx.xx and Argentina USD xx.xx under HS xx.xx supporting the regional model's purchasing inputs.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country observations include Brazil USD xx.xx and Argentina USD xx.xx under HS xx.xx supporting the regional model's purchasing inputs.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: HS xx.xx imports include Germany USD xx.xx and France USD xx.xx; individual country records, rather than the EU aggregate, enter the allocation.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: HS xx.xx imports include Germany USD xx.xx and France USD xx.xx; individual country records, rather than the EU aggregate, enter the allocation.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Turkey USD xx.xx and Saudi Arabia USD xx.xx are broad machinery purchasing inputs, not observed qualifying-market numerators.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Turkey USD xx.xx and Saudi Arabia USD xx.xx are broad machinery purchasing inputs, not observed qualifying-market numerators.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: South Africa USD xx.xx and Egypt USD xx.xx, together with additional African reporters, anchor the purchasing baskets.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: South Africa USD xx.xx and Egypt USD xx.xx, together with additional African reporters, anchor the purchasing baskets.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: China USD xx.xx, Indonesia USD xx.xx and Japan USD xx.xx anchor the regional purchasing index before explicit local-supply adjustments.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: China USD xx.xx, Indonesia USD xx.xx and Japan USD xx.xx anchor the regional purchasing index before explicit local-supply adjustments.

4. Crushing/grinding machines for earth/ stone/ore imports by country | 2024
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: 2024 mineral crushing/grinding imports supply the secondary purchasing-index input; they contain out-of-scope ordinary crushers and are not treated as qualifying market revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: 2024 mineral crushing/grinding imports supply the secondary purchasing-index input; they contain out-of-scope ordinary crushers and are not treated as qualifying market revenue.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Country-level mineral machinery import observations support the Latin American purchasing basket and its explicitly modeled mining/package adjustments.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country-level mineral machinery import observations support the Latin American purchasing basket and its explicitly modeled mining/package adjustments.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: European national import observations provide the mineral-machinery component of the common purchasing index; the regional aggregate is not an extra country.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: European national import observations provide the mineral-machinery component of the common purchasing index; the regional aggregate is not an extra country.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Saudi Arabia and Turkey have separately reported mineral machinery imports, supporting national rather than bloc-wide purchasing inputs.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Saudi Arabia and Turkey have separately reported mineral machinery imports, supporting national rather than bloc-wide purchasing inputs.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: African reporter observations include major destinations outside the mandatory-country inventory, constraining a substantial noncatalog demand pool.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: African reporter observations include major destinations outside the mandatory-country inventory, constraining a substantial noncatalog demand pool.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Asia-Pacific and Central Asian reporter observations anchor the mineral-machinery component and unlisted-destination basket.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Asia-Pacific and Central Asian reporter observations anchor the mineral-machinery component and unlisted-destination basket.
5. Mach for mixing/kneading/crushing/grinding etc imports by country | 2021
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports were USD xx.xx. The model applies a qualified timing/access bridge and does not describe this as current trade.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports were USD xx.xx. The model applies a qualified timing/access bridge and does not describe this as current trade.
6. Crushing/grinding machines for earth/ stone/ore imports by country | 2021
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports of USD xx.xx provide the second historical purchasing primitive; the 2025 and 2032 allocations remain modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports of USD xx.xx provide the second historical purchasing primitive; the 2025 and 2032 allocations remain modeled.

7. World Manufacturing Production and Trade, Quarter IV 2025
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The report's mixed North American manufacturing conditions constrain a uniform high-growth assumption; output is not equated with mill purchasing.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Recent Latin American manufacturing weakness is counterevidence to immediate region-wide acceleration; forecast equipment factors remain conditional.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: European manufacturing stagnation and national divergence constrain the assumed relative equipment-purchasing path.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country-level manufacturing heterogeneity constrains the forecast; no single regional output rate is converted into machinery demand.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: African output observations include national counterexamples, supporting differentiated rather than uniform purchasing assumptions.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: China and other Asian manufacturing expansion, with national exceptions, provides directional context rather than an observed ultrafine-equipment growth rate.
8. Business Unit Grinding & Dispersing - NETZSCH
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The supplier documents local grinding-equipment production and commercial operations in Germany, the United States, Brazil, Russia, India and China. This supports considering domestic supply omitted by import statistics, but does not measure the model's correction factors.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The supplier documents local grinding-equipment production and commercial operations in Germany, the United States, Brazil, Russia, India and China. This supports considering domestic supply omitted by import statistics, but does not measure the model's correction factors.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Documented local commercial supply in China and India qualifies an import-only purchasing model; manufacturing location is not itself counted as buyer demand.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Documented local commercial supply in China and India qualifies an import-only purchasing model; manufacturing location is not itself counted as buyer demand.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Documented U.S. production and local commercial operations support an explicit, uncertain domestic-supply bridge rather than treating imports as the entire numerator.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Documented U.S. production and local commercial operations support an explicit, uncertain domestic-supply bridge rather than treating imports as the entire numerator.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Brazilian local production and commercial operations qualify reliance on imports alone, without establishing the assumed domestic sales amount.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Brazilian local production and commercial operations qualify reliance on imports alone, without establishing the assumed domestic sales amount.
9. High Energy Planetary Ball Mill - IIT Bombay
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The 2024 solicitation concerns one mill and requires two registration stages. It supports a purchaser-specific access constraint, not an award, national procurement conversion rate or forecast revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The 2024 solicitation concerns one mill and requires two registration stages. It supports a purchaser-specific access constraint, not an award, national procurement conversion rate or forecast revenue.

10. Metso receives order for grinding mills to a copper project in Africa
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The EUR xx.xx August 2024 HIGmill equipment/auxiliary/services order establishes a commercial package in Africa but identifies neither country nor annual revenue recognition. It constrains attribution and is not added to 2025 demand.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The EUR xx.xx August 2024 HIGmill equipment/auxiliary/services order establishes a commercial package in Africa but identifies neither country nor annual revenue recognition. It constrains attribution and is not added to 2025 demand.
11. Methodology - UNIDO Industrial Analytics Platform
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The methodology notes that U.S. trade coverage includes Puerto Rico, reinforcing that the national purchasing proxy must not be renormalized to the xx.xx-state inventory.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The methodology notes that U.S. trade coverage includes Puerto Rico, reinforcing that the national purchasing proxy must not be renormalized to the xx.xx-state inventory.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The methodology identifies Monaco within French trade coverage; the customs input is an imperfect national demand proxy rather than a directly observed country numerator.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The methodology identifies Monaco within French trade coverage; the customs input is an imperfect national demand proxy rather than a directly observed country numerator.
12. Hosokawa Micron - FY2025 Financial Results Presentation, November 25, 2025 (Japanese)
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; material attribution modeled.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; material attribution modeled.

9.8. Polymers and Elastomers

Table 81. Global Ultra Fine Grinding Mill Market Size, by Polymers and Elastomers, by Region, 2017-2040 (USD Million)

Region	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Africa	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Asia-Pacific	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Europe	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Latin America	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Middle East	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
North America	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 82. Global Ultra Fine Grinding Mill Market Size, by Polymers and Elastomers, by Group, 2017-2040 (USD Million)

Group	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
ASEAN	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
BRICS	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
European Union	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
G7	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
GCC	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
NATO	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx

Table 83. Global Ultra Fine Grinding Mill Market Size, by Polymers and Elastomers, by Country, 2017-2040 (USD Million)

Country	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Australia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Brazil	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Canada	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
China	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
France	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Germany	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
India	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Italy	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Japan	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mexico	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Russia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
South Korea	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Spain	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United Kingdom	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United States	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Others	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Sources & Evidence

1. UNSD Classification Detail - ISIC Rev.4, Division 20: Chemicals and Chemical Products
   - Taxonomy evidence: Primary plastics and synthetic rubber are included in the basic-chemical group, demonstrating why polymer material identity and finished-product buyer industry must remain separate.

2. Nippon Coke & Engineering - Commission Processing
   - Taxonomy evidence: Thermosetting resin is a named grinding-service material.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Thermosetting resin supports a polymer-material category premise.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Thermosetting resin supports a polymer-material category premise.
3. A. Ebbecke Verfahrenstechnik - Micronization / Grinding
   - Taxonomy evidence: Plastics, plastic granulates, and resins are identified within the processor's own commercial grinding activities.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Plastic granulates and resins establish material coverage, not downstream customers' equipment ownership.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Plastic granulates and resins establish material coverage, not downstream customers' equipment ownership.
4. FiberLean - Industrial MFC Production Equipment for On-Site Microfibrillated Cellulose Manufacture
   - Taxonomy evidence: Cellulose pulp is identified as the equipment's material input. Whether a particular duty qualifies as particle-size reduction rather than fiber morphology modification requires separate boundary confirmation.
5. Mach for mixing/kneading/crushing/grinding etc imports by country | 2024
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: 2024 gross machinery imports provide the purchasing-index input: U.S. HS xx.xx imports were USD xx.xx. These are broad machinery purchases, not ultrafine mill sales.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: 2024 gross machinery imports provide the purchasing-index input: U.S. HS xx.xx imports were USD xx.xx. These are broad machinery purchases, not ultrafine mill sales.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Country observations include Brazil USD xx.xx and Argentina USD xx.xx under HS xx.xx supporting the regional model's purchasing inputs.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country observations include Brazil USD xx.xx and Argentina USD xx.xx under HS xx.xx supporting the regional model's purchasing inputs.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: HS xx.xx imports include Germany USD xx.xx and France USD xx.xx; individual country records, rather than the EU aggregate, enter the allocation.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: HS xx.xx imports include Germany USD xx.xx and France USD xx.xx; individual country records, rather than the EU aggregate, enter the allocation.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Turkey USD xx.xx and Saudi Arabia USD xx.xx are broad machinery purchasing inputs, not observed qualifying-market numerators.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Turkey USD xx.xx and Saudi Arabia USD xx.xx are broad machinery purchasing inputs, not observed qualifying-market numerators.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: South Africa USD xx.xx and Egypt USD xx.xx, together with additional African reporters, anchor the purchasing baskets.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: South Africa USD xx.xx and Egypt USD xx.xx, together with additional African reporters, anchor the purchasing baskets.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: China USD xx.xx, Indonesia USD xx.xx and Japan USD xx.xx anchor the regional purchasing index before explicit local-supply adjustments.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: China USD xx.xx, Indonesia USD xx.xx and Japan USD xx.xx anchor the regional purchasing index before explicit local-supply adjustments.

6. Crushing/grinding machines for earth/ stone/ore imports by country | 2024
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: 2024 mineral crushing/grinding imports supply the secondary purchasing-index input; they contain out-of-scope ordinary crushers and are not treated as qualifying market revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: 2024 mineral crushing/grinding imports supply the secondary purchasing-index input; they contain out-of-scope ordinary crushers and are not treated as qualifying market revenue.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Country-level mineral machinery import observations support the Latin American purchasing basket and its explicitly modeled mining/package adjustments.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country-level mineral machinery import observations support the Latin American purchasing basket and its explicitly modeled mining/package adjustments.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: European national import observations provide the mineral-machinery component of the common purchasing index; the regional aggregate is not an extra country.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: European national import observations provide the mineral-machinery component of the common purchasing index; the regional aggregate is not an extra country.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Saudi Arabia and Turkey have separately reported mineral machinery imports, supporting national rather than bloc-wide purchasing inputs.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Saudi Arabia and Turkey have separately reported mineral machinery imports, supporting national rather than bloc-wide purchasing inputs.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: African reporter observations include major destinations outside the mandatory-country inventory, constraining a substantial noncatalog demand pool.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: African reporter observations include major destinations outside the mandatory-country inventory, constraining a substantial noncatalog demand pool.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Asia-Pacific and Central Asian reporter observations anchor the mineral-machinery component and unlisted-destination basket.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Asia-Pacific and Central Asian reporter observations anchor the mineral-machinery component and unlisted-destination basket.
7. Mach for mixing/kneading/crushing/grinding etc imports by country | 2021
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports were USD xx.xx. The model applies a qualified timing/access bridge and does not describe this as current trade.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports were USD xx.xx. The model applies a qualified timing/access bridge and does not describe this as current trade.
8. Crushing/grinding machines for earth/ stone/ore imports by country | 2021
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports of USD xx.xx provide the second historical purchasing primitive; the 2025 and 2032 allocations remain modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports of USD xx.xx provide the second historical purchasing primitive; the 2025 and 2032 allocations remain modeled.

9. World Manufacturing Production and Trade, Quarter IV 2025
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The report's mixed North American manufacturing conditions constrain a uniform high-growth assumption; output is not equated with mill purchasing.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Recent Latin American manufacturing weakness is counterevidence to immediate region-wide acceleration; forecast equipment factors remain conditional.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: European manufacturing stagnation and national divergence constrain the assumed relative equipment-purchasing path.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country-level manufacturing heterogeneity constrains the forecast; no single regional output rate is converted into machinery demand.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: African output observations include national counterexamples, supporting differentiated rather than uniform purchasing assumptions.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: China and other Asian manufacturing expansion, with national exceptions, provides directional context rather than an observed ultrafine-equipment growth rate.
10. Business Unit Grinding & Dispersing - NETZSCH
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The supplier documents local grinding-equipment production and commercial operations in Germany, the United States, Brazil, Russia, India and China. This supports considering domestic supply omitted by import statistics, but does not measure the model's correction factors.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The supplier documents local grinding-equipment production and commercial operations in Germany, the United States, Brazil, Russia, India and China. This supports considering domestic supply omitted by import statistics, but does not measure the model's correction factors.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Documented local commercial supply in China and India qualifies an import-only purchasing model; manufacturing location is not itself counted as buyer demand.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Documented local commercial supply in China and India qualifies an import-only purchasing model; manufacturing location is not itself counted as buyer demand.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Documented U.S. production and local commercial operations support an explicit, uncertain domestic-supply bridge rather than treating imports as the entire numerator.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Documented U.S. production and local commercial operations support an explicit, uncertain domestic-supply bridge rather than treating imports as the entire numerator.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Brazilian local production and commercial operations qualify reliance on imports alone, without establishing the assumed domestic sales amount.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Brazilian local production and commercial operations qualify reliance on imports alone, without establishing the assumed domestic sales amount.
11. High Energy Planetary Ball Mill - IIT Bombay
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The 2024 solicitation concerns one mill and requires two registration stages. It supports a purchaser-specific access constraint, not an award, national procurement conversion rate or forecast revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The 2024 solicitation concerns one mill and requires two registration stages. It supports a purchaser-specific access constraint, not an award, national procurement conversion rate or forecast revenue.

12. Metso receives order for grinding mills to a copper project in Africa
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The EUR xx.xx August 2024 HIGmill equipment/auxiliary/services order establishes a commercial package in Africa but identifies neither country nor annual revenue recognition. It constrains attribution and is not added to 2025 demand.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The EUR xx.xx August 2024 HIGmill equipment/auxiliary/services order establishes a commercial package in Africa but identifies neither country nor annual revenue recognition. It constrains attribution and is not added to 2025 demand.
13. Methodology - UNIDO Industrial Analytics Platform
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The methodology notes that U.S. trade coverage includes Puerto Rico, reinforcing that the national purchasing proxy must not be renormalized to the xx.xx-state inventory.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The methodology notes that U.S. trade coverage includes Puerto Rico, reinforcing that the national purchasing proxy must not be renormalized to the xx.xx-state inventory.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The methodology identifies Monaco within French trade coverage; the customs input is an imperfect national demand proxy rather than a directly observed country numerator.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The methodology identifies Monaco within French trade coverage; the customs input is an imperfect national demand proxy rather than a directly observed country numerator.
14. Hosokawa Micron - FY2025 Financial Results Presentation, November 25, 2025 (Japanese)
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; material attribution modeled.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; material attribution modeled.

9.9. Metals and Alloys

Table 84. Global Ultra Fine Grinding Mill Market Size, by Metals and Alloys, by Region, 2017-2040 (USD Million)

Region	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Africa	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Asia-Pacific	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Europe	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Latin America	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Middle East	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
North America	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 85. Global Ultra Fine Grinding Mill Market Size, by Metals and Alloys, by Group, 2017-2040 (USD Million)

Group	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
ASEAN	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
BRICS	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
European Union	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
G7	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
GCC	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
NATO	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx

Table 86. Global Ultra Fine Grinding Mill Market Size, by Metals and Alloys, by Country, 2017-2040 (USD Million)

Country	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Australia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Brazil	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Canada	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
China	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
France	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Germany	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
India	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Italy	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Japan	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mexico	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Russia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
South Korea	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Spain	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United Kingdom	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United States	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Others	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Sources & Evidence

1. Nippon Coke & Engineering - Commission Processing
   - Taxonomy evidence: Iron, nickel, and copper powders are named grinding-service examples, although their individual ultrafine finished-particle specifications are not established.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Metal powders are named commercial processing materials.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Metal powders are named commercial processing materials.
2. Mach for mixing/kneading/crushing/grinding etc imports by country | 2024
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: 2024 gross machinery imports provide the purchasing-index input: U.S. HS xx.xx imports were USD xx.xx. These are broad machinery purchases, not ultrafine mill sales.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: 2024 gross machinery imports provide the purchasing-index input: U.S. HS xx.xx imports were USD xx.xx. These are broad machinery purchases, not ultrafine mill sales.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Country observations include Brazil USD xx.xx and Argentina USD xx.xx under HS xx.xx supporting the regional model's purchasing inputs.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country observations include Brazil USD xx.xx and Argentina USD xx.xx under HS xx.xx supporting the regional model's purchasing inputs.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: HS xx.xx imports include Germany USD xx.xx and France USD xx.xx; individual country records, rather than the EU aggregate, enter the allocation.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: HS xx.xx imports include Germany USD xx.xx and France USD xx.xx; individual country records, rather than the EU aggregate, enter the allocation.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Turkey USD xx.xx and Saudi Arabia USD xx.xx are broad machinery purchasing inputs, not observed qualifying-market numerators.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Turkey USD xx.xx and Saudi Arabia USD xx.xx are broad machinery purchasing inputs, not observed qualifying-market numerators.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: South Africa USD xx.xx and Egypt USD xx.xx, together with additional African reporters, anchor the purchasing baskets.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: South Africa USD xx.xx and Egypt USD xx.xx, together with additional African reporters, anchor the purchasing baskets.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: China USD xx.xx, Indonesia USD xx.xx and Japan USD xx.xx anchor the regional purchasing index before explicit local-supply adjustments.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: China USD xx.xx, Indonesia USD xx.xx and Japan USD xx.xx anchor the regional purchasing index before explicit local-supply adjustments.

3. Crushing/grinding machines for earth/ stone/ore imports by country | 2024
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: 2024 mineral crushing/grinding imports supply the secondary purchasing-index input; they contain out-of-scope ordinary crushers and are not treated as qualifying market revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: 2024 mineral crushing/grinding imports supply the secondary purchasing-index input; they contain out-of-scope ordinary crushers and are not treated as qualifying market revenue.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Country-level mineral machinery import observations support the Latin American purchasing basket and its explicitly modeled mining/package adjustments.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country-level mineral machinery import observations support the Latin American purchasing basket and its explicitly modeled mining/package adjustments.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: European national import observations provide the mineral-machinery component of the common purchasing index; the regional aggregate is not an extra country.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: European national import observations provide the mineral-machinery component of the common purchasing index; the regional aggregate is not an extra country.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Saudi Arabia and Turkey have separately reported mineral machinery imports, supporting national rather than bloc-wide purchasing inputs.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Saudi Arabia and Turkey have separately reported mineral machinery imports, supporting national rather than bloc-wide purchasing inputs.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: African reporter observations include major destinations outside the mandatory-country inventory, constraining a substantial noncatalog demand pool.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: African reporter observations include major destinations outside the mandatory-country inventory, constraining a substantial noncatalog demand pool.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Asia-Pacific and Central Asian reporter observations anchor the mineral-machinery component and unlisted-destination basket.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Asia-Pacific and Central Asian reporter observations anchor the mineral-machinery component and unlisted-destination basket.
4. Mach for mixing/kneading/crushing/grinding etc imports by country | 2021
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports were USD xx.xx. The model applies a qualified timing/access bridge and does not describe this as current trade.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports were USD xx.xx. The model applies a qualified timing/access bridge and does not describe this as current trade.
5. Crushing/grinding machines for earth/ stone/ore imports by country | 2021
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports of USD xx.xx provide the second historical purchasing primitive; the 2025 and 2032 allocations remain modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports of USD xx.xx provide the second historical purchasing primitive; the 2025 and 2032 allocations remain modeled.

6. World Manufacturing Production and Trade, Quarter IV 2025
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The report's mixed North American manufacturing conditions constrain a uniform high-growth assumption; output is not equated with mill purchasing.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Recent Latin American manufacturing weakness is counterevidence to immediate region-wide acceleration; forecast equipment factors remain conditional.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: European manufacturing stagnation and national divergence constrain the assumed relative equipment-purchasing path.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country-level manufacturing heterogeneity constrains the forecast; no single regional output rate is converted into machinery demand.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: African output observations include national counterexamples, supporting differentiated rather than uniform purchasing assumptions.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: China and other Asian manufacturing expansion, with national exceptions, provides directional context rather than an observed ultrafine-equipment growth rate.
7. Business Unit Grinding & Dispersing - NETZSCH
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The supplier documents local grinding-equipment production and commercial operations in Germany, the United States, Brazil, Russia, India and China. This supports considering domestic supply omitted by import statistics, but does not measure the model's correction factors.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The supplier documents local grinding-equipment production and commercial operations in Germany, the United States, Brazil, Russia, India and China. This supports considering domestic supply omitted by import statistics, but does not measure the model's correction factors.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Documented local commercial supply in China and India qualifies an import-only purchasing model; manufacturing location is not itself counted as buyer demand.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Documented local commercial supply in China and India qualifies an import-only purchasing model; manufacturing location is not itself counted as buyer demand.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Documented U.S. production and local commercial operations support an explicit, uncertain domestic-supply bridge rather than treating imports as the entire numerator.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Documented U.S. production and local commercial operations support an explicit, uncertain domestic-supply bridge rather than treating imports as the entire numerator.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Brazilian local production and commercial operations qualify reliance on imports alone, without establishing the assumed domestic sales amount.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Brazilian local production and commercial operations qualify reliance on imports alone, without establishing the assumed domestic sales amount.
8. High Energy Planetary Ball Mill - IIT Bombay
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The 2024 solicitation concerns one mill and requires two registration stages. It supports a purchaser-specific access constraint, not an award, national procurement conversion rate or forecast revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The 2024 solicitation concerns one mill and requires two registration stages. It supports a purchaser-specific access constraint, not an award, national procurement conversion rate or forecast revenue.

9. Metso receives order for grinding mills to a copper project in Africa
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The EUR xx.xx August 2024 HIGmill equipment/auxiliary/services order establishes a commercial package in Africa but identifies neither country nor annual revenue recognition. It constrains attribution and is not added to 2025 demand.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The EUR xx.xx August 2024 HIGmill equipment/auxiliary/services order establishes a commercial package in Africa but identifies neither country nor annual revenue recognition. It constrains attribution and is not added to 2025 demand.
10. Methodology - UNIDO Industrial Analytics Platform
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The methodology notes that U.S. trade coverage includes Puerto Rico, reinforcing that the national purchasing proxy must not be renormalized to the xx.xx-state inventory.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The methodology notes that U.S. trade coverage includes Puerto Rico, reinforcing that the national purchasing proxy must not be renormalized to the xx.xx-state inventory.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The methodology identifies Monaco within French trade coverage; the customs input is an imperfect national demand proxy rather than a directly observed country numerator.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The methodology identifies Monaco within French trade coverage; the customs input is an imperfect national demand proxy rather than a directly observed country numerator.
11. Hosokawa Micron - FY2025 Financial Results Presentation, November 25, 2025 (Japanese)
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; material attribution modeled.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; material attribution modeled.

10. Ultra Fine Grinding Mill Market, by Buyer Industry

[redacted] Wood-related research does not make the university a wood-products manufacturer. Suppliers should distinguish the application user, contracting organization, and equipment operator before qualifying the account.

[redacted] Human-food provisions should not be generalized to every feed or beverage setting, and neither rule approves a mill brand. Suppliers should establish the applicable purchasing environment and documentation before extending a reference across these industries.

[redacted] A downstream material customer is therefore not automatically the mill purchaser. Equipment suppliers should identify whether the establishment retains milling investment and support obligations or buys processed inputs; pigment-processing evidence should not be extended automatically to fuel manufacturing or fabricated-metal plants.

Rubber and Plastics Product Manufacturing must also be distinguished from Materials Recovery and Recycling. [redacted] Suppliers should not assume that a recycled-material label identifies the budget owner or purchasing requirements.

[redacted]

[illegible] Wood, Pulp, and Paper Manufacturing has a more directly targeted supplier example: FiberLean offers stirred-media equipment to pulp, paper, board, and related producers. That sector-specific offering supports account targeting, not proof of a particular customer's purchase.

Power and Heat Generation remains a model-specific commercial verification question. Coperion describes power-generation applications within its broader pulverizing portfolio and separately lists ultrafine equipment. [illegible]

Figure 14. Global Ultra Fine Grinding Mill Market Size, by Buyer Industry, 2025 (%)

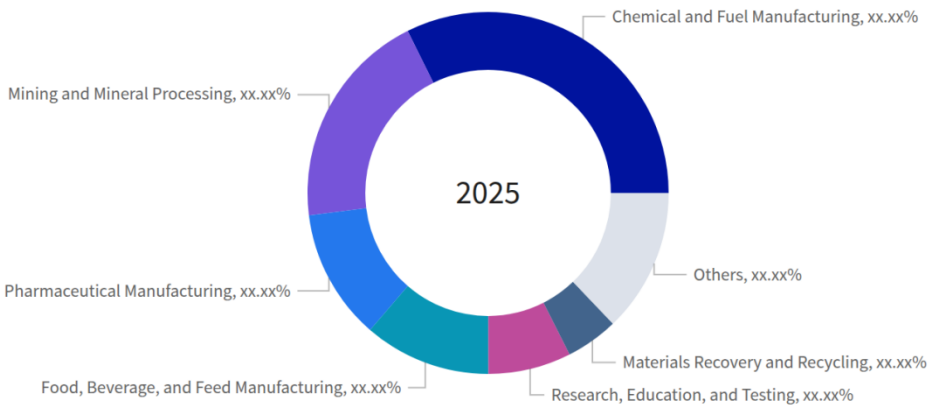


Figure 15. Global Ultra Fine Grinding Mill Market, by Buyer Industry, 2032 (USD Million)

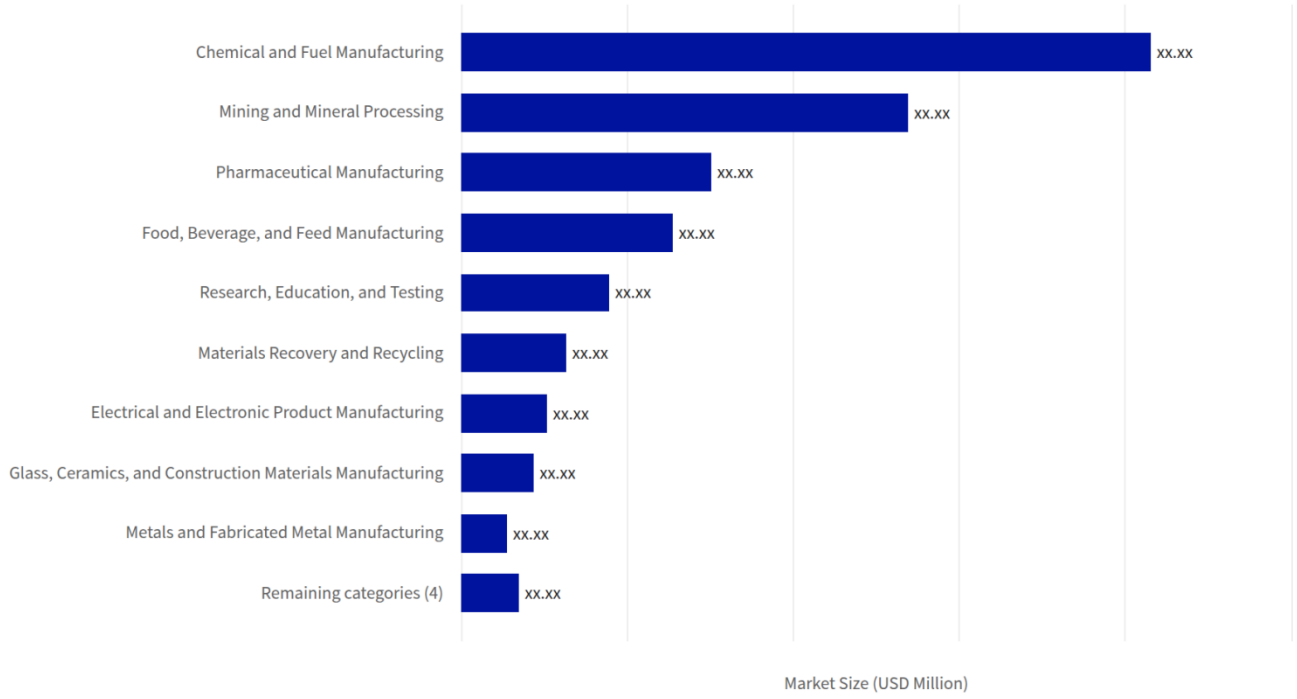


Table 87. Global Ultra Fine Grinding Mill Market, by Buyer Industry growth contribution, 2025-2032

Category	2025 value (USD Million)	2032 value (USD Million)	Added value (USD Million)	2025 share (%)	2032 share (%)	Change (pp)	Growth share (%)	CAGR (%)
Chemical and Fuel Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Electrical and Electronic Product Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Food, Beverage, and Feed Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Glass, Ceramics, and Construction Materials Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Materials Recovery and Recycling	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Metals and Fabricated Metal Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mining and Mineral Processing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Pharmaceutical Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Power and Heat Generation	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Research, Education, and Testing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Rubber and Plastics Product Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Unallocated / remaining scope	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wood, Pulp, and Paper Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Scope total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 88. Global Ultra Fine Grinding Mill Market Size, by Buyer Industry, 2017-2040 (USD Million)

Buyer Industry	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Chemical and Fuel Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Electrical and Electronic Product Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Food, Beverage, and Feed Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Glass, Ceramics, and Construction Materials Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Materials Recovery and Recycling	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Metals and Fabricated Metal Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mining and Mineral Processing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Pharmaceutical Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Power and Heat Generation	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Research, Education, and Testing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Rubber and Plastics Product Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wood, Pulp, and Paper Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Others	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Sources & Evidence

1. 21 CFR 211.63 - Equipment Design, Size, and Location

   · U.S. drug-product equipment requirements address appropriate design, adequate size, and suitability for intended use. They do not approve a particular equipment brand. ([ecfr.gov](https://www.ecfr.gov/current/title-xx.xx/chapter-I/subchapter-C/part-xx.xx/subpart-D/section-xx.xx))

2. 21 CFR 117.40 - Equipment and Utensils

   · U.S. human-food equipment provisions address cleanability, maintenance, allergen cross-contact, and contamination. These are application-specific obligations, not universal requirements for every activity within the combined food, beverage, and feed category. ([ecfr.gov](https://www.ecfr.gov/current/title-xx.xx/chapter-I/subchapter-B/part-xx.xx/subpart-B/section-xx.xx))

3. Metso Receives Order for Grinding Mills to a Copper Project in Africa
   - The order concerns an African copper mining project and bundled equipment and services, supporting a Mining and Mineral Processing purchasing context without identifying the unnamed customer. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The award concerns an African mining project; it does not disclose the global mining-buyer share.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The award concerns an African mining project; it does not disclose the global mining-buyer share.
4. NETZSCH and MESNAC Partner to Deliver Turnkey Solutions for Battery Industry
   - NETZSCH announced its MESNAC INTELLIGENT battery-industry integration partnership on June xx.xx 2025. The announcement establishes a supplier relationship, not the operating identity or industry allocation of each eventual customer. ([grinding.netzsch.com](https://grinding.netzsch.com/en/news/2025/netzsch-and-mesnac-partner-do-deliver-turnkey-solutions-for-battery-industry))
5. High Energy Planetary Ball Mill - IIT Bombay
   - IIT Bombay's 2024 planetary-ball-mill solicitation identifies its Department of Chemistry and requires vendor and e-tender registration before participation. It is a purchasing request, not an award record. ([iitb.ac.in](https://www.iitb.ac.in/tenders/high-energy-planetary-ball-mill))
6. Ultrafin Mill: Super Masscolloider, Masuko MKCA6-5J CE - University of Ljubljana
   - The equipment inventory places the Masuko grinder in the university's wood-science department. Its material subject does not make the operating institution a wood-products manufacturer. ([bf.uni-lj.si](https://www.bf.uni-lj.si/en/research/research-equipment/xx.xx/ultrafin-mill-super-masscolloider%2C-ultrafine-friction-grinding-machine%2C-masuko-mkca65j-ce))
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The university inventories a laboratory ultrafine mill within wood science; the institutional operator is not a wood-products manufacturer.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The university inventories a laboratory ultrafine mill within wood science; the institutional operator is not a wood-products manufacturer.
7. Commission Processing - NIPPON COKE & ENGINEERING CO., LTD.
   - Nippon describes third-party commission processing. That establishes a processor route, not equipment ownership by every downstream customer of the processed materials. ([nc-kakouki.co.jp](https://www.nc-kakouki.co.jp/en/chemical/jutaku/))
8. ISIC Rev.4, Section C: Manufacturing - United Nations Statistics Division
   - The United Nations manufacturing classification separately identifies petroleum products, chemicals, rubber and plastics products, nonmetallic mineral products, basic metals, and fabricated metal products. These are activity boundaries, not evidence of mill adoption. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Detail/EN/xx.xx/C))
   - Taxonomy evidence: ISIC distinguishes manufacturing from mineral beneficiation and secondary-material recovery, and recognizes processing performed for third parties. These distinctions support operating-activity allocation rather than classification by customer destination. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Detail/EN/xx.xx/C))

9. ISIC Rev.4, Class 3830: Materials Recovery - United Nations Statistics Division
   - The materials-recovery classification includes secondary-raw-material recovery but excludes manufacture of new final products from recovered inputs. This supports distinguishing recovery establishments from downstream manufacturers. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Detail/EN/xx.xx/xx.xx))
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The official classification distinguishes secondary-material recovery from manufacture of new final products; it supplies no equipment sales weight.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The official classification distinguishes secondary-material recovery from manufacture of new final products; it supplies no equipment sales weight.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Recovered-input use alone does not classify the equipment operator as a recovery establishment rather than a product manufacturer.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Recovered-input use alone does not classify the equipment operator as a recovery establishment rather than a product manufacturer.
10. ISIC Rev.4, Division 27: Manufacture of Electrical Equipment - United Nations Statistics Division
    - Electrical-equipment manufacturing explicitly includes batteries and accumulators. That classification does not independently assign every upstream battery-material producer to electrical-equipment manufacturing. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Detail/EN/xx.xx/xx.xx))
11. Industrial MFC Production Equipment for On-Site Microfibrillated Cellulose Manufacture - FiberLean
    - FiberLean markets stirred-media equipment to pulp, paper, board, tissue, molded-fiber, and specialty-paper producers. This establishes sector targeting rather than a verified purchase by a particular customer. ([fiberlean.com](https://fiberlean.com/mfc-production-equipment/))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The manufacturer's commercial offering targets pulp, paper and related establishments; it is not a measured industry sales share.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The manufacturer's commercial offering targets pulp, paper and related establishments; it is not a measured industry sales share.
12. Pulverizing Equipment - Coperion
    - Coperion's pulverizing portfolio names power-generation applications and separately lists ultrafine equipment. The page does not establish a model-specific qualifying purchase by a named power-generation operator. ([coperion.com](https://www.coperion.com/en/products-services/process-equipment/pulverizing))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The broader portfolio names power-generation applications and separately lists ultrafine equipment; this limits, rather than verifies, the assumed qualifying power-buyer allocation.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The broader portfolio names power-generation applications and separately lists ultrafine equipment; this limits, rather than verifies, the assumed qualifying power-buyer allocation.
13. NRRI advances efficient grinding technology on the Iron Range
    - Taxonomy evidence: The institute describes its own installation separately from iron-industry clients and a client's equipment purchase. Those distinctions support assigning industry to the actual operating establishment rather than its clients or research beneficiaries. ([nrri.umn.edu](https://nrri.umn.edu/news/stm-vertical-grinding))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operating research institute is distinct from its mining clients, supporting buyer/material separation.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operating research institute is distinct from its mining clients, supporting buyer/material separation.

14. Jet Mill - Contract History | CanadaBuys
    - Taxonomy evidence: The separation of contracting and buying organizations demonstrates why an administrative purchaser must not automatically be treated as the operating end user.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The record distinguishes Natural Resources Canada as buying organization from PSPC as contracting organization, supporting establishment attribution.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The record distinguishes Natural Resources Canada as buying organization from PSPC as contracting organization, supporting establishment attribution.
15. A. Ebbecke Verfahrenstechnik - Micronization / Grinding
    - Taxonomy evidence: The company describes operating specialized grinding equipment for third-party processing, supporting treatment of contract processors as equipment operators rather than assuming their customers own the mills.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operator-side food-processing reference supports establishment attribution rather than automatically assigning equipment to its customers.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operator-side food-processing reference supports establishment attribution rather than automatically assigning equipment to its customers.
16. Asbury Advanced Materials - Manufacturing Capabilities
    - Taxonomy evidence: The company distinguishes its own manufacturing and toll-processing capabilities from customers avoiding capital investment, reinforcing the operator-versus-material-customer distinction.
17. Hosokawa Micron - FY2025 Financial Results Presentation, November 25, 2025 (Japanese)
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; establishment attribution modeled.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; establishment attribution modeled.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; buyer attribution assumed.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; buyer attribution assumed.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; qualifying power attribution unverified.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; qualifying power attribution unverified.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; institutional attribution assumed.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; institutional attribution assumed.
18. Pyrum Innovations AG - Interim Group Report January 1 to June 30, 2025
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The report establishes an actual recovery-business equipment context, while the exact attributable mill expenditure remains undisclosed.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The report establishes an actual recovery-business equipment context, while the exact attributable mill expenditure remains undisclosed.

19. LG Energy Solution Releases 2025 Financial Results - January 29, 2026
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Buyer investment restraint constrains the relative application multiplier; upstream chemical attribution remains separately assumed.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own battery-manufacturer financial and investment plans provide a counter-test, not an ultrafine equipment purchasing total.
20. Contract Manufacturing of Pharmaceuticals - YUKI GOSEI KOGYO CO., LTD.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The actual pharmaceutical manufacturing operator is distinct from customers outsourcing production; processing-service receipts remain excluded.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The actual pharmaceutical manufacturing operator is distinct from customers outsourcing production; processing-service receipts remain excluded.

10.1. Chemical and Fuel Manufacturing

Table 89. Global Ultra Fine Grinding Mill Market Size, by Chemical and Fuel Manufacturing, by Region, 2017-2040 (USD Million)

Region	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Africa	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Asia-Pacific	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Europe	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Latin America	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Middle East	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
North America	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 90. Global Ultra Fine Grinding Mill Market Size, by Chemical and Fuel Manufacturing, by Group, 2017-2040 (USD Million)

Group	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
ASEAN	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
BRICS	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
European Union	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
G7	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
GCC	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
NATO	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx

Table 91. Global Ultra Fine Grinding Mill Market Size, by Chemical and Fuel Manufacturing, by Country, 2017-2040 (USD Million)

Country	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Australia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Brazil	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Canada	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
China	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
France	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Germany	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
India	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Italy	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Japan	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mexico	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Russia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
South Korea	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Spain	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United Kingdom	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United States	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Others	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Sources & Evidence

1. Stirred media mills in the mining industry: Material grindability, energy-size relationships, and operating conditions
   · Taxonomy evidence: The review identifies pigments as an established industrial context for stirred-media milling; this supports a chemical-industry connection, not the fuel-manufacturing portion.
2. UNSD Classification Detail - ISIC Rev.4, Section C: Manufacturing
   · Taxonomy evidence: The manufacturing structure separately identifies coke/refined-petroleum products and chemicals. Combining these named activities is an analytical grouping, not evidence of qualifying equipment purchases.
3. UNSD Classification Detail - ISIC Rev.4, Division 20: Chemicals and Chemical Products
   · Taxonomy evidence: ISIC chemical manufacturing encompasses organic and inorganic raw-material transformation and distinguishes basic chemicals from intermediate and finished chemical products. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Detail/EN/xx.xx/xx.xx))

4. Mach for mixing/kneading/crushing/grinding etc imports by country | 2024
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: 2024 gross machinery imports provide the purchasing-index input: U.S. HS xx.xx imports were USD xx.xx. These are broad machinery purchases, not ultrafine mill sales.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: 2024 gross machinery imports provide the purchasing-index input: U.S. HS xx.xx imports were USD xx.xx. These are broad machinery purchases, not ultrafine mill sales.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Country observations include Brazil USD xx.xx and Argentina USD xx.xx under HS xx.xx supporting the regional model's purchasing inputs.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country observations include Brazil USD xx.xx and Argentina USD xx.xx under HS xx.xx supporting the regional model's purchasing inputs.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: HS xx.xx imports include Germany USD xx.xx and France USD xx.xx; individual country records, rather than the EU aggregate, enter the allocation.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: HS xx.xx imports include Germany USD xx.xx and France USD xx.xx; individual country records, rather than the EU aggregate, enter the allocation.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Turkey USD xx.xx and Saudi Arabia USD xx.xx are broad machinery purchasing inputs, not observed qualifying-market numerators.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Turkey USD xx.xx and Saudi Arabia USD xx.xx are broad machinery purchasing inputs, not observed qualifying-market numerators.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: South Africa USD xx.xx and Egypt USD xx.xx, together with additional African reporters, anchor the purchasing baskets.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: South Africa USD xx.xx and Egypt USD xx.xx, together with additional African reporters, anchor the purchasing baskets.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: China USD xx.xx, Indonesia USD xx.xx and Japan USD xx.xx anchor the regional purchasing index before explicit local-supply adjustments.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: China USD xx.xx, Indonesia USD xx.xx and Japan USD xx.xx anchor the regional purchasing index before explicit local-supply adjustments.

5. Crushing/grinding machines for earth/ stone/ore imports by country | 2024
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: 2024 mineral crushing/grinding imports supply the secondary purchasing-index input; they contain out-of-scope ordinary crushers and are not treated as qualifying market revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: 2024 mineral crushing/grinding imports supply the secondary purchasing-index input; they contain out-of-scope ordinary crushers and are not treated as qualifying market revenue.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Country-level mineral machinery import observations support the Latin American purchasing basket and its explicitly modeled mining/package adjustments.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country-level mineral machinery import observations support the Latin American purchasing basket and its explicitly modeled mining/package adjustments.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: European national import observations provide the mineral-machinery component of the common purchasing index; the regional aggregate is not an extra country.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: European national import observations provide the mineral-machinery component of the common purchasing index; the regional aggregate is not an extra country.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Saudi Arabia and Turkey have separately reported mineral machinery imports, supporting national rather than bloc-wide purchasing inputs.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Saudi Arabia and Turkey have separately reported mineral machinery imports, supporting national rather than bloc-wide purchasing inputs.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: African reporter observations include major destinations outside the mandatory-country inventory, constraining a substantial noncatalog demand pool.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: African reporter observations include major destinations outside the mandatory-country inventory, constraining a substantial noncatalog demand pool.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Asia-Pacific and Central Asian reporter observations anchor the mineral-machinery component and unlisted-destination basket.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Asia-Pacific and Central Asian reporter observations anchor the mineral-machinery component and unlisted-destination basket.
6. Mach for mixing/kneading/crushing/grinding etc imports by country | 2021
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports were USD xx.xx. The model applies a qualified timing/access bridge and does not describe this as current trade.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports were USD xx.xx. The model applies a qualified timing/access bridge and does not describe this as current trade.
7. Crushing/grinding machines for earth/ stone/ore imports by country | 2021
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports of USD xx.xx provide the second historical purchasing primitive; the 2025 and 2032 allocations remain modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports of USD xx.xx provide the second historical purchasing primitive; the 2025 and 2032 allocations remain modeled.

8. World Manufacturing Production and Trade, Quarter IV 2025
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The report's mixed North American manufacturing conditions constrain a uniform high-growth assumption; output is not equated with mill purchasing.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Recent Latin American manufacturing weakness is counterevidence to immediate region-wide acceleration; forecast equipment factors remain conditional.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: European manufacturing stagnation and national divergence constrain the assumed relative equipment-purchasing path.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country-level manufacturing heterogeneity constrains the forecast; no single regional output rate is converted into machinery demand.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: African output observations include national counterexamples, supporting differentiated rather than uniform purchasing assumptions.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: China and other Asian manufacturing expansion, with national exceptions, provides directional context rather than an observed ultrafine-equipment growth rate.
9. Business Unit Grinding & Dispersing - NETZSCH
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The supplier documents local grinding-equipment production and commercial operations in Germany, the United States, Brazil, Russia, India and China. This supports considering domestic supply omitted by import statistics, but does not measure the model's correction factors.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The supplier documents local grinding-equipment production and commercial operations in Germany, the United States, Brazil, Russia, India and China. This supports considering domestic supply omitted by import statistics, but does not measure the model's correction factors.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Documented local commercial supply in China and India qualifies an import-only purchasing model; manufacturing location is not itself counted as buyer demand.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Documented local commercial supply in China and India qualifies an import-only purchasing model; manufacturing location is not itself counted as buyer demand.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Documented U.S. production and local commercial operations support an explicit, uncertain domestic-supply bridge rather than treating imports as the entire numerator.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Documented U.S. production and local commercial operations support an explicit, uncertain domestic-supply bridge rather than treating imports as the entire numerator.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Brazilian local production and commercial operations qualify reliance on imports alone, without establishing the assumed domestic sales amount.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Brazilian local production and commercial operations qualify reliance on imports alone, without establishing the assumed domestic sales amount.
10. High Energy Planetary Ball Mill - IIT Bombay
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The 2024 solicitation concerns one mill and requires two registration stages. It supports a purchaser-specific access constraint, not an award, national procurement conversion rate or forecast revenue.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The 2024 solicitation concerns one mill and requires two registration stages. It supports a purchaser-specific access constraint, not an award, national procurement conversion rate or forecast revenue.

11. Metso receives order for grinding mills to a copper project in Africa
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The EUR xx.xx August 2024 HIGmill equipment/auxiliary/services order establishes a commercial package in Africa but identifies neither country nor annual revenue recognition. It constrains attribution and is not added to 2025 demand.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The EUR xx.xx August 2024 HIGmill equipment/auxiliary/services order establishes a commercial package in Africa but identifies neither country nor annual revenue recognition. It constrains attribution and is not added to 2025 demand.
12. Methodology - UNIDO Industrial Analytics Platform
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The methodology notes that U.S. trade coverage includes Puerto Rico, reinforcing that the national purchasing proxy must not be renormalized to the xx.xx-state inventory.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The methodology notes that U.S. trade coverage includes Puerto Rico, reinforcing that the national purchasing proxy must not be renormalized to the xx.xx-state inventory.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The methodology identifies Monaco within French trade coverage; the customs input is an imperfect national demand proxy rather than a directly observed country numerator.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The methodology identifies Monaco within French trade coverage; the customs input is an imperfect national demand proxy rather than a directly observed country numerator.
13. Hosokawa Micron - FY2025 Financial Results Presentation, November 25, 2025 (Japanese)
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; establishment attribution modeled.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; establishment attribution modeled.
14. LG Energy Solution Releases 2025 Financial Results - January 29, 2026
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Buyer investment restraint constrains the relative application multiplier; upstream chemical attribution remains separately assumed.

10.2. Mining and Mineral Processing

Table 92. Global Ultra Fine Grinding Mill Market Size, by Mining and Mineral Processing, by Region, 2017-2040 (USD Million)

Region	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Africa	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Asia-Pacific	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Europe	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Latin America	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Middle East	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
North America	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 93. Global Ultra Fine Grinding Mill Market Size, by Mining and Mineral Processing, by Group, 2017-2040 (USD Million)

Group	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
ASEAN	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
BRICS	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
European Union	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
G7	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
GCC	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
NATO	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx

Table 94. Global Ultra Fine Grinding Mill Market Size, by Mining and Mineral Processing, by Country, 2017-2040 (USD Million)

Country	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Australia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Brazil	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Canada	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
China	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
France	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Germany	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
India	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Italy	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Japan	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mexico	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Russia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
South Korea	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Spain	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United Kingdom	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United States	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Others	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Sources & Evidence

1. Stirred media mills in the mining industry: Material grindability, energy-size relationships, and operating conditions

   · Taxonomy evidence: The review establishes mining-industry use of stirred-media mills for ultrafine mineral grinding.

2. UNSD Classification Detail - ISIC Rev.4, Section B: Mining and Quarrying
   - Taxonomy evidence: ISIC Section B identifies mining and quarrying as an economic-activity sector separate from manufacturing. It supports the sector boundary, not a count of qualifying mill buyers. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Detail/EN/xx.xx/B))
3. Mach for mixing/kneading/crushing/grinding etc imports by country | 2024
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: 2024 gross machinery imports provide the purchasing-index input: U.S. HS xx.xx imports were USD xx.xx. These are broad machinery purchases, not ultrafine mill sales.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: 2024 gross machinery imports provide the purchasing-index input: U.S. HS xx.xx imports were USD xx.xx. These are broad machinery purchases, not ultrafine mill sales.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Country observations include Brazil USD xx.xx and Argentina USD xx.xx under HS xx.xx supporting the regional model's purchasing inputs.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country observations include Brazil USD xx.xx and Argentina USD xx.xx under HS xx.xx supporting the regional model's purchasing inputs.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: HS xx.xx imports include Germany USD xx.xx and France USD xx.xx; individual country records, rather than the EU aggregate, enter the allocation.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: HS xx.xx imports include Germany USD xx.xx and France USD xx.xx; individual country records, rather than the EU aggregate, enter the allocation.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Turkey USD xx.xx and Saudi Arabia USD xx.xx are broad machinery purchasing inputs, not observed qualifying-market numerators.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Turkey USD xx.xx and Saudi Arabia USD xx.xx are broad machinery purchasing inputs, not observed qualifying-market numerators.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: South Africa USD xx.xx and Egypt USD xx.xx, together with additional African reporters, anchor the purchasing baskets.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: South Africa USD xx.xx and Egypt USD xx.xx, together with additional African reporters, anchor the purchasing baskets.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: China USD xx.xx, Indonesia USD xx.xx and Japan USD xx.xx anchor the regional purchasing index before explicit local-supply adjustments.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: China USD xx.xx, Indonesia USD xx.xx and Japan USD xx.xx anchor the regional purchasing index before explicit local-supply adjustments.

4. Crushing/grinding machines for earth/ stone/ore imports by country | 2024
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: 2024 mineral crushing/grinding imports supply the secondary purchasing-index input; they contain out-of-scope ordinary crushers and are not treated as qualifying market revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: 2024 mineral crushing/grinding imports supply the secondary purchasing-index input; they contain out-of-scope ordinary crushers and are not treated as qualifying market revenue.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Country-level mineral machinery import observations support the Latin American purchasing basket and its explicitly modeled mining/package adjustments.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country-level mineral machinery import observations support the Latin American purchasing basket and its explicitly modeled mining/package adjustments.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: European national import observations provide the mineral-machinery component of the common purchasing index; the regional aggregate is not an extra country.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: European national import observations provide the mineral-machinery component of the common purchasing index; the regional aggregate is not an extra country.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Saudi Arabia and Turkey have separately reported mineral machinery imports, supporting national rather than bloc-wide purchasing inputs.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Saudi Arabia and Turkey have separately reported mineral machinery imports, supporting national rather than bloc-wide purchasing inputs.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: African reporter observations include major destinations outside the mandatory-country inventory, constraining a substantial noncatalog demand pool.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: African reporter observations include major destinations outside the mandatory-country inventory, constraining a substantial noncatalog demand pool.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Asia-Pacific and Central Asian reporter observations anchor the mineral-machinery component and unlisted-destination basket.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Asia-Pacific and Central Asian reporter observations anchor the mineral-machinery component and unlisted-destination basket.
5. Mach for mixing/kneading/crushing/grinding etc imports by country | 2021
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports were USD xx.xx. The model applies a qualified timing/access bridge and does not describe this as current trade.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports were USD xx.xx. The model applies a qualified timing/access bridge and does not describe this as current trade.
6. Crushing/grinding machines for earth/ stone/ore imports by country | 2021
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports of USD xx.xx provide the second historical purchasing primitive; the 2025 and 2032 allocations remain modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports of USD xx.xx provide the second historical purchasing primitive; the 2025 and 2032 allocations remain modeled.

7. World Manufacturing Production and Trade, Quarter IV 2025
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The report's mixed North American manufacturing conditions constrain a uniform high-growth assumption; output is not equated with mill purchasing.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Recent Latin American manufacturing weakness is counterevidence to immediate region-wide acceleration; forecast equipment factors remain conditional.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: European manufacturing stagnation and national divergence constrain the assumed relative equipment-purchasing path.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country-level manufacturing heterogeneity constrains the forecast; no single regional output rate is converted into machinery demand.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: African output observations include national counterexamples, supporting differentiated rather than uniform purchasing assumptions.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: China and other Asian manufacturing expansion, with national exceptions, provides directional context rather than an observed ultrafine-equipment growth rate.
8. Business Unit Grinding & Dispersing - NETZSCH
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The supplier documents local grinding-equipment production and commercial operations in Germany, the United States, Brazil, Russia, India and China. This supports considering domestic supply omitted by import statistics, but does not measure the model's correction factors.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The supplier documents local grinding-equipment production and commercial operations in Germany, the United States, Brazil, Russia, India and China. This supports considering domestic supply omitted by import statistics, but does not measure the model's correction factors.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Documented local commercial supply in China and India qualifies an import-only purchasing model; manufacturing location is not itself counted as buyer demand.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Documented local commercial supply in China and India qualifies an import-only purchasing model; manufacturing location is not itself counted as buyer demand.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Documented U.S. production and local commercial operations support an explicit, uncertain domestic-supply bridge rather than treating imports as the entire numerator.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Documented U.S. production and local commercial operations support an explicit, uncertain domestic-supply bridge rather than treating imports as the entire numerator.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Brazilian local production and commercial operations qualify reliance on imports alone, without establishing the assumed domestic sales amount.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Brazilian local production and commercial operations qualify reliance on imports alone, without establishing the assumed domestic sales amount.
9. High Energy Planetary Ball Mill - IIT Bombay
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The 2024 solicitation concerns one mill and requires two registration stages. It supports a purchaser-specific access constraint, not an award, national procurement conversion rate or forecast revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The 2024 solicitation concerns one mill and requires two registration stages. It supports a purchaser-specific access constraint, not an award, national procurement conversion rate or forecast revenue.

10. Metso receives order for grinding mills to a copper project in Africa
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The EUR xx.xx August 2024 HIGmill equipment/auxiliary/services order establishes a commercial package in Africa but identifies neither country nor annual revenue recognition. It constrains attribution and is not added to 2025 demand.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The EUR xx.xx August 2024 HIGmill equipment/auxiliary/services order establishes a commercial package in Africa but identifies neither country nor annual revenue recognition. It constrains attribution and is not added to 2025 demand.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The award concerns an African mining project; it does not disclose the global mining-buyer share.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The award concerns an African mining project; it does not disclose the global mining-buyer share.
11. Methodology - UNIDO Industrial Analytics Platform
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The methodology notes that U.S. trade coverage includes Puerto Rico, reinforcing that the national purchasing proxy must not be renormalized to the xx.xx-state inventory.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The methodology notes that U.S. trade coverage includes Puerto Rico, reinforcing that the national purchasing proxy must not be renormalized to the xx.xx-state inventory.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The methodology identifies Monaco within French trade coverage; the customs input is an imperfect national demand proxy rather than a directly observed country numerator.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The methodology identifies Monaco within French trade coverage; the customs input is an imperfect national demand proxy rather than a directly observed country numerator.
12. Hosokawa Micron - FY2025 Financial Results Presentation, November 25, 2025 (Japanese)
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; establishment attribution modeled.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; establishment attribution modeled.

10.3. Pharmaceutical Manufacturing

Table 95. Global Ultra Fine Grinding Mill Market Size, by Pharmaceutical Manufacturing, by Region, 2017-2040 (USD Million)

Region	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Africa	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Asia-Pacific	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Europe	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Latin America	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Middle East	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
North America	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 96. Global Ultra Fine Grinding Mill Market Size, by Pharmaceutical Manufacturing, by Group, 2017-2040 (USD Million)

Group	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
ASEAN	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
BRICS	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
European Union	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
G7	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
GCC	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
NATO	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx

Table 97. Global Ultra Fine Grinding Mill Market Size, by Pharmaceutical Manufacturing, by Country, 2017-2040 (USD Million)

Country	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Australia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Brazil	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Canada	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
China	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
France	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Germany	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
India	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Italy	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Japan	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mexico	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Russia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
South Korea	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Spain	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United Kingdom	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United States	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Others	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Sources & Evidence

1. Stirred media mills in the mining industry: Material grindability, energy-size relationships, and operating conditions

   · Taxonomy evidence: The commercial-context discussion identifies established pharmaceutical-industry use of stirred-media mills.

2. UNSD Classification Detail - ISIC Rev.4, Division 21: Pharmaceutical Manufacturing
   - Taxonomy evidence: ISIC separately identifies basic pharmaceutical products and pharmaceutical preparations, including medicinal chemical and botanical products. This establishes an industrial classification, not authorization, efficacy, or equipment adoption. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Detail/EN/xx.xx/xx.xx))
3. Mach for mixing/kneading/crushing/grinding etc imports by country | 2024
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: 2024 gross machinery imports provide the purchasing-index input: U.S. HS xx.xx imports were USD xx.xx. These are broad machinery purchases, not ultrafine mill sales.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: 2024 gross machinery imports provide the purchasing-index input: U.S. HS xx.xx imports were USD xx.xx. These are broad machinery purchases, not ultrafine mill sales.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Country observations include Brazil USD xx.xx and Argentina USD xx.xx under HS xx.xx supporting the regional model's purchasing inputs.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country observations include Brazil USD xx.xx and Argentina USD xx.xx under HS xx.xx supporting the regional model's purchasing inputs.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: HS xx.xx imports include Germany USD xx.xx and France USD xx.xx; individual country records, rather than the EU aggregate, enter the allocation.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: HS xx.xx imports include Germany USD xx.xx and France USD xx.xx; individual country records, rather than the EU aggregate, enter the allocation.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Turkey USD xx.xx and Saudi Arabia USD xx.xx are broad machinery purchasing inputs, not observed qualifying-market numerators.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Turkey USD xx.xx and Saudi Arabia USD xx.xx are broad machinery purchasing inputs, not observed qualifying-market numerators.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: South Africa USD xx.xx and Egypt USD xx.xx, together with additional African reporters, anchor the purchasing baskets.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: South Africa USD xx.xx and Egypt USD xx.xx, together with additional African reporters, anchor the purchasing baskets.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: China USD xx.xx, Indonesia USD xx.xx and Japan USD xx.xx anchor the regional purchasing index before explicit local-supply adjustments.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: China USD xx.xx, Indonesia USD xx.xx and Japan USD xx.xx anchor the regional purchasing index before explicit local-supply adjustments.

4. Crushing/grinding machines for earth/ stone/ore imports by country | 2024
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: 2024 mineral crushing/grinding imports supply the secondary purchasing-index input; they contain out-of-scope ordinary crushers and are not treated as qualifying market revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: 2024 mineral crushing/grinding imports supply the secondary purchasing-index input; they contain out-of-scope ordinary crushers and are not treated as qualifying market revenue.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Country-level mineral machinery import observations support the Latin American purchasing basket and its explicitly modeled mining/package adjustments.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country-level mineral machinery import observations support the Latin American purchasing basket and its explicitly modeled mining/package adjustments.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: European national import observations provide the mineral-machinery component of the common purchasing index; the regional aggregate is not an extra country.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: European national import observations provide the mineral-machinery component of the common purchasing index; the regional aggregate is not an extra country.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Saudi Arabia and Turkey have separately reported mineral machinery imports, supporting national rather than bloc-wide purchasing inputs.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Saudi Arabia and Turkey have separately reported mineral machinery imports, supporting national rather than bloc-wide purchasing inputs.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: African reporter observations include major destinations outside the mandatory-country inventory, constraining a substantial noncatalog demand pool.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: African reporter observations include major destinations outside the mandatory-country inventory, constraining a substantial noncatalog demand pool.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Asia-Pacific and Central Asian reporter observations anchor the mineral-machinery component and unlisted-destination basket.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Asia-Pacific and Central Asian reporter observations anchor the mineral-machinery component and unlisted-destination basket.
5. Mach for mixing/kneading/crushing/grinding etc imports by country | 2021
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports were USD xx.xx. The model applies a qualified timing/access bridge and does not describe this as current trade.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports were USD xx.xx. The model applies a qualified timing/access bridge and does not describe this as current trade.
6. Crushing/grinding machines for earth/ stone/ore imports by country | 2021
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports of USD xx.xx provide the second historical purchasing primitive; the 2025 and 2032 allocations remain modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports of USD xx.xx provide the second historical purchasing primitive; the 2025 and 2032 allocations remain modeled.

7. World Manufacturing Production and Trade, Quarter IV 2025
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The report's mixed North American manufacturing conditions constrain a uniform high-growth assumption; output is not equated with mill purchasing.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Recent Latin American manufacturing weakness is counterevidence to immediate region-wide acceleration; forecast equipment factors remain conditional.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: European manufacturing stagnation and national divergence constrain the assumed relative equipment-purchasing path.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country-level manufacturing heterogeneity constrains the forecast; no single regional output rate is converted into machinery demand.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: African output observations include national counterexamples, supporting differentiated rather than uniform purchasing assumptions.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: China and other Asian manufacturing expansion, with national exceptions, provides directional context rather than an observed ultrafine-equipment growth rate.
8. Business Unit Grinding & Dispersing - NETZSCH
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The supplier documents local grinding-equipment production and commercial operations in Germany, the United States, Brazil, Russia, India and China. This supports considering domestic supply omitted by import statistics, but does not measure the model's correction factors.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The supplier documents local grinding-equipment production and commercial operations in Germany, the United States, Brazil, Russia, India and China. This supports considering domestic supply omitted by import statistics, but does not measure the model's correction factors.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Documented local commercial supply in China and India qualifies an import-only purchasing model; manufacturing location is not itself counted as buyer demand.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Documented local commercial supply in China and India qualifies an import-only purchasing model; manufacturing location is not itself counted as buyer demand.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Documented U.S. production and local commercial operations support an explicit, uncertain domestic-supply bridge rather than treating imports as the entire numerator.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Documented U.S. production and local commercial operations support an explicit, uncertain domestic-supply bridge rather than treating imports as the entire numerator.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Brazilian local production and commercial operations qualify reliance on imports alone, without establishing the assumed domestic sales amount.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Brazilian local production and commercial operations qualify reliance on imports alone, without establishing the assumed domestic sales amount.
9. High Energy Planetary Ball Mill - IIT Bombay
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The 2024 solicitation concerns one mill and requires two registration stages. It supports a purchaser-specific access constraint, not an award, national procurement conversion rate or forecast revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The 2024 solicitation concerns one mill and requires two registration stages. It supports a purchaser-specific access constraint, not an award, national procurement conversion rate or forecast revenue.

10. Metso receives order for grinding mills to a copper project in Africa
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The EUR xx.xx August 2024 HIGmill equipment/auxiliary/services order establishes a commercial package in Africa but identifies neither country nor annual revenue recognition. It constrains attribution and is not added to 2025 demand.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The EUR xx.xx August 2024 HIGmill equipment/auxiliary/services order establishes a commercial package in Africa but identifies neither country nor annual revenue recognition. It constrains attribution and is not added to 2025 demand.
11. Methodology - UNIDO Industrial Analytics Platform
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The methodology notes that U.S. trade coverage includes Puerto Rico, reinforcing that the national purchasing proxy must not be renormalized to the xx.xx-state inventory.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The methodology notes that U.S. trade coverage includes Puerto Rico, reinforcing that the national purchasing proxy must not be renormalized to the xx.xx-state inventory.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The methodology identifies Monaco within French trade coverage; the customs input is an imperfect national demand proxy rather than a directly observed country numerator.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The methodology identifies Monaco within French trade coverage; the customs input is an imperfect national demand proxy rather than a directly observed country numerator.
12. Hosokawa Micron - FY2025 Financial Results Presentation, November 25, 2025 (Japanese)
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; establishment attribution modeled.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; establishment attribution modeled.
13. Contract Manufacturing of Pharmaceuticals - YUKI GOSEI KOGYO CO., LTD.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The actual pharmaceutical manufacturing operator is distinct from customers outsourcing production; processing-service receipts remain excluded.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The actual pharmaceutical manufacturing operator is distinct from customers outsourcing production; processing-service receipts remain excluded.

10.4. Food, Beverage, and Feed Manufacturing

Table 98. Global Ultra Fine Grinding Mill Market Size, by Food, Beverage, and Feed Manufacturing, by Region, 2017-2040 (USD Million)

Region	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Africa	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Asia-Pacific	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Europe	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Latin America	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Middle East	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
North America	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 99. Global Ultra Fine Grinding Mill Market Size, by Food, Beverage, and Feed Manufacturing, by Group, 2017-2040 (USD Million)

Group	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
ASEAN	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
BRICS	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
European Union	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
G7	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
GCC	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
NATO	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx

Table 100. Global Ultra Fine Grinding Mill Market Size, by Food, Beverage, and Feed Manufacturing, by Country, 2017-2040 (USD Million)

Country	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Australia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Brazil	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Canada	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
China	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
France	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Germany	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
India	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Italy	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Japan	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mexico	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Russia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
South Korea	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Spain	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United Kingdom	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United States	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Others	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Sources & Evidence

1. UNSD Classification Detail - ISIC Rev.4, Division 10: Manufacture of Food Products

   · Taxonomy evidence: ISIC food manufacturing includes grain/starch products and prepared animal feeds, and permits production for third parties. Its notes distinguish food manufacturing from recovery of food waste into secondary raw materials. Beverage manufacturing is separately identified in the manufacturing structure. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Detail/EN/xx.xx/xx.xx))

2. A. Ebbecke Verfahrenstechnik - Micronization / Grinding
   - Taxonomy evidence: Commercial food-ingredient micronization is documented as an operating processing activity; client equipment ownership is not established.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operator-side food-processing reference supports establishment attribution rather than automatically assigning equipment to its customers.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operator-side food-processing reference supports establishment attribution rather than automatically assigning equipment to its customers.
3. Mach for mixing/kneading/crushing/grinding etc imports by country | 2024
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: 2024 gross machinery imports provide the purchasing-index input: U.S. HS xx.xx imports were USD xx.xx. These are broad machinery purchases, not ultrafine mill sales.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: 2024 gross machinery imports provide the purchasing-index input: U.S. HS xx.xx imports were USD xx.xx. These are broad machinery purchases, not ultrafine mill sales.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Country observations include Brazil USD xx.xx and Argentina USD xx.xx under HS xx.xx supporting the regional model's purchasing inputs.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country observations include Brazil USD xx.xx and Argentina USD xx.xx under HS xx.xx supporting the regional model's purchasing inputs.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: HS xx.xx imports include Germany USD xx.xx and France USD xx.xx; individual country records, rather than the EU aggregate, enter the allocation.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: HS xx.xx imports include Germany USD xx.xx and France USD xx.xx; individual country records, rather than the EU aggregate, enter the allocation.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Turkey USD xx.xx and Saudi Arabia USD xx.xx are broad machinery purchasing inputs, not observed qualifying-market numerators.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Turkey USD xx.xx and Saudi Arabia USD xx.xx are broad machinery purchasing inputs, not observed qualifying-market numerators.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: South Africa USD xx.xx and Egypt USD xx.xx, together with additional African reporters, anchor the purchasing baskets.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: South Africa USD xx.xx and Egypt USD xx.xx, together with additional African reporters, anchor the purchasing baskets.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: China USD xx.xx, Indonesia USD xx.xx and Japan USD xx.xx anchor the regional purchasing index before explicit local-supply adjustments.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: China USD xx.xx, Indonesia USD xx.xx and Japan USD xx.xx anchor the regional purchasing index before explicit local-supply adjustments.

4. Crushing/grinding machines for earth/ stone/ore imports by country | 2024
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: 2024 mineral crushing/grinding imports supply the secondary purchasing-index input; they contain out-of-scope ordinary crushers and are not treated as qualifying market revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: 2024 mineral crushing/grinding imports supply the secondary purchasing-index input; they contain out-of-scope ordinary crushers and are not treated as qualifying market revenue.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Country-level mineral machinery import observations support the Latin American purchasing basket and its explicitly modeled mining/package adjustments.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country-level mineral machinery import observations support the Latin American purchasing basket and its explicitly modeled mining/package adjustments.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: European national import observations provide the mineral-machinery component of the common purchasing index; the regional aggregate is not an extra country.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: European national import observations provide the mineral-machinery component of the common purchasing index; the regional aggregate is not an extra country.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Saudi Arabia and Turkey have separately reported mineral machinery imports, supporting national rather than bloc-wide purchasing inputs.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Saudi Arabia and Turkey have separately reported mineral machinery imports, supporting national rather than bloc-wide purchasing inputs.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: African reporter observations include major destinations outside the mandatory-country inventory, constraining a substantial noncatalog demand pool.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: African reporter observations include major destinations outside the mandatory-country inventory, constraining a substantial noncatalog demand pool.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Asia-Pacific and Central Asian reporter observations anchor the mineral-machinery component and unlisted-destination basket.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Asia-Pacific and Central Asian reporter observations anchor the mineral-machinery component and unlisted-destination basket.
5. Mach for mixing/kneading/crushing/grinding etc imports by country | 2021
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports were USD xx.xx. The model applies a qualified timing/access bridge and does not describe this as current trade.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports were USD xx.xx. The model applies a qualified timing/access bridge and does not describe this as current trade.
6. Crushing/grinding machines for earth/ stone/ore imports by country | 2021
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports of USD xx.xx provide the second historical purchasing primitive; the 2025 and 2032 allocations remain modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports of USD xx.xx provide the second historical purchasing primitive; the 2025 and 2032 allocations remain modeled.

7. World Manufacturing Production and Trade, Quarter IV 2025
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The report's mixed North American manufacturing conditions constrain a uniform high-growth assumption; output is not equated with mill purchasing.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Recent Latin American manufacturing weakness is counterevidence to immediate region-wide acceleration; forecast equipment factors remain conditional.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: European manufacturing stagnation and national divergence constrain the assumed relative equipment-purchasing path.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country-level manufacturing heterogeneity constrains the forecast; no single regional output rate is converted into machinery demand.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: African output observations include national counterexamples, supporting differentiated rather than uniform purchasing assumptions.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: China and other Asian manufacturing expansion, with national exceptions, provides directional context rather than an observed ultrafine-equipment growth rate.
8. Business Unit Grinding & Dispersing - NETZSCH
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The supplier documents local grinding-equipment production and commercial operations in Germany, the United States, Brazil, Russia, India and China. This supports considering domestic supply omitted by import statistics, but does not measure the model's correction factors.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The supplier documents local grinding-equipment production and commercial operations in Germany, the United States, Brazil, Russia, India and China. This supports considering domestic supply omitted by import statistics, but does not measure the model's correction factors.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Documented local commercial supply in China and India qualifies an import-only purchasing model; manufacturing location is not itself counted as buyer demand.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Documented local commercial supply in China and India qualifies an import-only purchasing model; manufacturing location is not itself counted as buyer demand.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Documented U.S. production and local commercial operations support an explicit, uncertain domestic-supply bridge rather than treating imports as the entire numerator.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Documented U.S. production and local commercial operations support an explicit, uncertain domestic-supply bridge rather than treating imports as the entire numerator.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Brazilian local production and commercial operations qualify reliance on imports alone, without establishing the assumed domestic sales amount.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Brazilian local production and commercial operations qualify reliance on imports alone, without establishing the assumed domestic sales amount.
9. High Energy Planetary Ball Mill - IIT Bombay
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The 2024 solicitation concerns one mill and requires two registration stages. It supports a purchaser-specific access constraint, not an award, national procurement conversion rate or forecast revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The 2024 solicitation concerns one mill and requires two registration stages. It supports a purchaser-specific access constraint, not an award, national procurement conversion rate or forecast revenue.

10. Metso receives order for grinding mills to a copper project in Africa
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The EUR xx.xx August 2024 HIGmill equipment/auxiliary/services order establishes a commercial package in Africa but identifies neither country nor annual revenue recognition. It constrains attribution and is not added to 2025 demand.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The EUR xx.xx August 2024 HIGmill equipment/auxiliary/services order establishes a commercial package in Africa but identifies neither country nor annual revenue recognition. It constrains attribution and is not added to 2025 demand.
11. Methodology - UNIDO Industrial Analytics Platform
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The methodology notes that U.S. trade coverage includes Puerto Rico, reinforcing that the national purchasing proxy must not be renormalized to the xx.xx-state inventory.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The methodology notes that U.S. trade coverage includes Puerto Rico, reinforcing that the national purchasing proxy must not be renormalized to the xx.xx-state inventory.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The methodology identifies Monaco within French trade coverage; the customs input is an imperfect national demand proxy rather than a directly observed country numerator.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The methodology identifies Monaco within French trade coverage; the customs input is an imperfect national demand proxy rather than a directly observed country numerator.
12. Hosokawa Micron - FY2025 Financial Results Presentation, November 25, 2025 (Japanese)
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; establishment attribution modeled.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; establishment attribution modeled.

10.5. Research, Education, and Testing

Table 101. Global Ultra Fine Grinding Mill Market Size, by Research, Education, and Testing, by Region, 2017-2040 (USD Million)

Region	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Africa	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Asia-Pacific	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Europe	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Latin America	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Middle East	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
North America	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 102. Global Ultra Fine Grinding Mill Market Size, by Research, Education, and Testing, by Group, 2017-2040 (USD Million)

Group	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
ASEAN	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
BRICS	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
European Union	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
G7	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
GCC	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
NATO	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx

Table 103. Global Ultra Fine Grinding Mill Market Size, by Research, Education, and Testing, by Country, 2017-2040 (USD Million)

Country	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Australia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Brazil	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Canada	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
China	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
France	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Germany	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
India	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Italy	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Japan	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mexico	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Russia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
South Korea	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Spain	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United Kingdom	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United States	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Others	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Sources & Evidence

1. Comminution - NTNU

   · Taxonomy evidence: The equipment belongs to a university mineral-processing laboratory. Its mineral subject matter does not make the operating establishment a mining company, supporting separation of institutional buyer activity from processed material. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))

2. NRRI advances efficient grinding technology on the Iron Range
   - Taxonomy evidence: The May xx.xx 2024 institutional account identifies a loaned pilot stirred mill and a separate bench-scale purchase at the research institute. This independently establishes an institutional operating context and demonstrates that deployment role and buyer industry need not coincide. ([nrri.umn.edu](https://nrri.umn.edu/news/stm-vertical-grinding))
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operating research institute is distinct from its mining clients, supporting buyer/material separation.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operating research institute is distinct from its mining clients, supporting buyer/material separation.
3. Jet Mill - Contract History | CanadaBuys
   - Taxonomy evidence: The jet-mill contract was awarded on May xx.xx 2026 and classified as laboratory grinding equipment. The record distinguishes the contracting organization, PSPC, from the buying organization, Natural Resources Canada; it does not identify the precise operating laboratory or establish a 2025 purchase. ([canadabuys.canada.ca](https://canadabuys.canada.ca/en/tender-opportunities/contract-history/cw2408170-xx.xx))
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The record distinguishes Natural Resources Canada as buying organization from PSPC as contracting organization, supporting establishment attribution.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The record distinguishes Natural Resources Canada as buying organization from PSPC as contracting organization, supporting establishment attribution.
4. Comminution Testing | Core Resources
   - Taxonomy evidence: The company describes its own laboratory and pilot equipment used in commercial metallurgical testing services. This supports the independent testing-establishment context, not equipment ownership by its mining clients. ([coreresources.com.au](https://coreresources.com.au/services/metallurgical-services/laboratory-testing/comminution-testing/))
5. UNSD Classification Detail - ISIC Rev.4, Division 72: Scientific Research and Development
   - Taxonomy evidence: ISIC Division xx.xx separately identifies scientific research and development, including natural sciences and engineering. It supports an independently operated research-establishment category rather than classification by the industries researched. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Detail/EN/xx.xx/xx.xx))
6. UNSD Classification Detail - ISIC Rev.4, Class 7120: Technical Testing and Analysis
   - Taxonomy evidence: ISIC Class xx.xx identifies technical testing and analysis as an economic activity separate from manufacturing. This supports inclusion of independently operated testing establishments, without establishing qualifying equipment purchases. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Detail/EN/xx.xx/xx.xx))
7. UNSD Classification Detail - ISIC Rev.4, Class 8530: Higher Education
   - Taxonomy evidence: ISIC Class xx.xx identifies higher education as a separate institutional activity. This supports the education component of the grouped buyer category, not an assumption that all educational establishments buy qualifying mills. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Detail/EN/xx.xx/xx.xx))

8. Mach for mixing/kneading/crushing/grinding etc imports by country | 2024
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: 2024 gross machinery imports provide the purchasing-index input: U.S. HS xx.xx imports were USD xx.xx. These are broad machinery purchases, not ultrafine mill sales.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: 2024 gross machinery imports provide the purchasing-index input: U.S. HS xx.xx imports were USD xx.xx. These are broad machinery purchases, not ultrafine mill sales.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Country observations include Brazil USD xx.xx and Argentina USD xx.xx under HS xx.xx supporting the regional model's purchasing inputs.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country observations include Brazil USD xx.xx and Argentina USD xx.xx under HS xx.xx supporting the regional model's purchasing inputs.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: HS xx.xx imports include Germany USD xx.xx and France USD xx.xx; individual country records, rather than the EU aggregate, enter the allocation.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: HS xx.xx imports include Germany USD xx.xx and France USD xx.xx; individual country records, rather than the EU aggregate, enter the allocation.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Turkey USD xx.xx and Saudi Arabia USD xx.xx are broad machinery purchasing inputs, not observed qualifying-market numerators.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Turkey USD xx.xx and Saudi Arabia USD xx.xx are broad machinery purchasing inputs, not observed qualifying-market numerators.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: South Africa USD xx.xx and Egypt USD xx.xx, together with additional African reporters, anchor the purchasing baskets.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: South Africa USD xx.xx and Egypt USD xx.xx, together with additional African reporters, anchor the purchasing baskets.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: China USD xx.xx, Indonesia USD xx.xx and Japan USD xx.xx anchor the regional purchasing index before explicit local-supply adjustments.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: China USD xx.xx, Indonesia USD xx.xx and Japan USD xx.xx anchor the regional purchasing index before explicit local-supply adjustments.

9. Crushing/grinding machines for earth/ stone/ore imports by country | 2024
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: 2024 mineral crushing/grinding imports supply the secondary purchasing-index input; they contain out-of-scope ordinary crushers and are not treated as qualifying market revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: 2024 mineral crushing/grinding imports supply the secondary purchasing-index input; they contain out-of-scope ordinary crushers and are not treated as qualifying market revenue.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Country-level mineral machinery import observations support the Latin American purchasing basket and its explicitly modeled mining/package adjustments.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country-level mineral machinery import observations support the Latin American purchasing basket and its explicitly modeled mining/package adjustments.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: European national import observations provide the mineral-machinery component of the common purchasing index; the regional aggregate is not an extra country.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: European national import observations provide the mineral-machinery component of the common purchasing index; the regional aggregate is not an extra country.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Saudi Arabia and Turkey have separately reported mineral machinery imports, supporting national rather than bloc-wide purchasing inputs.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Saudi Arabia and Turkey have separately reported mineral machinery imports, supporting national rather than bloc-wide purchasing inputs.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: African reporter observations include major destinations outside the mandatory-country inventory, constraining a substantial noncatalog demand pool.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: African reporter observations include major destinations outside the mandatory-country inventory, constraining a substantial noncatalog demand pool.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Asia-Pacific and Central Asian reporter observations anchor the mineral-machinery component and unlisted-destination basket.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Asia-Pacific and Central Asian reporter observations anchor the mineral-machinery component and unlisted-destination basket.
10. Mach for mixing/kneading/crushing/grinding etc imports by country | 2021
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports were USD xx.xx. The model applies a qualified timing/access bridge and does not describe this as current trade.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports were USD xx.xx. The model applies a qualified timing/access bridge and does not describe this as current trade.
11. Crushing/grinding machines for earth/ stone/ore imports by country | 2021
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports of USD xx.xx provide the second historical purchasing primitive; the 2025 and 2032 allocations remain modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports of USD xx.xx provide the second historical purchasing primitive; the 2025 and 2032 allocations remain modeled.

12. World Manufacturing Production and Trade, Quarter IV 2025
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The report's mixed North American manufacturing conditions constrain a uniform high-growth assumption; output is not equated with mill purchasing.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Recent Latin American manufacturing weakness is counterevidence to immediate region-wide acceleration; forecast equipment factors remain conditional.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: European manufacturing stagnation and national divergence constrain the assumed relative equipment-purchasing path.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country-level manufacturing heterogeneity constrains the forecast; no single regional output rate is converted into machinery demand.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: African output observations include national counterexamples, supporting differentiated rather than uniform purchasing assumptions.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: China and other Asian manufacturing expansion, with national exceptions, provides directional context rather than an observed ultrafine-equipment growth rate.
13. Business Unit Grinding & Dispersing - NETZSCH
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The supplier documents local grinding-equipment production and commercial operations in Germany, the United States, Brazil, Russia, India and China. This supports considering domestic supply omitted by import statistics, but does not measure the model's correction factors.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The supplier documents local grinding-equipment production and commercial operations in Germany, the United States, Brazil, Russia, India and China. This supports considering domestic supply omitted by import statistics, but does not measure the model's correction factors.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Documented local commercial supply in China and India qualifies an import-only purchasing model; manufacturing location is not itself counted as buyer demand.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Documented local commercial supply in China and India qualifies an import-only purchasing model; manufacturing location is not itself counted as buyer demand.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Documented U.S. production and local commercial operations support an explicit, uncertain domestic-supply bridge rather than treating imports as the entire numerator.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Documented U.S. production and local commercial operations support an explicit, uncertain domestic-supply bridge rather than treating imports as the entire numerator.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Brazilian local production and commercial operations qualify reliance on imports alone, without establishing the assumed domestic sales amount.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Brazilian local production and commercial operations qualify reliance on imports alone, without establishing the assumed domestic sales amount.
14. High Energy Planetary Ball Mill - IIT Bombay
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The 2024 solicitation concerns one mill and requires two registration stages. It supports a purchaser-specific access constraint, not an award, national procurement conversion rate or forecast revenue.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The 2024 solicitation concerns one mill and requires two registration stages. It supports a purchaser-specific access constraint, not an award, national procurement conversion rate or forecast revenue.

15. Metso receives order for grinding mills to a copper project in Africa
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The EUR xx.xx August 2024 HIGmill equipment/auxiliary/services order establishes a commercial package in Africa but identifies neither country nor annual revenue recognition. It constrains attribution and is not added to 2025 demand.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The EUR xx.xx August 2024 HIGmill equipment/auxiliary/services order establishes a commercial package in Africa but identifies neither country nor annual revenue recognition. It constrains attribution and is not added to 2025 demand.
16. Methodology - UNIDO Industrial Analytics Platform
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The methodology notes that U.S. trade coverage includes Puerto Rico, reinforcing that the national purchasing proxy must not be renormalized to the xx.xx-state inventory.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The methodology notes that U.S. trade coverage includes Puerto Rico, reinforcing that the national purchasing proxy must not be renormalized to the xx.xx-state inventory.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The methodology identifies Monaco within French trade coverage; the customs input is an imperfect national demand proxy rather than a directly observed country numerator.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The methodology identifies Monaco within French trade coverage; the customs input is an imperfect national demand proxy rather than a directly observed country numerator.
17. Hosokawa Micron - FY2025 Financial Results Presentation, November 25, 2025 (Japanese)
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; institutional attribution assumed.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; institutional attribution assumed.
18. Ultrafin Mill: Super Masscolloider, Masuko MKCA6-5J CE - University of Ljubljana
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The university inventories a laboratory ultrafine mill within wood science; the institutional operator is not a wood-products manufacturer.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The university inventories a laboratory ultrafine mill within wood science; the institutional operator is not a wood-products manufacturer.

10.6. Materials Recovery and Recycling

Table 104. Global Ultra Fine Grinding Mill Market Size, by Materials Recovery and Recycling, by Region, 2017-2040 (USD Million)

Region	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Africa	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Asia-Pacific	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Europe	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Latin America	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Middle East	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
North America	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 105. Global Ultra Fine Grinding Mill Market Size, by Materials Recovery and Recycling, by Group, 2017-2040 (USD Million)

Group	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
ASEAN	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
BRICS	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
European Union	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
G7	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
GCC	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
NATO	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx

Table 106. Global Ultra Fine Grinding Mill Market Size, by Materials Recovery and Recycling, by Country, 2017-2040 (USD Million)

Country	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Australia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Brazil	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Canada	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
China	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
France	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Germany	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
India	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Italy	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Japan	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mexico	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Russia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
South Korea	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Spain	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United Kingdom	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United States	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Others	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Sources & Evidence

1. UNSD Classification Detail - ISIC Rev.4, Class 3830: Materials Recovery

   · Taxonomy evidence: ISIC Rev.xx.xx class xx.xx expressly includes reclaiming used tires and processing plastic or rubber waste into secondary raw materials. It excludes manufacture of new final products from recovered inputs. This establishes an activity boundary, not ultrafine-equipment adoption. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Detail/EN/xx.xx/xx.xx))

   · Taxonomy evidence: ISIC Class xx.xx separately identifies materials recovery under waste-management activities. Together with the manufacturing notes, this supports distinguishing secondary-raw-material recovery from production of new manufactured products. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Detail/EN/xx.xx/xx.xx))

   · Evidence informing base-year allocation inputs; displayed values and growth are calculated: The official classification distinguishes secondary-material recovery from manufacture of new final products; it supplies no equipment sales weight.

   · Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The official classification distinguishes secondary-material recovery from manufacture of new final products; it supplies no equipment sales weight.

2. TRS & Polymers - TyreXol Rubber Powder

   · Taxonomy evidence: TRS & Polymers describes its own conversion of end-of-life tires into reusable rubber powder and identifies micronization among its commercial milling technologies. Its establishment-level classification between secondary-material recovery and new-product manufacturing is not resolved by the page. ([trspolymers.com](https://trspolymers.com/product/tyrexol-rubber-powder/))

3. Mach for mixing/kneading/crushing/grinding etc imports by country | 2024
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: 2024 gross machinery imports provide the purchasing-index input: U.S. HS xx.xx imports were USD xx.xx. These are broad machinery purchases, not ultrafine mill sales.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: 2024 gross machinery imports provide the purchasing-index input: U.S. HS xx.xx imports were USD xx.xx. These are broad machinery purchases, not ultrafine mill sales.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Country observations include Brazil USD xx.xx and Argentina USD xx.xx under HS xx.xx supporting the regional model's purchasing inputs.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country observations include Brazil USD xx.xx and Argentina USD xx.xx under HS xx.xx supporting the regional model's purchasing inputs.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: HS xx.xx imports include Germany USD xx.xx and France USD xx.xx; individual country records, rather than the EU aggregate, enter the allocation.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: HS xx.xx imports include Germany USD xx.xx and France USD xx.xx; individual country records, rather than the EU aggregate, enter the allocation.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Turkey USD xx.xx and Saudi Arabia USD xx.xx are broad machinery purchasing inputs, not observed qualifying-market numerators.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Turkey USD xx.xx and Saudi Arabia USD xx.xx are broad machinery purchasing inputs, not observed qualifying-market numerators.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: South Africa USD xx.xx and Egypt USD xx.xx, together with additional African reporters, anchor the purchasing baskets.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: South Africa USD xx.xx and Egypt USD xx.xx, together with additional African reporters, anchor the purchasing baskets.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: China USD xx.xx, Indonesia USD xx.xx and Japan USD xx.xx anchor the regional purchasing index before explicit local-supply adjustments.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: China USD xx.xx, Indonesia USD xx.xx and Japan USD xx.xx anchor the regional purchasing index before explicit local-supply adjustments.

4. Crushing/grinding machines for earth/ stone/ore imports by country | 2024
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: 2024 mineral crushing/grinding imports supply the secondary purchasing-index input; they contain out-of-scope ordinary crushers and are not treated as qualifying market revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: 2024 mineral crushing/grinding imports supply the secondary purchasing-index input; they contain out-of-scope ordinary crushers and are not treated as qualifying market revenue.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Country-level mineral machinery import observations support the Latin American purchasing basket and its explicitly modeled mining/package adjustments.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country-level mineral machinery import observations support the Latin American purchasing basket and its explicitly modeled mining/package adjustments.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: European national import observations provide the mineral-machinery component of the common purchasing index; the regional aggregate is not an extra country.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: European national import observations provide the mineral-machinery component of the common purchasing index; the regional aggregate is not an extra country.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Saudi Arabia and Turkey have separately reported mineral machinery imports, supporting national rather than bloc-wide purchasing inputs.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Saudi Arabia and Turkey have separately reported mineral machinery imports, supporting national rather than bloc-wide purchasing inputs.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: African reporter observations include major destinations outside the mandatory-country inventory, constraining a substantial noncatalog demand pool.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: African reporter observations include major destinations outside the mandatory-country inventory, constraining a substantial noncatalog demand pool.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Asia-Pacific and Central Asian reporter observations anchor the mineral-machinery component and unlisted-destination basket.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Asia-Pacific and Central Asian reporter observations anchor the mineral-machinery component and unlisted-destination basket.
5. Mach for mixing/kneading/crushing/grinding etc imports by country | 2021
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports were USD xx.xx. The model applies a qualified timing/access bridge and does not describe this as current trade.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports were USD xx.xx. The model applies a qualified timing/access bridge and does not describe this as current trade.
6. Crushing/grinding machines for earth/ stone/ore imports by country | 2021
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports of USD xx.xx provide the second historical purchasing primitive; the 2025 and 2032 allocations remain modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports of USD xx.xx provide the second historical purchasing primitive; the 2025 and 2032 allocations remain modeled.

7. World Manufacturing Production and Trade, Quarter IV 2025
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The report's mixed North American manufacturing conditions constrain a uniform high-growth assumption; output is not equated with mill purchasing.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Recent Latin American manufacturing weakness is counterevidence to immediate region-wide acceleration; forecast equipment factors remain conditional.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: European manufacturing stagnation and national divergence constrain the assumed relative equipment-purchasing path.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country-level manufacturing heterogeneity constrains the forecast; no single regional output rate is converted into machinery demand.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: African output observations include national counterexamples, supporting differentiated rather than uniform purchasing assumptions.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: China and other Asian manufacturing expansion, with national exceptions, provides directional context rather than an observed ultrafine-equipment growth rate.
8. Business Unit Grinding & Dispersing - NETZSCH
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The supplier documents local grinding-equipment production and commercial operations in Germany, the United States, Brazil, Russia, India and China. This supports considering domestic supply omitted by import statistics, but does not measure the model's correction factors.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The supplier documents local grinding-equipment production and commercial operations in Germany, the United States, Brazil, Russia, India and China. This supports considering domestic supply omitted by import statistics, but does not measure the model's correction factors.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Documented local commercial supply in China and India qualifies an import-only purchasing model; manufacturing location is not itself counted as buyer demand.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Documented local commercial supply in China and India qualifies an import-only purchasing model; manufacturing location is not itself counted as buyer demand.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Documented U.S. production and local commercial operations support an explicit, uncertain domestic-supply bridge rather than treating imports as the entire numerator.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Documented U.S. production and local commercial operations support an explicit, uncertain domestic-supply bridge rather than treating imports as the entire numerator.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Brazilian local production and commercial operations qualify reliance on imports alone, without establishing the assumed domestic sales amount.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Brazilian local production and commercial operations qualify reliance on imports alone, without establishing the assumed domestic sales amount.
9. High Energy Planetary Ball Mill - IIT Bombay
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The 2024 solicitation concerns one mill and requires two registration stages. It supports a purchaser-specific access constraint, not an award, national procurement conversion rate or forecast revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The 2024 solicitation concerns one mill and requires two registration stages. It supports a purchaser-specific access constraint, not an award, national procurement conversion rate or forecast revenue.

10. Metso receives order for grinding mills to a copper project in Africa
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The EUR xx.xx August 2024 HIGmill equipment/auxiliary/services order establishes a commercial package in Africa but identifies neither country nor annual revenue recognition. It constrains attribution and is not added to 2025 demand.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The EUR xx.xx August 2024 HIGmill equipment/auxiliary/services order establishes a commercial package in Africa but identifies neither country nor annual revenue recognition. It constrains attribution and is not added to 2025 demand.
11. Methodology - UNIDO Industrial Analytics Platform
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The methodology notes that U.S. trade coverage includes Puerto Rico, reinforcing that the national purchasing proxy must not be renormalized to the xx.xx-state inventory.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The methodology notes that U.S. trade coverage includes Puerto Rico, reinforcing that the national purchasing proxy must not be renormalized to the xx.xx-state inventory.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The methodology identifies Monaco within French trade coverage; the customs input is an imperfect national demand proxy rather than a directly observed country numerator.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The methodology identifies Monaco within French trade coverage; the customs input is an imperfect national demand proxy rather than a directly observed country numerator.
12. Hosokawa Micron - FY2025 Financial Results Presentation, November 25, 2025 (Japanese)
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; establishment attribution modeled.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; establishment attribution modeled.
13. Pyrum Innovations AG - Interim Group Report January 1 to June 30, 2025
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The report establishes an actual recovery-business equipment context, while the exact attributable mill expenditure remains undisclosed.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The report establishes an actual recovery-business equipment context, while the exact attributable mill expenditure remains undisclosed.

10.7. Electrical and Electronic Product Manufacturing

Table 107. Global Ultra Fine Grinding Mill Market Size, by Electrical and Electronic Product Manufacturing, by Region, 2017-2040 (USD Million)

Region	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Africa	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Asia-Pacific	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Europe	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Latin America	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Middle East	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
North America	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 108. Global Ultra Fine Grinding Mill Market Size, by Electrical and Electronic Product Manufacturing, by Group, 2017-2040 (USD Million)

Group	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
ASEAN	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
BRICS	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
European Union	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
G7	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
GCC	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
NATO	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx

Table 109. Global Ultra Fine Grinding Mill Market Size, by Electrical and Electronic Product Manufacturing, by Country, 2017-2040 (USD Million)

Country	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Australia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Brazil	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Canada	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
China	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
France	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Germany	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
India	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Italy	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Japan	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mexico	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Russia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
South Korea	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Spain	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United Kingdom	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United States	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Others	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Sources & Evidence

1. UNSD Classification Detail - ISIC Rev.4, Section C: Manufacturing

   · Taxonomy evidence: Electronic/optical products and electrical equipment are distinct manufacturing divisions; their combination does not include every upstream battery-material supplier.

2. UNSD Classification Detail - ISIC Rev.4, Division 27: Electrical Equipment
   - Taxonomy evidence: Electrical-equipment manufacturing explicitly includes batteries and accumulators and excludes electronic products classified in Division xx.xx. This supports the combined electrical/electronic buyer grouping, not automatic assignment of upstream active-material manufacturers. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Detail/EN/xx.xx/xx.xx))
3. Mach for mixing/kneading/crushing/grinding etc imports by country | 2024
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: 2024 gross machinery imports provide the purchasing-index input: U.S. HS xx.xx imports were USD xx.xx. These are broad machinery purchases, not ultrafine mill sales.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: 2024 gross machinery imports provide the purchasing-index input: U.S. HS xx.xx imports were USD xx.xx. These are broad machinery purchases, not ultrafine mill sales.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Country observations include Brazil USD xx.xx and Argentina USD xx.xx under HS xx.xx supporting the regional model's purchasing inputs.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country observations include Brazil USD xx.xx and Argentina USD xx.xx under HS xx.xx supporting the regional model's purchasing inputs.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: HS xx.xx imports include Germany USD xx.xx and France USD xx.xx; individual country records, rather than the EU aggregate, enter the allocation.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: HS xx.xx imports include Germany USD xx.xx and France USD xx.xx; individual country records, rather than the EU aggregate, enter the allocation.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Turkey USD xx.xx and Saudi Arabia USD xx.xx are broad machinery purchasing inputs, not observed qualifying-market numerators.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Turkey USD xx.xx and Saudi Arabia USD xx.xx are broad machinery purchasing inputs, not observed qualifying-market numerators.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: South Africa USD xx.xx and Egypt USD xx.xx, together with additional African reporters, anchor the purchasing baskets.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: South Africa USD xx.xx and Egypt USD xx.xx, together with additional African reporters, anchor the purchasing baskets.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: China USD xx.xx, Indonesia USD xx.xx and Japan USD xx.xx anchor the regional purchasing index before explicit local-supply adjustments.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: China USD xx.xx, Indonesia USD xx.xx and Japan USD xx.xx anchor the regional purchasing index before explicit local-supply adjustments.

4. Crushing/grinding machines for earth/ stone/ore imports by country | 2024
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: 2024 mineral crushing/grinding imports supply the secondary purchasing-index input; they contain out-of-scope ordinary crushers and are not treated as qualifying market revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: 2024 mineral crushing/grinding imports supply the secondary purchasing-index input; they contain out-of-scope ordinary crushers and are not treated as qualifying market revenue.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Country-level mineral machinery import observations support the Latin American purchasing basket and its explicitly modeled mining/package adjustments.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country-level mineral machinery import observations support the Latin American purchasing basket and its explicitly modeled mining/package adjustments.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: European national import observations provide the mineral-machinery component of the common purchasing index; the regional aggregate is not an extra country.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: European national import observations provide the mineral-machinery component of the common purchasing index; the regional aggregate is not an extra country.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Saudi Arabia and Turkey have separately reported mineral machinery imports, supporting national rather than bloc-wide purchasing inputs.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Saudi Arabia and Turkey have separately reported mineral machinery imports, supporting national rather than bloc-wide purchasing inputs.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: African reporter observations include major destinations outside the mandatory-country inventory, constraining a substantial noncatalog demand pool.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: African reporter observations include major destinations outside the mandatory-country inventory, constraining a substantial noncatalog demand pool.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Asia-Pacific and Central Asian reporter observations anchor the mineral-machinery component and unlisted-destination basket.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Asia-Pacific and Central Asian reporter observations anchor the mineral-machinery component and unlisted-destination basket.
5. Mach for mixing/kneading/crushing/grinding etc imports by country | 2021
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports were USD xx.xx. The model applies a qualified timing/access bridge and does not describe this as current trade.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports were USD xx.xx. The model applies a qualified timing/access bridge and does not describe this as current trade.
6. Crushing/grinding machines for earth/ stone/ore imports by country | 2021
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports of USD xx.xx provide the second historical purchasing primitive; the 2025 and 2032 allocations remain modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports of USD xx.xx provide the second historical purchasing primitive; the 2025 and 2032 allocations remain modeled.

7. World Manufacturing Production and Trade, Quarter IV 2025
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The report's mixed North American manufacturing conditions constrain a uniform high-growth assumption; output is not equated with mill purchasing.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Recent Latin American manufacturing weakness is counterevidence to immediate region-wide acceleration; forecast equipment factors remain conditional.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: European manufacturing stagnation and national divergence constrain the assumed relative equipment-purchasing path.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country-level manufacturing heterogeneity constrains the forecast; no single regional output rate is converted into machinery demand.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: African output observations include national counterexamples, supporting differentiated rather than uniform purchasing assumptions.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: China and other Asian manufacturing expansion, with national exceptions, provides directional context rather than an observed ultrafine-equipment growth rate.
8. Business Unit Grinding & Dispersing - NETZSCH
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The supplier documents local grinding-equipment production and commercial operations in Germany, the United States, Brazil, Russia, India and China. This supports considering domestic supply omitted by import statistics, but does not measure the model's correction factors.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The supplier documents local grinding-equipment production and commercial operations in Germany, the United States, Brazil, Russia, India and China. This supports considering domestic supply omitted by import statistics, but does not measure the model's correction factors.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Documented local commercial supply in China and India qualifies an import-only purchasing model; manufacturing location is not itself counted as buyer demand.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Documented local commercial supply in China and India qualifies an import-only purchasing model; manufacturing location is not itself counted as buyer demand.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Documented U.S. production and local commercial operations support an explicit, uncertain domestic-supply bridge rather than treating imports as the entire numerator.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Documented U.S. production and local commercial operations support an explicit, uncertain domestic-supply bridge rather than treating imports as the entire numerator.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Brazilian local production and commercial operations qualify reliance on imports alone, without establishing the assumed domestic sales amount.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Brazilian local production and commercial operations qualify reliance on imports alone, without establishing the assumed domestic sales amount.
9. High Energy Planetary Ball Mill - IIT Bombay
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The 2024 solicitation concerns one mill and requires two registration stages. It supports a purchaser-specific access constraint, not an award, national procurement conversion rate or forecast revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The 2024 solicitation concerns one mill and requires two registration stages. It supports a purchaser-specific access constraint, not an award, national procurement conversion rate or forecast revenue.

10. Metso receives order for grinding mills to a copper project in Africa
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The EUR xx.xx August 2024 HIGmill equipment/auxiliary/services order establishes a commercial package in Africa but identifies neither country nor annual revenue recognition. It constrains attribution and is not added to 2025 demand.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The EUR xx.xx August 2024 HIGmill equipment/auxiliary/services order establishes a commercial package in Africa but identifies neither country nor annual revenue recognition. It constrains attribution and is not added to 2025 demand.
11. Methodology - UNIDO Industrial Analytics Platform
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The methodology notes that U.S. trade coverage includes Puerto Rico, reinforcing that the national purchasing proxy must not be renormalized to the xx.xx-state inventory.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The methodology notes that U.S. trade coverage includes Puerto Rico, reinforcing that the national purchasing proxy must not be renormalized to the xx.xx-state inventory.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The methodology identifies Monaco within French trade coverage; the customs input is an imperfect national demand proxy rather than a directly observed country numerator.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The methodology identifies Monaco within French trade coverage; the customs input is an imperfect national demand proxy rather than a directly observed country numerator.
12. Hosokawa Micron - FY2025 Financial Results Presentation, November 25, 2025 (Japanese)
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; establishment attribution modeled.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; establishment attribution modeled.
13. LG Energy Solution Releases 2025 Financial Results - January 29, 2026
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own battery-manufacturer financial and investment plans provide a counter-test, not an ultrafine equipment purchasing total.

10.8. Glass, Ceramics, and Construction Materials Manufacturing

Table 110. Global Ultra Fine Grinding Mill Market Size, by Glass, Ceramics, and Construction Materials Manufacturing, by Region, 2017-2040 (USD Million)

Region	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Africa	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Asia-Pacific	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Europe	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Latin America	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Middle East	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
North America	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 111. Global Ultra Fine Grinding Mill Market Size, by Glass, Ceramics, and Construction Materials Manufacturing, by Group, 2017-2040 (USD Million)

Group	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
ASEAN	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
BRICS	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
European Union	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
G7	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
GCC	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
NATO	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx

Table 112. Global Ultra Fine Grinding Mill Market Size, by Glass, Ceramics, and Construction Materials Manufacturing, by Country, 2017-2040 (USD Million)

Country	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Australia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Brazil	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Canada	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
China	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
France	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Germany	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
India	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Italy	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Japan	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mexico	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Russia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
South Korea	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Spain	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United Kingdom	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United States	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Others	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Sources & Evidence

1. UNSD Classification Detail - ISIC Rev.4, Division 23: Nonmetallic Mineral Products

   · Taxonomy evidence: ISIC Division xx.xx identifies nonmetallic mineral-product manufacturing and separates glass products from the remaining nonmetallic mineral-product group. This supports a manufacturing-sector boundary distinct from mineral extraction.
   ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Detail/EN/xx.xx/xx.xx))

2. Mach for mixing/kneading/crushing/grinding etc imports by country | 2024
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: 2024 gross machinery imports provide the purchasing-index input: U.S. HS xx.xx imports were USD xx.xx. These are broad machinery purchases, not ultrafine mill sales.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: 2024 gross machinery imports provide the purchasing-index input: U.S. HS xx.xx imports were USD xx.xx. These are broad machinery purchases, not ultrafine mill sales.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Country observations include Brazil USD xx.xx and Argentina USD xx.xx under HS xx.xx supporting the regional model's purchasing inputs.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country observations include Brazil USD xx.xx and Argentina USD xx.xx under HS xx.xx supporting the regional model's purchasing inputs.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: HS xx.xx imports include Germany USD xx.xx and France USD xx.xx; individual country records, rather than the EU aggregate, enter the allocation.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: HS xx.xx imports include Germany USD xx.xx and France USD xx.xx; individual country records, rather than the EU aggregate, enter the allocation.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Turkey USD xx.xx and Saudi Arabia USD xx.xx are broad machinery purchasing inputs, not observed qualifying-market numerators.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Turkey USD xx.xx and Saudi Arabia USD xx.xx are broad machinery purchasing inputs, not observed qualifying-market numerators.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: South Africa USD xx.xx and Egypt USD xx.xx, together with additional African reporters, anchor the purchasing baskets.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: South Africa USD xx.xx and Egypt USD xx.xx, together with additional African reporters, anchor the purchasing baskets.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: China USD xx.xx, Indonesia USD xx.xx and Japan USD xx.xx anchor the regional purchasing index before explicit local-supply adjustments.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: China USD xx.xx, Indonesia USD xx.xx and Japan USD xx.xx anchor the regional purchasing index before explicit local-supply adjustments.

3. Crushing/grinding machines for earth/ stone/ore imports by country | 2024
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: 2024 mineral crushing/grinding imports supply the secondary purchasing-index input; they contain out-of-scope ordinary crushers and are not treated as qualifying market revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: 2024 mineral crushing/grinding imports supply the secondary purchasing-index input; they contain out-of-scope ordinary crushers and are not treated as qualifying market revenue.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Country-level mineral machinery import observations support the Latin American purchasing basket and its explicitly modeled mining/package adjustments.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country-level mineral machinery import observations support the Latin American purchasing basket and its explicitly modeled mining/package adjustments.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: European national import observations provide the mineral-machinery component of the common purchasing index; the regional aggregate is not an extra country.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: European national import observations provide the mineral-machinery component of the common purchasing index; the regional aggregate is not an extra country.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Saudi Arabia and Turkey have separately reported mineral machinery imports, supporting national rather than bloc-wide purchasing inputs.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Saudi Arabia and Turkey have separately reported mineral machinery imports, supporting national rather than bloc-wide purchasing inputs.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: African reporter observations include major destinations outside the mandatory-country inventory, constraining a substantial noncatalog demand pool.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: African reporter observations include major destinations outside the mandatory-country inventory, constraining a substantial noncatalog demand pool.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Asia-Pacific and Central Asian reporter observations anchor the mineral-machinery component and unlisted-destination basket.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Asia-Pacific and Central Asian reporter observations anchor the mineral-machinery component and unlisted-destination basket.
4. Mach for mixing/kneading/crushing/grinding etc imports by country | 2021
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports were USD xx.xx. The model applies a qualified timing/access bridge and does not describe this as current trade.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports were USD xx.xx. The model applies a qualified timing/access bridge and does not describe this as current trade.
5. Crushing/grinding machines for earth/ stone/ore imports by country | 2021
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports of USD xx.xx provide the second historical purchasing primitive; the 2025 and 2032 allocations remain modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports of USD xx.xx provide the second historical purchasing primitive; the 2025 and 2032 allocations remain modeled.

6. World Manufacturing Production and Trade, Quarter IV 2025
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The report's mixed North American manufacturing conditions constrain a uniform high-growth assumption; output is not equated with mill purchasing.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Recent Latin American manufacturing weakness is counterevidence to immediate region-wide acceleration; forecast equipment factors remain conditional.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: European manufacturing stagnation and national divergence constrain the assumed relative equipment-purchasing path.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country-level manufacturing heterogeneity constrains the forecast; no single regional output rate is converted into machinery demand.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: African output observations include national counterexamples, supporting differentiated rather than uniform purchasing assumptions.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: China and other Asian manufacturing expansion, with national exceptions, provides directional context rather than an observed ultrafine-equipment growth rate.
7. Business Unit Grinding & Dispersing - NETZSCH
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The supplier documents local grinding-equipment production and commercial operations in Germany, the United States, Brazil, Russia, India and China. This supports considering domestic supply omitted by import statistics, but does not measure the model's correction factors.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The supplier documents local grinding-equipment production and commercial operations in Germany, the United States, Brazil, Russia, India and China. This supports considering domestic supply omitted by import statistics, but does not measure the model's correction factors.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Documented local commercial supply in China and India qualifies an import-only purchasing model; manufacturing location is not itself counted as buyer demand.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Documented local commercial supply in China and India qualifies an import-only purchasing model; manufacturing location is not itself counted as buyer demand.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Documented U.S. production and local commercial operations support an explicit, uncertain domestic-supply bridge rather than treating imports as the entire numerator.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Documented U.S. production and local commercial operations support an explicit, uncertain domestic-supply bridge rather than treating imports as the entire numerator.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Brazilian local production and commercial operations qualify reliance on imports alone, without establishing the assumed domestic sales amount.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Brazilian local production and commercial operations qualify reliance on imports alone, without establishing the assumed domestic sales amount.
8. High Energy Planetary Ball Mill - IIT Bombay
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The 2024 solicitation concerns one mill and requires two registration stages. It supports a purchaser-specific access constraint, not an award, national procurement conversion rate or forecast revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The 2024 solicitation concerns one mill and requires two registration stages. It supports a purchaser-specific access constraint, not an award, national procurement conversion rate or forecast revenue.

9. Metso receives order for grinding mills to a copper project in Africa
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The EUR xx.xx August 2024 HIGmill equipment/auxiliary/services order establishes a commercial package in Africa but identifies neither country nor annual revenue recognition. It constrains attribution and is not added to 2025 demand.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The EUR xx.xx August 2024 HIGmill equipment/auxiliary/services order establishes a commercial package in Africa but identifies neither country nor annual revenue recognition. It constrains attribution and is not added to 2025 demand.
10. Methodology - UNIDO Industrial Analytics Platform
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The methodology notes that U.S. trade coverage includes Puerto Rico, reinforcing that the national purchasing proxy must not be renormalized to the xx.xx-state inventory.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The methodology notes that U.S. trade coverage includes Puerto Rico, reinforcing that the national purchasing proxy must not be renormalized to the xx.xx-state inventory.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The methodology identifies Monaco within French trade coverage; the customs input is an imperfect national demand proxy rather than a directly observed country numerator.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The methodology identifies Monaco within French trade coverage; the customs input is an imperfect national demand proxy rather than a directly observed country numerator.
11. Hosokawa Micron - FY2025 Financial Results Presentation, November 25, 2025 (Japanese)
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; establishment attribution modeled.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; establishment attribution modeled.

10.9. Metals and Fabricated Metal Manufacturing

Table 113. Global Ultra Fine Grinding Mill Market Size, by Metals and Fabricated Metal Manufacturing, by Region, 2017-2040 (USD Million)

Region	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Africa	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Asia-Pacific	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Europe	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Latin America	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Middle East	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
North America	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 114. Global Ultra Fine Grinding Mill Market Size, by Metals and Fabricated Metal Manufacturing, by Group, 2017-2040 (USD Million)

Group	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
ASEAN	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
BRICS	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
European Union	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
G7	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
GCC	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
NATO	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx

Table 115. Global Ultra Fine Grinding Mill Market Size, by Metals and Fabricated Metal Manufacturing, by Country, 2017-2040 (USD Million)

Country	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Australia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Brazil	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Canada	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
China	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
France	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Germany	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
India	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Italy	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Japan	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mexico	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Russia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
South Korea	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Spain	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United Kingdom	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United States	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Others	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Sources & Evidence

1. UNSD Classification Detail - ISIC Rev.4, Class 3830: Materials Recovery

   · Taxonomy evidence: The notes exclude remelting ferrous scrap and production of new metal from scrap from this recovery class, supporting the retained manufacturing-versus-recovery distinction without establishing a qualifying mill sale. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Detail/EN/xx.xx/xx.xx))

2. UNSD Classification Detail - ISIC Rev.4, Section C: Manufacturing
   - Taxonomy evidence: The structure identifies basic metals and fabricated metal products as distinct manufacturing activities, supporting their combined buyer grouping.
3. UNSD Classification Detail - ISIC Rev.4, Division 24: Basic Metals
   - Taxonomy evidence: ISIC basic-metal manufacturing includes ferrous/nonferrous refining and alloy manufacture. These activities are distinct from mining and support the basic-metal portion of the proposed buyer grouping; the page does not establish ultrafine mill purchases. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Detail/EN/xx.xx/xx.xx))
4. Mach for mixing/kneading/crushing/grinding etc imports by country | 2024
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: 2024 gross machinery imports provide the purchasing-index input: U.S. HS xx.xx imports were USD xx.xx. These are broad machinery purchases, not ultrafine mill sales.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: 2024 gross machinery imports provide the purchasing-index input: U.S. HS xx.xx imports were USD xx.xx. These are broad machinery purchases, not ultrafine mill sales.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Country observations include Brazil USD xx.xx and Argentina USD xx.xx under HS xx.xx supporting the regional model's purchasing inputs.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country observations include Brazil USD xx.xx and Argentina USD xx.xx under HS xx.xx supporting the regional model's purchasing inputs.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: HS xx.xx imports include Germany USD xx.xx and France USD xx.xx; individual country records, rather than the EU aggregate, enter the allocation.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: HS xx.xx imports include Germany USD xx.xx and France USD xx.xx; individual country records, rather than the EU aggregate, enter the allocation.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Turkey USD xx.xx and Saudi Arabia USD xx.xx are broad machinery purchasing inputs, not observed qualifying-market numerators.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Turkey USD xx.xx and Saudi Arabia USD xx.xx are broad machinery purchasing inputs, not observed qualifying-market numerators.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: South Africa USD xx.xx and Egypt USD xx.xx, together with additional African reporters, anchor the purchasing baskets.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: South Africa USD xx.xx and Egypt USD xx.xx, together with additional African reporters, anchor the purchasing baskets.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: China USD xx.xx, Indonesia USD xx.xx and Japan USD xx.xx anchor the regional purchasing index before explicit local-supply adjustments.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: China USD xx.xx, Indonesia USD xx.xx and Japan USD xx.xx anchor the regional purchasing index before explicit local-supply adjustments.

5. Crushing/grinding machines for earth/ stone/ore imports by country | 2024
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: 2024 mineral crushing/grinding imports supply the secondary purchasing-index input; they contain out-of-scope ordinary crushers and are not treated as qualifying market revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: 2024 mineral crushing/grinding imports supply the secondary purchasing-index input; they contain out-of-scope ordinary crushers and are not treated as qualifying market revenue.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Country-level mineral machinery import observations support the Latin American purchasing basket and its explicitly modeled mining/package adjustments.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country-level mineral machinery import observations support the Latin American purchasing basket and its explicitly modeled mining/package adjustments.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: European national import observations provide the mineral-machinery component of the common purchasing index; the regional aggregate is not an extra country.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: European national import observations provide the mineral-machinery component of the common purchasing index; the regional aggregate is not an extra country.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Saudi Arabia and Turkey have separately reported mineral machinery imports, supporting national rather than bloc-wide purchasing inputs.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Saudi Arabia and Turkey have separately reported mineral machinery imports, supporting national rather than bloc-wide purchasing inputs.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: African reporter observations include major destinations outside the mandatory-country inventory, constraining a substantial noncatalog demand pool.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: African reporter observations include major destinations outside the mandatory-country inventory, constraining a substantial noncatalog demand pool.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Asia-Pacific and Central Asian reporter observations anchor the mineral-machinery component and unlisted-destination basket.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Asia-Pacific and Central Asian reporter observations anchor the mineral-machinery component and unlisted-destination basket.
6. Mach for mixing/kneading/crushing/grinding etc imports by country | 2021
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports were USD xx.xx. The model applies a qualified timing/access bridge and does not describe this as current trade.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports were USD xx.xx. The model applies a qualified timing/access bridge and does not describe this as current trade.
7. Crushing/grinding machines for earth/ stone/ore imports by country | 2021
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports of USD xx.xx provide the second historical purchasing primitive; the 2025 and 2032 allocations remain modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports of USD xx.xx provide the second historical purchasing primitive; the 2025 and 2032 allocations remain modeled.

8. World Manufacturing Production and Trade, Quarter IV 2025
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The report's mixed North American manufacturing conditions constrain a uniform high-growth assumption; output is not equated with mill purchasing.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Recent Latin American manufacturing weakness is counterevidence to immediate region-wide acceleration; forecast equipment factors remain conditional.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: European manufacturing stagnation and national divergence constrain the assumed relative equipment-purchasing path.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country-level manufacturing heterogeneity constrains the forecast; no single regional output rate is converted into machinery demand.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: African output observations include national counterexamples, supporting differentiated rather than uniform purchasing assumptions.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: China and other Asian manufacturing expansion, with national exceptions, provides directional context rather than an observed ultrafine-equipment growth rate.
9. Business Unit Grinding & Dispersing - NETZSCH
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The supplier documents local grinding-equipment production and commercial operations in Germany, the United States, Brazil, Russia, India and China. This supports considering domestic supply omitted by import statistics, but does not measure the model's correction factors.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The supplier documents local grinding-equipment production and commercial operations in Germany, the United States, Brazil, Russia, India and China. This supports considering domestic supply omitted by import statistics, but does not measure the model's correction factors.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Documented local commercial supply in China and India qualifies an import-only purchasing model; manufacturing location is not itself counted as buyer demand.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Documented local commercial supply in China and India qualifies an import-only purchasing model; manufacturing location is not itself counted as buyer demand.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Documented U.S. production and local commercial operations support an explicit, uncertain domestic-supply bridge rather than treating imports as the entire numerator.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Documented U.S. production and local commercial operations support an explicit, uncertain domestic-supply bridge rather than treating imports as the entire numerator.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Brazilian local production and commercial operations qualify reliance on imports alone, without establishing the assumed domestic sales amount.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Brazilian local production and commercial operations qualify reliance on imports alone, without establishing the assumed domestic sales amount.
10. High Energy Planetary Ball Mill - IIT Bombay
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The 2024 solicitation concerns one mill and requires two registration stages. It supports a purchaser-specific access constraint, not an award, national procurement conversion rate or forecast revenue.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The 2024 solicitation concerns one mill and requires two registration stages. It supports a purchaser-specific access constraint, not an award, national procurement conversion rate or forecast revenue.

11. Metso receives order for grinding mills to a copper project in Africa
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The EUR xx.xx August 2024 HIGmill equipment/auxiliary/services order establishes a commercial package in Africa but identifies neither country nor annual revenue recognition. It constrains attribution and is not added to 2025 demand.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The EUR xx.xx August 2024 HIGmill equipment/auxiliary/services order establishes a commercial package in Africa but identifies neither country nor annual revenue recognition. It constrains attribution and is not added to 2025 demand.
12. Methodology - UNIDO Industrial Analytics Platform
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The methodology notes that U.S. trade coverage includes Puerto Rico, reinforcing that the national purchasing proxy must not be renormalized to the xx.xx-state inventory.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The methodology notes that U.S. trade coverage includes Puerto Rico, reinforcing that the national purchasing proxy must not be renormalized to the xx.xx-state inventory.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The methodology identifies Monaco within French trade coverage; the customs input is an imperfect national demand proxy rather than a directly observed country numerator.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The methodology identifies Monaco within French trade coverage; the customs input is an imperfect national demand proxy rather than a directly observed country numerator.
13. Hosokawa Micron - FY2025 Financial Results Presentation, November 25, 2025 (Japanese)
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; establishment attribution modeled.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; establishment attribution modeled.

10.10. Wood, Pulp, and Paper Manufacturing

Table 116. Global Ultra Fine Grinding Mill Market Size, by Wood, Pulp, and Paper Manufacturing, by Region, 2017-2040 (USD Million)

Region	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Africa	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Asia-Pacific	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Europe	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Latin America	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Middle East	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
North America	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 117. Global Ultra Fine Grinding Mill Market Size, by Wood, Pulp, and Paper Manufacturing, by Group, 2017-2040 (USD Million)

Group	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
ASEAN	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
BRICS	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
European Union	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
G7	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
GCC	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
NATO	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx

Table 118. Global Ultra Fine Grinding Mill Market Size, by Wood, Pulp, and Paper Manufacturing, by Country, 2017-2040 (USD Million)

Country	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Australia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Brazil	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Canada	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
China	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
France	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Germany	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
India	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Italy	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Japan	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mexico	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Russia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
South Korea	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Spain	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United Kingdom	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United States	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Others	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Sources & Evidence

1. UNSD Classification Detail - ISIC Rev.4, Class 3830: Materials Recovery

   · Taxonomy evidence: The materials-recovery notes exclude making pulp from waste paper and direct it to manufacturing. Recovered feed alone therefore does not move pulp/paper establishments into the recovery buyer category. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Detail/EN/xx.xx/xx.xx))

2. UNSD Classification Detail - ISIC Rev.4, Section C: Manufacturing
   - Taxonomy evidence: The structure separately identifies wood products and paper products, supporting the named industrial grouping without establishing ultrafine-equipment demand.
3. FiberLean - Industrial MFC Production Equipment for On-Site Microfibrillated Cellulose Manufacture
   - Taxonomy evidence: The commercial page offers stirred-media MFC grinding equipment for pulp, paper, board, tissue, and molded-fiber producers. This supports a stated sector offering, not an independently verified purchaser or universal ultrafine eligibility. ([fiberlean.com](https://fiberlean.com/mfc-production-equipment/))
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The manufacturer's commercial offering targets pulp, paper and related establishments; it is not a measured industry sales share.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The manufacturer's commercial offering targets pulp, paper and related establishments; it is not a measured industry sales share.
4. Mach for mixing/kneading/crushing/grinding etc imports by country | 2024
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: 2024 gross machinery imports provide the purchasing-index input: U.S. HS xx.xx imports were USD xx.xx. These are broad machinery purchases, not ultrafine mill sales.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: 2024 gross machinery imports provide the purchasing-index input: U.S. HS xx.xx imports were USD xx.xx. These are broad machinery purchases, not ultrafine mill sales.
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   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country observations include Brazil USD xx.xx and Argentina USD xx.xx under HS xx.xx supporting the regional model's purchasing inputs.
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   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: South Africa USD xx.xx and Egypt USD xx.xx, together with additional African reporters, anchor the purchasing baskets.
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   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country-level mineral machinery import observations support the Latin American purchasing basket and its explicitly modeled mining/package adjustments.
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   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: European national import observations provide the mineral-machinery component of the common purchasing index; the regional aggregate is not an extra country.
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   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Saudi Arabia and Turkey have separately reported mineral machinery imports, supporting national rather than bloc-wide purchasing inputs.
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   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: African reporter observations include major destinations outside the mandatory-country inventory, constraining a substantial noncatalog demand pool.
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   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports were USD xx.xx. The model applies a qualified timing/access bridge and does not describe this as current trade.
7. Crushing/grinding machines for earth/ stone/ore imports by country | 2021
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   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports of USD xx.xx provide the second historical purchasing primitive; the 2025 and 2032 allocations remain modeled.

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   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The report's mixed North American manufacturing conditions constrain a uniform high-growth assumption; output is not equated with mill purchasing.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Recent Latin American manufacturing weakness is counterevidence to immediate region-wide acceleration; forecast equipment factors remain conditional.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: European manufacturing stagnation and national divergence constrain the assumed relative equipment-purchasing path.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country-level manufacturing heterogeneity constrains the forecast; no single regional output rate is converted into machinery demand.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: African output observations include national counterexamples, supporting differentiated rather than uniform purchasing assumptions.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: China and other Asian manufacturing expansion, with national exceptions, provides directional context rather than an observed ultrafine-equipment growth rate.
9. Business Unit Grinding & Dispersing - NETZSCH
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The supplier documents local grinding-equipment production and commercial operations in Germany, the United States, Brazil, Russia, India and China. This supports considering domestic supply omitted by import statistics, but does not measure the model's correction factors.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The supplier documents local grinding-equipment production and commercial operations in Germany, the United States, Brazil, Russia, India and China. This supports considering domestic supply omitted by import statistics, but does not measure the model's correction factors.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Documented local commercial supply in China and India qualifies an import-only purchasing model; manufacturing location is not itself counted as buyer demand.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Documented local commercial supply in China and India qualifies an import-only purchasing model; manufacturing location is not itself counted as buyer demand.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Documented U.S. production and local commercial operations support an explicit, uncertain domestic-supply bridge rather than treating imports as the entire numerator.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Documented U.S. production and local commercial operations support an explicit, uncertain domestic-supply bridge rather than treating imports as the entire numerator.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Brazilian local production and commercial operations qualify reliance on imports alone, without establishing the assumed domestic sales amount.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Brazilian local production and commercial operations qualify reliance on imports alone, without establishing the assumed domestic sales amount.
10. High Energy Planetary Ball Mill - IIT Bombay
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The 2024 solicitation concerns one mill and requires two registration stages. It supports a purchaser-specific access constraint, not an award, national procurement conversion rate or forecast revenue.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The 2024 solicitation concerns one mill and requires two registration stages. It supports a purchaser-specific access constraint, not an award, national procurement conversion rate or forecast revenue.

11. Metso receives order for grinding mills to a copper project in Africa
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The EUR xx.xx August 2024 HIGmill equipment/auxiliary/services order establishes a commercial package in Africa but identifies neither country nor annual revenue recognition. It constrains attribution and is not added to 2025 demand.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The EUR xx.xx August 2024 HIGmill equipment/auxiliary/services order establishes a commercial package in Africa but identifies neither country nor annual revenue recognition. It constrains attribution and is not added to 2025 demand.
12. Methodology - UNIDO Industrial Analytics Platform
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The methodology notes that U.S. trade coverage includes Puerto Rico, reinforcing that the national purchasing proxy must not be renormalized to the xx.xx-state inventory.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The methodology notes that U.S. trade coverage includes Puerto Rico, reinforcing that the national purchasing proxy must not be renormalized to the xx.xx-state inventory.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The methodology identifies Monaco within French trade coverage; the customs input is an imperfect national demand proxy rather than a directly observed country numerator.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The methodology identifies Monaco within French trade coverage; the customs input is an imperfect national demand proxy rather than a directly observed country numerator.
13. Hosokawa Micron - FY2025 Financial Results Presentation, November 25, 2025 (Japanese)
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; buyer attribution assumed.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; buyer attribution assumed.

10.11. Rubber and Plastics Product Manufacturing

Table 119. Global Ultra Fine Grinding Mill Market Size, by Rubber and Plastics Product Manufacturing, by Region, 2017-2040 (USD Million)

Region	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Africa	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Asia-Pacific	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Europe	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Latin America	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Middle East	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
North America	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 120. Global Ultra Fine Grinding Mill Market Size, by Rubber and Plastics Product Manufacturing, by Group, 2017-2040 (USD Million)

Group	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
ASEAN	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
BRICS	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
European Union	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
G7	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
GCC	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
NATO	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx

Table 121. Global Ultra Fine Grinding Mill Market Size, by Rubber and Plastics Product Manufacturing, by Country, 2017-2040 (USD Million)

Country	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Australia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Brazil	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Canada	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
China	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
France	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Germany	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
India	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Italy	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Japan	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mexico	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Russia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
South Korea	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Spain	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United Kingdom	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United States	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Others	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Sources & Evidence

1. UNSD Classification Detail - ISIC Rev.4, Class 3830: Materials Recovery

   · Taxonomy evidence: The class excludes new final-product manufacturing, including tire retreading, from materials recovery. The retained buyer allocation therefore depends on establishment output, not merely the use of recovered rubber or plastics. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Detail/EN/xx.xx/xx.xx))

   · Evidence informing base-year allocation inputs; displayed values and growth are calculated: Recovered-input use alone does not classify the equipment operator as a recovery establishment rather than a product manufacturer.

   · Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Recovered-input use alone does not classify the equipment operator as a recovery establishment rather than a product manufacturer.

2. UNSD Classification Detail - ISIC Rev.4, Division 22: Rubber and Plastics Products

   · Taxonomy evidence: ISIC Division xx.xx identifies rubber and plastics product manufacturing, while cautioning that not every product made from these materials belongs to the division. Material identity therefore cannot substitute for buyer classification. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Detail/EN/xx.xx/xx.xx))

3. TRS & Polymers - TyreXol Rubber Powder

   · Taxonomy evidence: Rubber-product applications are listed as destinations for the powder; these destinations do not establish that the downstream product manufacturers own or purchase the milling equipment.

4. Mach for mixing/kneading/crushing/grinding etc imports by country | 2024
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: 2024 gross machinery imports provide the purchasing-index input: U.S. HS xx.xx imports were USD xx.xx. These are broad machinery purchases, not ultrafine mill sales.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: 2024 gross machinery imports provide the purchasing-index input: U.S. HS xx.xx imports were USD xx.xx. These are broad machinery purchases, not ultrafine mill sales.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Country observations include Brazil USD xx.xx and Argentina USD xx.xx under HS xx.xx supporting the regional model's purchasing inputs.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country observations include Brazil USD xx.xx and Argentina USD xx.xx under HS xx.xx supporting the regional model's purchasing inputs.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: HS xx.xx imports include Germany USD xx.xx and France USD xx.xx; individual country records, rather than the EU aggregate, enter the allocation.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: HS xx.xx imports include Germany USD xx.xx and France USD xx.xx; individual country records, rather than the EU aggregate, enter the allocation.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Turkey USD xx.xx and Saudi Arabia USD xx.xx are broad machinery purchasing inputs, not observed qualifying-market numerators.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Turkey USD xx.xx and Saudi Arabia USD xx.xx are broad machinery purchasing inputs, not observed qualifying-market numerators.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: South Africa USD xx.xx and Egypt USD xx.xx, together with additional African reporters, anchor the purchasing baskets.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: South Africa USD xx.xx and Egypt USD xx.xx, together with additional African reporters, anchor the purchasing baskets.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: China USD xx.xx, Indonesia USD xx.xx and Japan USD xx.xx anchor the regional purchasing index before explicit local-supply adjustments.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: China USD xx.xx, Indonesia USD xx.xx and Japan USD xx.xx anchor the regional purchasing index before explicit local-supply adjustments.

5. Crushing/grinding machines for earth/ stone/ore imports by country | 2024
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: 2024 mineral crushing/grinding imports supply the secondary purchasing-index input; they contain out-of-scope ordinary crushers and are not treated as qualifying market revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: 2024 mineral crushing/grinding imports supply the secondary purchasing-index input; they contain out-of-scope ordinary crushers and are not treated as qualifying market revenue.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Country-level mineral machinery import observations support the Latin American purchasing basket and its explicitly modeled mining/package adjustments.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country-level mineral machinery import observations support the Latin American purchasing basket and its explicitly modeled mining/package adjustments.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: European national import observations provide the mineral-machinery component of the common purchasing index; the regional aggregate is not an extra country.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: European national import observations provide the mineral-machinery component of the common purchasing index; the regional aggregate is not an extra country.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Saudi Arabia and Turkey have separately reported mineral machinery imports, supporting national rather than bloc-wide purchasing inputs.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Saudi Arabia and Turkey have separately reported mineral machinery imports, supporting national rather than bloc-wide purchasing inputs.
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   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: African reporter observations include major destinations outside the mandatory-country inventory, constraining a substantial noncatalog demand pool.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Asia-Pacific and Central Asian reporter observations anchor the mineral-machinery component and unlisted-destination basket.
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   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports were USD xx.xx. The model applies a qualified timing/access bridge and does not describe this as current trade.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports were USD xx.xx. The model applies a qualified timing/access bridge and does not describe this as current trade.
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   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports of USD xx.xx provide the second historical purchasing primitive; the 2025 and 2032 allocations remain modeled.

8. World Manufacturing Production and Trade, Quarter IV 2025
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The report's mixed North American manufacturing conditions constrain a uniform high-growth assumption; output is not equated with mill purchasing.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Recent Latin American manufacturing weakness is counterevidence to immediate region-wide acceleration; forecast equipment factors remain conditional.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: European manufacturing stagnation and national divergence constrain the assumed relative equipment-purchasing path.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country-level manufacturing heterogeneity constrains the forecast; no single regional output rate is converted into machinery demand.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: African output observations include national counterexamples, supporting differentiated rather than uniform purchasing assumptions.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: China and other Asian manufacturing expansion, with national exceptions, provides directional context rather than an observed ultrafine-equipment growth rate.
9. Business Unit Grinding & Dispersing - NETZSCH
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The supplier documents local grinding-equipment production and commercial operations in Germany, the United States, Brazil, Russia, India and China. This supports considering domestic supply omitted by import statistics, but does not measure the model's correction factors.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The supplier documents local grinding-equipment production and commercial operations in Germany, the United States, Brazil, Russia, India and China. This supports considering domestic supply omitted by import statistics, but does not measure the model's correction factors.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Documented local commercial supply in China and India qualifies an import-only purchasing model; manufacturing location is not itself counted as buyer demand.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Documented local commercial supply in China and India qualifies an import-only purchasing model; manufacturing location is not itself counted as buyer demand.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Documented U.S. production and local commercial operations support an explicit, uncertain domestic-supply bridge rather than treating imports as the entire numerator.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Documented U.S. production and local commercial operations support an explicit, uncertain domestic-supply bridge rather than treating imports as the entire numerator.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Brazilian local production and commercial operations qualify reliance on imports alone, without establishing the assumed domestic sales amount.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Brazilian local production and commercial operations qualify reliance on imports alone, without establishing the assumed domestic sales amount.
10. High Energy Planetary Ball Mill - IIT Bombay
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The 2024 solicitation concerns one mill and requires two registration stages. It supports a purchaser-specific access constraint, not an award, national procurement conversion rate or forecast revenue.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The 2024 solicitation concerns one mill and requires two registration stages. It supports a purchaser-specific access constraint, not an award, national procurement conversion rate or forecast revenue.

11. Metso receives order for grinding mills to a copper project in Africa
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The EUR xx.xx August 2024 HIGmill equipment/auxiliary/services order establishes a commercial package in Africa but identifies neither country nor annual revenue recognition. It constrains attribution and is not added to 2025 demand.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The EUR xx.xx August 2024 HIGmill equipment/auxiliary/services order establishes a commercial package in Africa but identifies neither country nor annual revenue recognition. It constrains attribution and is not added to 2025 demand.
12. Methodology - UNIDO Industrial Analytics Platform
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The methodology notes that U.S. trade coverage includes Puerto Rico, reinforcing that the national purchasing proxy must not be renormalized to the xx.xx-state inventory.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The methodology notes that U.S. trade coverage includes Puerto Rico, reinforcing that the national purchasing proxy must not be renormalized to the xx.xx-state inventory.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The methodology identifies Monaco within French trade coverage; the customs input is an imperfect national demand proxy rather than a directly observed country numerator.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The methodology identifies Monaco within French trade coverage; the customs input is an imperfect national demand proxy rather than a directly observed country numerator.
13. Hosokawa Micron - FY2025 Financial Results Presentation, November 25, 2025 (Japanese)
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; establishment attribution modeled.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; establishment attribution modeled.

10.12. Power and Heat Generation

Table 122. Global Ultra Fine Grinding Mill Market Size, by Power and Heat Generation, by Region, 2017-2040 (USD Million)

Region	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Africa	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Asia-Pacific	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Europe	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Latin America	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Middle East	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
North America	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 123. Global Ultra Fine Grinding Mill Market Size, by Power and Heat Generation, by Group, 2017-2040 (USD Million)

Group	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
ASEAN	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
BRICS	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
European Union	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
G7	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
GCC	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
NATO	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx

Table 124. Global Ultra Fine Grinding Mill Market Size, by Power and Heat Generation, by Country, 2017-2040 (USD Million)

Country	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Australia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Brazil	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Canada	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
China	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
France	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Germany	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
India	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Italy	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Japan	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mexico	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Russia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
South Korea	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Spain	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United Kingdom	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United States	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Others	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Sources & Evidence

1. UNSD Classification Detail - ISIC Rev.4, Division 35: Electricity, Gas, Steam, and Air Conditioning Supply

   · Taxonomy evidence: ISIC Division xx.xx separately identifies electric-power activities and steam supply. This supports the power/heat establishment boundary but does not establish actual qualifying ultrafine-mill adoption. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Detail/EN/xx.xx/xx.xx))

2. Mach for mixing/kneading/crushing/grinding etc imports by country | 2024
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: 2024 gross machinery imports provide the purchasing-index input: U.S. HS xx.xx imports were USD xx.xx. These are broad machinery purchases, not ultrafine mill sales.
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   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: HS xx.xx imports include Germany USD xx.xx and France USD xx.xx; individual country records, rather than the EU aggregate, enter the allocation.
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5. Crushing/grinding machines for earth/ stone/ore imports by country | 2021
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports of USD xx.xx provide the second historical purchasing primitive; the 2025 and 2032 allocations remain modeled.
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   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Documented local commercial supply in China and India qualifies an import-only purchasing model; manufacturing location is not itself counted as buyer demand.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Documented U.S. production and local commercial operations support an explicit, uncertain domestic-supply bridge rather than treating imports as the entire numerator.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Documented U.S. production and local commercial operations support an explicit, uncertain domestic-supply bridge rather than treating imports as the entire numerator.
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   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The methodology identifies Monaco within French trade coverage; the customs input is an imperfect national demand proxy rather than a directly observed country numerator.
11. Hosokawa Micron - FY2025 Financial Results Presentation, November 25, 2025 (Japanese)
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; qualifying power attribution unverified.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; qualifying power attribution unverified.
12. Pulverizing Equipment - Coperion
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The broader portfolio names power-generation applications and separately lists ultrafine equipment; this limits, rather than verifies, the assumed qualifying power-buyer allocation.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The broader portfolio names power-generation applications and separately lists ultrafine equipment; this limits, rather than verifies, the assumed qualifying power-buyer allocation.

11. Ultra Fine Grinding Mill Market, by Deployment Scale

[redacted] A shared product-family name does not establish equivalent delivery or support obligations. Laboratory procurement should identify the complete instrument offer and local support commitment rather than infer production capability from a supplier's broader portfolio.

Pilot access need not involve equipment ownership. NRRI's May xx.xx 2024 account distinguishes a loaned pilot vertical stirred mill from a separate planned bench-scale purchase. [redacted]

Industrial Production shifts attention toward site integration and continuing asset support. [redacted] Neither deployment label nor an advertised international presence settles the support available for the specific purchase.

Figure 16. Global Ultra Fine Grinding Mill Market Size, by Deployment Scale, 2025 (%)

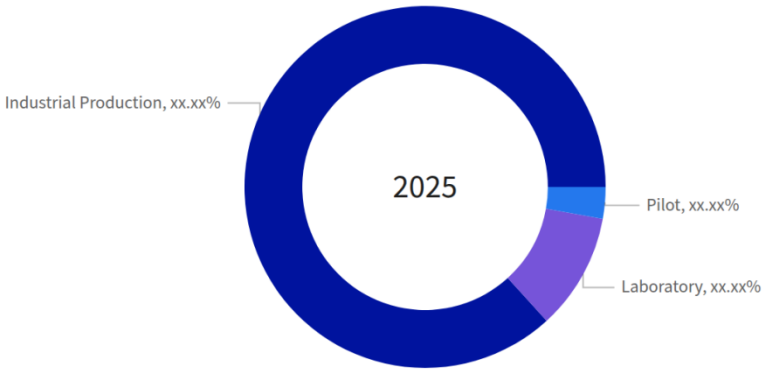


Figure 17. Global Ultra Fine Grinding Mill Market, by Deployment Scale, 2032 (USD Million)

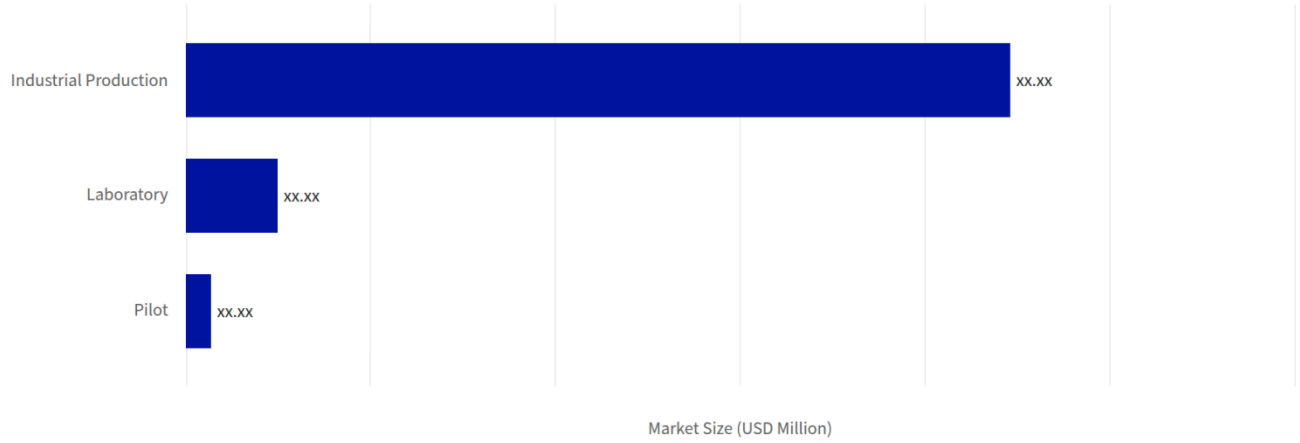


Table 125. Global Ultra Fine Grinding Mill Market, by Deployment Scale growth contribution, 2025-2032

Category	2025 value (USD Million)	2032 value (USD Million)	Added value (USD Million)	2025 share (%)	2032 share (%)	Change (pp)	Growth share (%)	CAGR (%)
Industrial Production	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Laboratory	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Pilot	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Scope total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 126. Global Ultra Fine Grinding Mill Market Size, by Deployment Scale, 2017-2040 (USD Million)

Deployment Scale	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Industrial Production	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Laboratory	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Pilot	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Sources & Evidence

1. Planetary Ball Mill PM 100

   · The PM xx.xx page establishes a benchtop equipment offering, not an Industrial Production delivery or support commitment. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))

   · Evidence informing base-year allocation inputs; displayed values and growth are calculated: The PM xx.xx is marketed as a benchtop instrument, supporting the small-laboratory pool classification without establishing sales weight.

   · Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The PM xx.xx is marketed as a benchtop instrument, supporting the small-laboratory pool classification without establishing sales weight.

2. STAR BURST: Wet Pulverization and Dispersion Device
   - SUGINO lists laboratory and production contexts within STAR BURST and describes STAR BURST xx.xx for research, pilot, and small-scale production roles. This establishes marketed roles, not customer adoption. ([sugino.com](https://www.sugino.com/en/products/wet-type-atomization-equipment/))
3. Technical Service - RETSCH
   - RETSCH advertises individual laboratory services and recurring service plans, expressly stating that plans are not available in all countries. ([retsch.com](https://www.retsch.com/contact-services/technical-service/))
4. HIGmill Plant - Metso
   - The HIGmill Plant portfolio advertises installation and commissioning service packages ranging from basic support to EPC. It does not establish a particular buyer's negotiated scope. ([metso.com](https://www.metso.com/portfolio/higmill-plant/))
5. NRRI Advances Efficient Grinding Technology on the Iron Range - Natural Resources Research Institute
   - NRRI's May xx.xx 2024 account distinguishes a loaned pilot vertical stirred mill from a separate planned bench-scale purchase. It establishes different acquisition contexts, not a universal loan entitlement. ([nrri.umn.edu](https://nrri.umn.edu/news/stm-vertical-grinding))
   - Taxonomy evidence: The May xx.xx 2024 institutional account distinguishes an installed pilot vertical stirred mill from a separately planned bench-scale purchase and identifies ultrafine grinding among the technology's applications. ([nrri.umn.edu](https://nrri.umn.edu/news/stm-vertical-grinding))
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The institution distinguishes a planned bench-scale purchase from its loaned pilot equipment; not a completed-sale census.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The institution distinguishes a planned bench-scale purchase from its loaned pilot equipment; not a completed-sale census.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The May xx.xx 2024 account identifies a loaned pilot stirred mill; unpaid placement is not counted as equipment-sale revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The May xx.xx 2024 account identifies a loaned pilot stirred mill; unpaid placement is not counted as equipment-sale revenue.
6. Jet Mill - Contract History | CanadaBuys
   - Taxonomy evidence: The May xx.xx 2026 jet-mill award is classified under laboratory grinding equipment. It supplies purchaser-side evidence for a laboratory deployment category, not a 2025 sales observation. ([canadabuys.canada.ca](https://canadabuys.canada.ca/en/tender-opportunities/contract-history/cw2408170-xx.xx?utm_source=openai))
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: A May xx.xx 2026 laboratory jet-mill award totals CAD xx.xx; a dated procurement check, not a 2025 shipment or global average price.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: A May xx.xx 2026 laboratory jet-mill award totals CAD xx.xx; a dated procurement check, not a 2025 shipment or global average price.
7. Metso Receives Order for Grinding Mills to a Copper Project in Africa
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Large industrial equipment procurement supports the production-scale category premise.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Large industrial equipment procurement supports the production-scale category premise.
8. Pyrum Innovations AG - Interim Group Report January 1 to June 30, 2025
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The disclosed commercial-site grinding installation supports Industrial Production classification.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The disclosed commercial-site grinding installation supports Industrial Production classification.

9. Ultrafin Mill: Super Masscolloider, Masuko MKCA6-5J CE - University of Ljubljana
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The institutional inventory expressly identifies laboratory equipment, supporting deployment classification without establishing a purchase-year value.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The institutional inventory expressly identifies laboratory equipment, supporting deployment classification without establishing a purchase-year value.
10. Contract Manufacturing of Pharmaceuticals - YUKI GOSEI KOGYO CO., LTD.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operator distinguishes production jet mills from smaller equipment, supporting industrial deployment at a pharmaceutical contract manufacturer.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operator distinguishes production jet mills from smaller equipment, supporting industrial deployment at a pharmaceutical contract manufacturer.

11.1. Industrial Production

Table 127. Global Ultra Fine Grinding Mill Market Size, by Industrial Production, by Region, 2017-2040 (USD Million)

Region	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Africa	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Asia-Pacific	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Europe	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Latin America	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Middle East	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
North America	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 128. Global Ultra Fine Grinding Mill Market Size, by Industrial Production, by Group, 2017-2040 (USD Million)

Group	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
ASEAN	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
BRICS	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
European Union	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
G7	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
GCC	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
NATO	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx

Table 129. Global Ultra Fine Grinding Mill Market Size, by Industrial Production, by Country, 2017-2040 (USD Million)

Country	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Australia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Brazil	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Canada	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
China	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
France	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Germany	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
India	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Italy	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Japan	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mexico	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Russia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
South Korea	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Spain	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United Kingdom	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United States	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Others	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Sources & Evidence

1. Contract Manufacturing of Pharmaceuticals | Business Descriptions | YUKI GOSEI KOGYO CO.,LTD.

   · Taxonomy evidence: The operator distinguishes small equipment from manufacturing machines and lists production jet mills alongside an explicit ultrafine-particle capability. This supports industrial deployment at a contract manufacturer without including its processing-service receipts in equipment revenue. ([yuki-gosei.co.jp](https://www.yuki-gosei.co.jp/en/manufacture_on_assignment/medical/))

   · Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operator distinguishes production jet mills from smaller equipment, supporting industrial deployment at a pharmaceutical contract manufacturer.

   · Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operator distinguishes production jet mills from smaller equipment, supporting industrial deployment at a pharmaceutical contract manufacturer.

2. Pyrum Innovations AG - Interim Group Report January 1 to June 30, 2025
   - Taxonomy evidence: The purchaser's 2025 interim report records installation of a Hosokawa-developed jet-grinding plant at its commercial recovered-carbon-black operation and subsequent commissioning activity. This corroborates industrial deployment without treating total site expenditure or processed-material sales as mill-market revenue. ([pyrum.net](https://www.pyrum.net/wp-content/uploads/2025-xx.xx-xx.xx-en-pyrum-halfyear-report-2025.pdf))
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The disclosed commercial-site grinding installation supports Industrial Production classification.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The disclosed commercial-site grinding installation supports Industrial Production classification.
3. Mach for mixing/kneading/crushing/grinding etc imports by country | 2024
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: 2024 gross machinery imports provide the purchasing-index input: U.S. HS xx.xx imports were USD xx.xx. These are broad machinery purchases, not ultrafine mill sales.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: 2024 gross machinery imports provide the purchasing-index input: U.S. HS xx.xx imports were USD xx.xx. These are broad machinery purchases, not ultrafine mill sales.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Country observations include Brazil USD xx.xx and Argentina USD xx.xx under HS xx.xx supporting the regional model's purchasing inputs.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country observations include Brazil USD xx.xx and Argentina USD xx.xx under HS xx.xx supporting the regional model's purchasing inputs.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: HS xx.xx imports include Germany USD xx.xx and France USD xx.xx; individual country records, rather than the EU aggregate, enter the allocation.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: HS xx.xx imports include Germany USD xx.xx and France USD xx.xx; individual country records, rather than the EU aggregate, enter the allocation.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Turkey USD xx.xx and Saudi Arabia USD xx.xx are broad machinery purchasing inputs, not observed qualifying-market numerators.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Turkey USD xx.xx and Saudi Arabia USD xx.xx are broad machinery purchasing inputs, not observed qualifying-market numerators.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: South Africa USD xx.xx and Egypt USD xx.xx, together with additional African reporters, anchor the purchasing baskets.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: South Africa USD xx.xx and Egypt USD xx.xx, together with additional African reporters, anchor the purchasing baskets.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: China USD xx.xx, Indonesia USD xx.xx and Japan USD xx.xx anchor the regional purchasing index before explicit local-supply adjustments.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: China USD xx.xx, Indonesia USD xx.xx and Japan USD xx.xx anchor the regional purchasing index before explicit local-supply adjustments.

4. Crushing/grinding machines for earth/ stone/ore imports by country | 2024
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: 2024 mineral crushing/grinding imports supply the secondary purchasing-index input; they contain out-of-scope ordinary crushers and are not treated as qualifying market revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: 2024 mineral crushing/grinding imports supply the secondary purchasing-index input; they contain out-of-scope ordinary crushers and are not treated as qualifying market revenue.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Country-level mineral machinery import observations support the Latin American purchasing basket and its explicitly modeled mining/package adjustments.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country-level mineral machinery import observations support the Latin American purchasing basket and its explicitly modeled mining/package adjustments.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: European national import observations provide the mineral-machinery component of the common purchasing index; the regional aggregate is not an extra country.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: European national import observations provide the mineral-machinery component of the common purchasing index; the regional aggregate is not an extra country.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Saudi Arabia and Turkey have separately reported mineral machinery imports, supporting national rather than bloc-wide purchasing inputs.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Saudi Arabia and Turkey have separately reported mineral machinery imports, supporting national rather than bloc-wide purchasing inputs.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: African reporter observations include major destinations outside the mandatory-country inventory, constraining a substantial noncatalog demand pool.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: African reporter observations include major destinations outside the mandatory-country inventory, constraining a substantial noncatalog demand pool.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Asia-Pacific and Central Asian reporter observations anchor the mineral-machinery component and unlisted-destination basket.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Asia-Pacific and Central Asian reporter observations anchor the mineral-machinery component and unlisted-destination basket.
5. Mach for mixing/kneading/crushing/grinding etc imports by country | 2021
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports were USD xx.xx. The model applies a qualified timing/access bridge and does not describe this as current trade.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports were USD xx.xx. The model applies a qualified timing/access bridge and does not describe this as current trade.
6. Crushing/grinding machines for earth/ stone/ore imports by country | 2021
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports of USD xx.xx provide the second historical purchasing primitive; the 2025 and 2032 allocations remain modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports of USD xx.xx provide the second historical purchasing primitive; the 2025 and 2032 allocations remain modeled.

7. World Manufacturing Production and Trade, Quarter IV 2025
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The report's mixed North American manufacturing conditions constrain a uniform high-growth assumption; output is not equated with mill purchasing.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Recent Latin American manufacturing weakness is counterevidence to immediate region-wide acceleration; forecast equipment factors remain conditional.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: European manufacturing stagnation and national divergence constrain the assumed relative equipment-purchasing path.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country-level manufacturing heterogeneity constrains the forecast; no single regional output rate is converted into machinery demand.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: African output observations include national counterexamples, supporting differentiated rather than uniform purchasing assumptions.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: China and other Asian manufacturing expansion, with national exceptions, provides directional context rather than an observed ultrafine-equipment growth rate.
8. Business Unit Grinding & Dispersing - NETZSCH
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The supplier documents local grinding-equipment production and commercial operations in Germany, the United States, Brazil, Russia, India and China. This supports considering domestic supply omitted by import statistics, but does not measure the model's correction factors.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The supplier documents local grinding-equipment production and commercial operations in Germany, the United States, Brazil, Russia, India and China. This supports considering domestic supply omitted by import statistics, but does not measure the model's correction factors.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Documented local commercial supply in China and India qualifies an import-only purchasing model; manufacturing location is not itself counted as buyer demand.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Documented local commercial supply in China and India qualifies an import-only purchasing model; manufacturing location is not itself counted as buyer demand.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Documented U.S. production and local commercial operations support an explicit, uncertain domestic-supply bridge rather than treating imports as the entire numerator.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Documented U.S. production and local commercial operations support an explicit, uncertain domestic-supply bridge rather than treating imports as the entire numerator.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Brazilian local production and commercial operations qualify reliance on imports alone, without establishing the assumed domestic sales amount.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Brazilian local production and commercial operations qualify reliance on imports alone, without establishing the assumed domestic sales amount.
9. High Energy Planetary Ball Mill - IIT Bombay
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The 2024 solicitation concerns one mill and requires two registration stages. It supports a purchaser-specific access constraint, not an award, national procurement conversion rate or forecast revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The 2024 solicitation concerns one mill and requires two registration stages. It supports a purchaser-specific access constraint, not an award, national procurement conversion rate or forecast revenue.

10. Metso receives order for grinding mills to a copper project in Africa
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The EUR xx.xx August 2024 HIGmill equipment/auxiliary/services order establishes a commercial package in Africa but identifies neither country nor annual revenue recognition. It constrains attribution and is not added to 2025 demand.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The EUR xx.xx August 2024 HIGmill equipment/auxiliary/services order establishes a commercial package in Africa but identifies neither country nor annual revenue recognition. It constrains attribution and is not added to 2025 demand.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Large industrial equipment procurement supports the production-scale category premise.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Large industrial equipment procurement supports the production-scale category premise.
11. Methodology - UNIDO Industrial Analytics Platform
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The methodology notes that U.S. trade coverage includes Puerto Rico, reinforcing that the national purchasing proxy must not be renormalized to the xx.xx-state inventory.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The methodology notes that U.S. trade coverage includes Puerto Rico, reinforcing that the national purchasing proxy must not be renormalized to the xx.xx-state inventory.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The methodology identifies Monaco within French trade coverage; the customs input is an imperfect national demand proxy rather than a directly observed country numerator.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The methodology identifies Monaco within French trade coverage; the customs input is an imperfect national demand proxy rather than a directly observed country numerator.

11.2. Laboratory

Table 130. Global Ultra Fine Grinding Mill Market Size, by Laboratory, by Region, 2017-2040 (USD Million)

Region	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Africa	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Asia-Pacific	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Europe	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Latin America	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Middle East	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
North America	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 131. Global Ultra Fine Grinding Mill Market Size, by Laboratory, by Group, 2017-2040 (USD Million)

Group	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
ASEAN	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
BRICS	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
European Union	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
G7	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
GCC	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
NATO	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx

Table 132. Global Ultra Fine Grinding Mill Market Size, by Laboratory, by Country, 2017-2040 (USD Million)

Country	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Australia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Brazil	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Canada	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
China	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
France	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Germany	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
India	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Italy	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Japan	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mexico	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Russia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
South Korea	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Spain	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United Kingdom	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United States	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Others	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Sources & Evidence

1. NRRI advances efficient grinding technology on the Iron Range

   · Taxonomy evidence: The institution separately states that it is purchasing a smaller version for bench research and proof-of-concept work. ([nrri.umn.edu](https://nrri.umn.edu/news/stm-vertical-grinding))

   · Evidence informing base-year allocation inputs; displayed values and growth are calculated: The institution distinguishes a planned bench-scale purchase from its loaned pilot equipment; not a completed-sale census.

   · Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The institution distinguishes a planned bench-scale purchase from its loaned pilot equipment; not a completed-sale census.

2. Jet Mill - Contract History | CanadaBuys

   · Taxonomy evidence: The contract identifies Natural Resources Canada as buyer and assigns the jet mill to a laboratory-equipment commodity classification. ([canadabuys.canada.ca](https://canadabuys.canada.ca/en/tender-opportunities/contract-history/cw2408170-xx.xx?utm_source=openai))

   · Evidence informing base-year allocation inputs; displayed values and growth are calculated: A May xx.xx 2026 laboratory jet-mill award totals CAD xx.xx; a dated procurement check, not a 2025 shipment or global average price.

   · Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: A May xx.xx 2026 laboratory jet-mill award totals CAD xx.xx; a dated procurement check, not a 2025 shipment or global average price.

3. Mach for mixing/kneading/crushing/grinding etc imports by country | 2024
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: 2024 gross machinery imports provide the purchasing-index input: U.S. HS xx.xx imports were USD xx.xx. These are broad machinery purchases, not ultrafine mill sales.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: 2024 gross machinery imports provide the purchasing-index input: U.S. HS xx.xx imports were USD xx.xx. These are broad machinery purchases, not ultrafine mill sales.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Country observations include Brazil USD xx.xx and Argentina USD xx.xx under HS xx.xx supporting the regional model's purchasing inputs.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country observations include Brazil USD xx.xx and Argentina USD xx.xx under HS xx.xx supporting the regional model's purchasing inputs.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: HS xx.xx imports include Germany USD xx.xx and France USD xx.xx; individual country records, rather than the EU aggregate, enter the allocation.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: HS xx.xx imports include Germany USD xx.xx and France USD xx.xx; individual country records, rather than the EU aggregate, enter the allocation.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Turkey USD xx.xx and Saudi Arabia USD xx.xx are broad machinery purchasing inputs, not observed qualifying-market numerators.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Turkey USD xx.xx and Saudi Arabia USD xx.xx are broad machinery purchasing inputs, not observed qualifying-market numerators.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: South Africa USD xx.xx and Egypt USD xx.xx, together with additional African reporters, anchor the purchasing baskets.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: South Africa USD xx.xx and Egypt USD xx.xx, together with additional African reporters, anchor the purchasing baskets.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: China USD xx.xx, Indonesia USD xx.xx and Japan USD xx.xx anchor the regional purchasing index before explicit local-supply adjustments.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: China USD xx.xx, Indonesia USD xx.xx and Japan USD xx.xx anchor the regional purchasing index before explicit local-supply adjustments.

4. Crushing/grinding machines for earth/ stone/ore imports by country | 2024
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: 2024 mineral crushing/grinding imports supply the secondary purchasing-index input; they contain out-of-scope ordinary crushers and are not treated as qualifying market revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: 2024 mineral crushing/grinding imports supply the secondary purchasing-index input; they contain out-of-scope ordinary crushers and are not treated as qualifying market revenue.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Country-level mineral machinery import observations support the Latin American purchasing basket and its explicitly modeled mining/package adjustments.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country-level mineral machinery import observations support the Latin American purchasing basket and its explicitly modeled mining/package adjustments.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: European national import observations provide the mineral-machinery component of the common purchasing index; the regional aggregate is not an extra country.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: European national import observations provide the mineral-machinery component of the common purchasing index; the regional aggregate is not an extra country.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Saudi Arabia and Turkey have separately reported mineral machinery imports, supporting national rather than bloc-wide purchasing inputs.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Saudi Arabia and Turkey have separately reported mineral machinery imports, supporting national rather than bloc-wide purchasing inputs.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: African reporter observations include major destinations outside the mandatory-country inventory, constraining a substantial noncatalog demand pool.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: African reporter observations include major destinations outside the mandatory-country inventory, constraining a substantial noncatalog demand pool.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Asia-Pacific and Central Asian reporter observations anchor the mineral-machinery component and unlisted-destination basket.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Asia-Pacific and Central Asian reporter observations anchor the mineral-machinery component and unlisted-destination basket.
5. Mach for mixing/kneading/crushing/grinding etc imports by country | 2021
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports were USD xx.xx. The model applies a qualified timing/access bridge and does not describe this as current trade.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports were USD xx.xx. The model applies a qualified timing/access bridge and does not describe this as current trade.
6. Crushing/grinding machines for earth/ stone/ore imports by country | 2021
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports of USD xx.xx provide the second historical purchasing primitive; the 2025 and 2032 allocations remain modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports of USD xx.xx provide the second historical purchasing primitive; the 2025 and 2032 allocations remain modeled.

7. World Manufacturing Production and Trade, Quarter IV 2025
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The report's mixed North American manufacturing conditions constrain a uniform high-growth assumption; output is not equated with mill purchasing.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Recent Latin American manufacturing weakness is counterevidence to immediate region-wide acceleration; forecast equipment factors remain conditional.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: European manufacturing stagnation and national divergence constrain the assumed relative equipment-purchasing path.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country-level manufacturing heterogeneity constrains the forecast; no single regional output rate is converted into machinery demand.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: African output observations include national counterexamples, supporting differentiated rather than uniform purchasing assumptions.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: China and other Asian manufacturing expansion, with national exceptions, provides directional context rather than an observed ultrafine-equipment growth rate.
8. Business Unit Grinding & Dispersing - NETZSCH
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The supplier documents local grinding-equipment production and commercial operations in Germany, the United States, Brazil, Russia, India and China. This supports considering domestic supply omitted by import statistics, but does not measure the model's correction factors.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The supplier documents local grinding-equipment production and commercial operations in Germany, the United States, Brazil, Russia, India and China. This supports considering domestic supply omitted by import statistics, but does not measure the model's correction factors.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Documented local commercial supply in China and India qualifies an import-only purchasing model; manufacturing location is not itself counted as buyer demand.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Documented local commercial supply in China and India qualifies an import-only purchasing model; manufacturing location is not itself counted as buyer demand.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Documented U.S. production and local commercial operations support an explicit, uncertain domestic-supply bridge rather than treating imports as the entire numerator.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Documented U.S. production and local commercial operations support an explicit, uncertain domestic-supply bridge rather than treating imports as the entire numerator.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Brazilian local production and commercial operations qualify reliance on imports alone, without establishing the assumed domestic sales amount.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Brazilian local production and commercial operations qualify reliance on imports alone, without establishing the assumed domestic sales amount.
9. High Energy Planetary Ball Mill - IIT Bombay
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The 2024 solicitation concerns one mill and requires two registration stages. It supports a purchaser-specific access constraint, not an award, national procurement conversion rate or forecast revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The 2024 solicitation concerns one mill and requires two registration stages. It supports a purchaser-specific access constraint, not an award, national procurement conversion rate or forecast revenue.

10. Metso receives order for grinding mills to a copper project in Africa
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The EUR xx.xx August 2024 HIGmill equipment/auxiliary/services order establishes a commercial package in Africa but identifies neither country nor annual revenue recognition. It constrains attribution and is not added to 2025 demand.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The EUR xx.xx August 2024 HIGmill equipment/auxiliary/services order establishes a commercial package in Africa but identifies neither country nor annual revenue recognition. It constrains attribution and is not added to 2025 demand.
11. Methodology - UNIDO Industrial Analytics Platform
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The methodology notes that U.S. trade coverage includes Puerto Rico, reinforcing that the national purchasing proxy must not be renormalized to the xx.xx-state inventory.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The methodology notes that U.S. trade coverage includes Puerto Rico, reinforcing that the national purchasing proxy must not be renormalized to the xx.xx-state inventory.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The methodology identifies Monaco within French trade coverage; the customs input is an imperfect national demand proxy rather than a directly observed country numerator.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The methodology identifies Monaco within French trade coverage; the customs input is an imperfect national demand proxy rather than a directly observed country numerator.
12. Planetary Ball Mill PM 100 - RETSCH
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The PM xx.xx is marketed as a benchtop instrument, supporting the small-laboratory pool classification without establishing sales weight.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The PM xx.xx is marketed as a benchtop instrument, supporting the small-laboratory pool classification without establishing sales weight.
13. Ultrafin Mill: Super Masscolloider, Masuko MKCA6-5J CE - University of Ljubljana
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The institutional inventory expressly identifies laboratory equipment, supporting deployment classification without establishing a purchase-year value.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The institutional inventory expressly identifies laboratory equipment, supporting deployment classification without establishing a purchase-year value.

11.3. Pilot

Table 133. Global Ultra Fine Grinding Mill Market Size, by Pilot, by Region, 2017-2040 (USD Million)

Region	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Africa	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Asia-Pacific	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Europe	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Latin America	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Middle East	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
North America	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 134. Global Ultra Fine Grinding Mill Market Size, by Pilot, by Group, 2017-2040 (USD Million)

Group	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
ASEAN	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
BRICS	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
European Union	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
G7	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
GCC	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
NATO	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx

Table 135. Global Ultra Fine Grinding Mill Market Size, by Pilot, by Country, 2017-2040 (USD Million)

Country	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Australia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Brazil	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Canada	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
China	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
France	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Germany	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
India	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Italy	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Japan	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mexico	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Russia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
South Korea	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Spain	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United Kingdom	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United States	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Others	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Sources & Evidence

1. NRRI advances efficient grinding technology on the Iron Range

   · Taxonomy evidence: The institution identifies its vertical stirred mill as pilot-scale and loaned. This supports the deployment distinction but does not establish an equipment-sale receipt. ([nrri.umn.edu](https://nrri.umn.edu/news/stm-vertical-grinding))

   · Evidence informing base-year allocation inputs; displayed values and growth are calculated: The May xx.xx 2024 account identifies a loaned pilot stirred mill; unpaid placement is not counted as equipment-sale revenue.

   · Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The May xx.xx 2024 account identifies a loaned pilot stirred mill; unpaid placement is not counted as equipment-sale revenue.

2. Mach for mixing/kneading/crushing/grinding etc imports by country | 2024
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: 2024 gross machinery imports provide the purchasing-index input: U.S. HS xx.xx imports were USD xx.xx. These are broad machinery purchases, not ultrafine mill sales.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: 2024 gross machinery imports provide the purchasing-index input: U.S. HS xx.xx imports were USD xx.xx. These are broad machinery purchases, not ultrafine mill sales.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Country observations include Brazil USD xx.xx and Argentina USD xx.xx under HS xx.xx supporting the regional model's purchasing inputs.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country observations include Brazil USD xx.xx and Argentina USD xx.xx under HS xx.xx supporting the regional model's purchasing inputs.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: HS xx.xx imports include Germany USD xx.xx and France USD xx.xx; individual country records, rather than the EU aggregate, enter the allocation.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: HS xx.xx imports include Germany USD xx.xx and France USD xx.xx; individual country records, rather than the EU aggregate, enter the allocation.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Turkey USD xx.xx and Saudi Arabia USD xx.xx are broad machinery purchasing inputs, not observed qualifying-market numerators.
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   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: China USD xx.xx, Indonesia USD xx.xx and Japan USD xx.xx anchor the regional purchasing index before explicit local-supply adjustments.
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   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: 2024 mineral crushing/grinding imports supply the secondary purchasing-index input; they contain out-of-scope ordinary crushers and are not treated as qualifying market revenue.
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   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country-level mineral machinery import observations support the Latin American purchasing basket and its explicitly modeled mining/package adjustments.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: European national import observations provide the mineral-machinery component of the common purchasing index; the regional aggregate is not an extra country.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: European national import observations provide the mineral-machinery component of the common purchasing index; the regional aggregate is not an extra country.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Saudi Arabia and Turkey have separately reported mineral machinery imports, supporting national rather than bloc-wide purchasing inputs.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Saudi Arabia and Turkey have separately reported mineral machinery imports, supporting national rather than bloc-wide purchasing inputs.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: African reporter observations include major destinations outside the mandatory-country inventory, constraining a substantial noncatalog demand pool.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: African reporter observations include major destinations outside the mandatory-country inventory, constraining a substantial noncatalog demand pool.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Asia-Pacific and Central Asian reporter observations anchor the mineral-machinery component and unlisted-destination basket.
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4. Mach for mixing/kneading/crushing/grinding etc imports by country | 2021
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports were USD xx.xx. The model applies a qualified timing/access bridge and does not describe this as current trade.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports were USD xx.xx. The model applies a qualified timing/access bridge and does not describe this as current trade.
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   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports of USD xx.xx provide the second historical purchasing primitive; the 2025 and 2032 allocations remain modeled.
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6. World Manufacturing Production and Trade, Quarter IV 2025
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The report's mixed North American manufacturing conditions constrain a uniform high-growth assumption; output is not equated with mill purchasing.
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   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country-level manufacturing heterogeneity constrains the forecast; no single regional output rate is converted into machinery demand.
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   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Documented U.S. production and local commercial operations support an explicit, uncertain domestic-supply bridge rather than treating imports as the entire numerator.
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   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Brazilian local production and commercial operations qualify reliance on imports alone, without establishing the assumed domestic sales amount.
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   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The 2024 solicitation concerns one mill and requires two registration stages. It supports a purchaser-specific access constraint, not an award, national procurement conversion rate or forecast revenue.
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10. Methodology - UNIDO Industrial Analytics Platform
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The methodology notes that U.S. trade coverage includes Puerto Rico, reinforcing that the national purchasing proxy must not be renormalized to the xx.xx-state inventory.
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    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The methodology identifies Monaco within French trade coverage; the customs input is an imperfect national demand proxy rather than a directly observed country numerator.

12. Ultra Fine Grinding Mill Market, by Sales Channel

Sales Channel should describe the seller's commercial role rather than the location of a website or contact. Manufacturer-Direct Sales must be distinguished from Agent-Mediated Sales and Independent Reseller Sales through affiliation, principal-account authority, and ownership of the goods. ■■■ ■■■■■■ ■■■■■■■ ■■■■■■■■■■■■■■ ■■■■■■■■■ ■■■■■■■■■■ ■■■■■■■■■■■■■ ■■■■■■■ ■■■■■■■■■ ■■■■ ■■■■■■■■■■ ■■■■■■■■■ ■■■■■■■■ ■■■■■■■ ■■ ■■■■■■■■ ■■■■■■■■■ ■■■ ■■■■■■■ ■■■■■■■■■■■■ ■■■■■■■■■■■ ■■■ ■ ■■■■■■ ■■■■■■■ ■■■■■ ■■■■ ■■■ ■■■■■■■■ ■■■ ■■■■■■■■■■■ ■■■■■ ■■■■■■ ■■■■■■ ■■■■■■■■■ ■■■ ■■■■■■■■■■■ ■■■■■■ ■■■ ■■■ ■■■■■■■■■■■■ ■■ ■■■ ■■■■■■■■■■■■ ■■■■■■ ■■■■■■■■■ ■■■■■■■■■■■■■■■

Agent-Mediated Sales requires confirmation of what the intermediary can bind. Hosokawa Alpine's published conditions require company confirmation of transactions entered into by representatives and make written contractual scope authoritative. ■■■■ ■■■■■■■■■■ ■■■■■■■■■ ■■■■■■■ ■■■■ ■■ ■■■■■■■■■■■ ■■■■■■■ ■■■■■■■■ ■■■ ■■■■■■■■■■■ ■■■■■■■■■ ■■■■■■ ■■■ ■■■■■ ■■■■■■ ■■■■■■■■■■ ■■■■■■■■■ ■■■ ■■■■■■■■■■ ■■■ ■■■■■■■■ ■■■ ■■■■■■■ ■■■■■■■■■■■ ■■■ ■■■ ■■■■■■■■■■■■■■■■■■■■ ■■■■■■■■ ■■■■■ ■■■■■■■■■■ ■■■■■■■■ ■■ ■■■■■ ■■■■■■■■■■■■ ■■■ ■■ ■■■■■■■■■■■■ ■■■■■■ ■■■■■■■■■■■■■ ■■■■■■■■■■ ■■■ ■■■■■■■■■■■■ ■■ ■■■ ■■■■■■■■■ ■■■■■■■■■■■■■■

Buyer access and support remain additional gates across every channel. IIT Bombay's 2024 planetary-mill solicitation requires vendor and e-tender registration, while RETSCH expressly limits the territorial availability of its service plans. ■■ ■■■■■■■■■■■■ ■■■ ■■ ■■■■■■ ■■■■ ■■■ ■■■■■■■■ ■■■■■■■■ ■■■■■■■■■ ■■■ ■■■■■■■■ ■■■■■■■■■■■■■■ ■■ ■■■■■ ■■■■■■■■ ■ ■■■■■■■■ ■■■■■■■■ ■■■■ ■■■ ■■■■■■■■■ ■■■■ ■■■■■■■■■■■■ ■■■■■■■ ■■■■■■■■■■■■ ■■■■■■■■ ■■ ■■■■■■■■■■■ ■■■■■ ■■■ ■■■■■ ■■■ ■■■■■■ ■■■■■ ■■■■■■■■■■■ ■■■ ■■■■■■■■■ ■■■■■■ ■■ ■■■ ■■■■■ ■■■■ ■■■■■■■■■■ ■■■■■■■■■■ ■■■■■■■■■■ ■■■■■■■■■■■■ ■■■ ■■■■■■■■ ■■■■■■■■■■■■■ ■■■ ■ ■■■■■■■■ ■■■■■■■■■■ ■■■ ■■■■■■ ■■ ■■■■■■■■■■■■ ■■■■■■■

Figure 18. Global Ultra Fine Grinding Mill Market Size, by Sales Channel, 2025 (%)

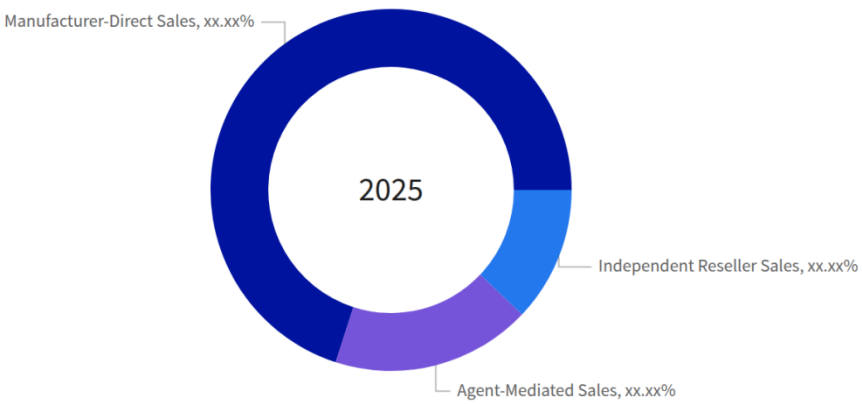


Figure 19. Global Ultra Fine Grinding Mill Market, by Sales Channel, 2032 (USD Million)

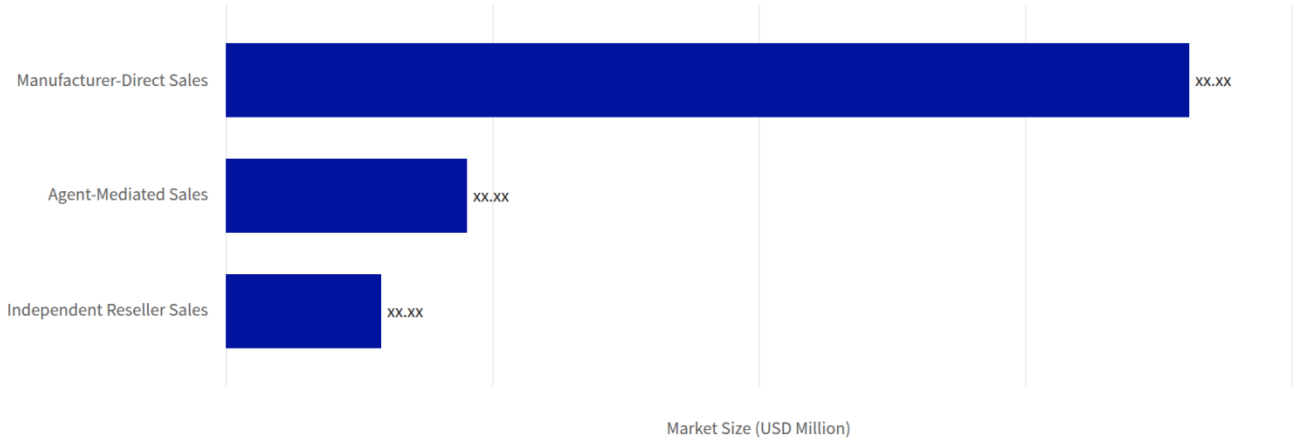


Table 136. Global Ultra Fine Grinding Mill Market, by Sales Channel growth contribution, 2025-2032

Category	2025 value (USD Million)	2032 value (USD Million)	Added value (USD Million)	2025 share (%)	2032 share (%)	Change (pp)	Growth share (%)	CAGR (%)
Agent-Mediated Sales	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Independent Reseller Sales	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Manufacturer-Direct Sales	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Scope total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 137. Global Ultra Fine Grinding Mill Market Size, by Sales Channel, 2017-2040 (USD Million)

Sales Channel	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Agent-Mediated Sales	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Independent Reseller Sales	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Manufacturer-Direct Sales	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Sources & Evidence

1. Your Local Contact - RETSCH

   · RETSCH describes a customer network comprising daughter companies and trained distributors. A network listing does not independently establish a seller's affiliation, ownership role, or signing authority for a transaction. ([retsch.com](https://www.retsch.com/contact-services/))

   · Evidence informing base-year allocation inputs; displayed values and growth are calculated: RETSCH describes a network including daughter companies. Manufacturer affiliation, rather than contact location, informs direct-route attribution. ([retsch.com](https://www.retsch.com/contact-services/))

   · Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: RETSCH describes a network including daughter companies. Manufacturer affiliation, rather than contact location, informs direct-route attribution. ([retsch.com](https://www.retsch.com/contact-services/))

   · Evidence informing base-year allocation inputs; displayed values and growth are calculated: The network also includes trained distributors, establishing a resale-access premise but not distributor ownership roles or annual sales weights. ([retsch.com](https://www.retsch.com/contact-services/))

   · Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The network also includes trained distributors, establishing a resale-access premise but not distributor ownership roles or annual sales weights. ([retsch.com](https://www.retsch.com/contact-services/))

2. Technical Service - RETSCH

   · The service-plan territorial disclaimer establishes a separate support-eligibility question that cannot be settled from channel presence alone. This commercial implication is analytical. ([retsch.com](https://www.retsch.com/contact-services/technical-service/))

3. High Energy Planetary Ball Mill - IIT Bombay

   · The institutional registration requirements establish a purchasing-access condition separate from a supplier's direct or intermediated commercial route. ([iitb.ac.in](https://www.iitb.ac.in/tenders/high-energy-planetary-ball-mill))

4. HOSOKAWA ALPINE Aktiengesellschaft - Conditions of Sale 371_00 EN

   · Hosokawa Alpine's conditions require company confirmation of transactions entered into by representatives and make the written sales contract authoritative for agreed scope. These are the supplier's published terms, not proof of every negotiated contract. ([hosokawa-alpine.com](https://www.hosokawa-alpine.com/fileadmin/allgemein/Legal/AGB/AGB_Verkaufsbedingungen_en_371_00.pdf))

   · Evidence informing base-year allocation inputs; displayed values and growth are calculated: Hosokawa requires company confirmation of representatives' transactions and makes contractual scope authoritative. The terms support agency-role attribution, not the assumed agent percentage. ([hosokawa-alpine.com](https://www.hosokawa-alpine.com/fileadmin/allgemein/Legal/AGB/AGB_Verkaufsbedingungen_en_371_00.pdf))

   · Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Hosokawa requires company confirmation of representatives' transactions and makes contractual scope authoritative. The terms support agency-role attribution, not the assumed agent percentage. ([hosokawa-alpine.com](https://www.hosokawa-alpine.com/fileadmin/allgemein/Legal/AGB/AGB_Verkaufsbedingungen_en_371_00.pdf))

5. ISIC Rev.5, Class 4610: Wholesale on a Fee or Contract Basis - United Nations Statistics Division
   - The United Nations classification distinguishes fee- or commission-based intermediation without ownership from own-account wholesale activity. It does not identify the role of a particular mill seller. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))
   - Taxonomy evidence: ISIC Rev.xx.xx class xx.xx includes central purchasing units only when they act as intermediaries without owning goods, and includes Internet-mediated principal-account transactions. Thus neither a purchasing-unit label nor an online transaction independently determines the retained selling route. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))
   - Taxonomy evidence: The international classification distinguishes fee- or commission-based intermediation without ownership from wholesale activity on the seller's own account. This supports a contractual-role partition rather than a geography-specific channel taxonomy. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: ISIC Rev.xx.xx class xx.xx defines fee/commission intermediation without ownership, supporting a non-title-taking agency numerator distinct from goods supplied on own account. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: ISIC Rev.xx.xx class xx.xx defines fee/commission intermediation without ownership, supporting a non-title-taking agency numerator distinct from goods supplied on own account. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Own-account wholesale is excluded from the agency class, supporting the reseller/agent partition without supplying ultrafine-mill channel shares. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own-account wholesale is excluded from the agency class, supporting the reseller/agent partition without supplying ultrafine-mill channel shares. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))
6. NRRI advances efficient grinding technology on the Iron Range
   - Taxonomy evidence: The account names an agreement with the mill manufacturer, but does not disclose a complete sales contract or independent commission arrangements; it cannot conclusively classify the selling route. ([nrri.umn.edu](https://nrri.umn.edu/news/stm-vertical-grinding))
7. Jet Mill - Contract History | CanadaBuys
   - Taxonomy evidence: The award identifies a recipient, a contracting department, and a buying department, but does not establish manufacturer ownership, equipment title transfer, or commission arrangements. Its named recipient alone cannot conclusively distinguish the three retained selling routes. ([canadabuys.canada.ca](https://canadabuys.canada.ca/en/tender-opportunities/contract-history/cw2408170-xx.xx))
8. Frequently Asked Questions - Wholesale
   - Taxonomy evidence: The Census wholesale instructions include gross selling value negotiated on commission and several service or rental receipts within broad reporting items. Consequently, such wholesale totals are not directly equivalent to qualifying new-mill revenue; deduplication and boundary exclusions are analytical requirements. ([census.gov](https://www.census.gov/programs-surveys/economic-census/year/2022/about/faq/faq-wholesale.html))
   - Taxonomy evidence: The official definitions distinguish own-account wholesalers, manufacturer-affiliated sales establishments, and commission intermediaries; they are not ultrafine-mill channel shares. ([census.gov](https://www.census.gov/programs-surveys/economic-census/year/2022/about/faq/faq-wholesale.html))

9. VYSVĚTLENÍ ZADÁVACÍ DOKUMENTACE č. 3 - Explanation of Tender Documentation no.3

· Taxonomy evidence: A buyer-published January 2024 tender clarification reproduces a supplier's statement that it worked with Hosokawa Alpine on a jet-mill proposal and discusses contractual acceptance. It corroborates participation by a party distinct from the named OEM, but does not resolve whether that party was a title-taking reseller or non-title-taking agent. ([zakazky.vsb.cz](https://zakazky.vsb.cz/document_30086/f4228d321386ab352c099168be4e87cf-vysvetleni-zadavaci-dokumentace-c-_3-pdf))

12.1. Manufacturer-Direct Sales

Table 138. Global Ultra Fine Grinding Mill Market Size, by Manufacturer-Direct Sales, by Region, 2017-2040 (USD Million)

Region	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Africa	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Asia-Pacific	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Europe	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Latin America	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Middle East	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
North America	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 139. Global Ultra Fine Grinding Mill Market Size, by Manufacturer-Direct Sales, by Group, 2017-2040 (USD Million)

Group	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
ASEAN	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
BRICS	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
European Union	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
G7	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
GCC	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
NATO	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx

Table 140. Global Ultra Fine Grinding Mill Market Size, by Manufacturer-Direct Sales, by Country, 2017-2040 (USD Million)

Country	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Australia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Brazil	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Canada	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
China	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
France	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Germany	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
India	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Italy	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Japan	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mexico	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Russia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
South Korea	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Spain	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United Kingdom	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United States	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Others	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Sources & Evidence

1. Frequently Asked Questions - Wholesale

   · Taxonomy evidence: Manufacturer sales branches are defined through ownership or corporate affiliation with the manufacturer.
   ([census.gov](https://www.census.gov/programs-surveys/economic-census/year/2022/about/faq/faq-wholesale.html))

2. Mach for mixing/kneading/crushing/grinding etc imports by country | 2024
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: 2024 gross machinery imports provide the purchasing-index input: U.S. HS xx.xx imports were USD xx.xx. These are broad machinery purchases, not ultrafine mill sales.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: 2024 gross machinery imports provide the purchasing-index input: U.S. HS xx.xx imports were USD xx.xx. These are broad machinery purchases, not ultrafine mill sales.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Country observations include Brazil USD xx.xx and Argentina USD xx.xx under HS xx.xx supporting the regional model's purchasing inputs.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country observations include Brazil USD xx.xx and Argentina USD xx.xx under HS xx.xx supporting the regional model's purchasing inputs.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: HS xx.xx imports include Germany USD xx.xx and France USD xx.xx; individual country records, rather than the EU aggregate, enter the allocation.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: HS xx.xx imports include Germany USD xx.xx and France USD xx.xx; individual country records, rather than the EU aggregate, enter the allocation.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Turkey USD xx.xx and Saudi Arabia USD xx.xx are broad machinery purchasing inputs, not observed qualifying-market numerators.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Turkey USD xx.xx and Saudi Arabia USD xx.xx are broad machinery purchasing inputs, not observed qualifying-market numerators.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: South Africa USD xx.xx and Egypt USD xx.xx, together with additional African reporters, anchor the purchasing baskets.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: South Africa USD xx.xx and Egypt USD xx.xx, together with additional African reporters, anchor the purchasing baskets.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: China USD xx.xx, Indonesia USD xx.xx and Japan USD xx.xx anchor the regional purchasing index before explicit local-supply adjustments.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: China USD xx.xx, Indonesia USD xx.xx and Japan USD xx.xx anchor the regional purchasing index before explicit local-supply adjustments.

3. Crushing/grinding machines for earth/ stone/ore imports by country | 2024
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: 2024 mineral crushing/grinding imports supply the secondary purchasing-index input; they contain out-of-scope ordinary crushers and are not treated as qualifying market revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: 2024 mineral crushing/grinding imports supply the secondary purchasing-index input; they contain out-of-scope ordinary crushers and are not treated as qualifying market revenue.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Country-level mineral machinery import observations support the Latin American purchasing basket and its explicitly modeled mining/package adjustments.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country-level mineral machinery import observations support the Latin American purchasing basket and its explicitly modeled mining/package adjustments.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: European national import observations provide the mineral-machinery component of the common purchasing index; the regional aggregate is not an extra country.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: European national import observations provide the mineral-machinery component of the common purchasing index; the regional aggregate is not an extra country.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Saudi Arabia and Turkey have separately reported mineral machinery imports, supporting national rather than bloc-wide purchasing inputs.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Saudi Arabia and Turkey have separately reported mineral machinery imports, supporting national rather than bloc-wide purchasing inputs.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: African reporter observations include major destinations outside the mandatory-country inventory, constraining a substantial noncatalog demand pool.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: African reporter observations include major destinations outside the mandatory-country inventory, constraining a substantial noncatalog demand pool.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Asia-Pacific and Central Asian reporter observations anchor the mineral-machinery component and unlisted-destination basket.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Asia-Pacific and Central Asian reporter observations anchor the mineral-machinery component and unlisted-destination basket.
4. Mach for mixing/kneading/crushing/grinding etc imports by country | 2021
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports were USD xx.xx. The model applies a qualified timing/access bridge and does not describe this as current trade.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports were USD xx.xx. The model applies a qualified timing/access bridge and does not describe this as current trade.
5. Crushing/grinding machines for earth/ stone/ore imports by country | 2021
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports of USD xx.xx provide the second historical purchasing primitive; the 2025 and 2032 allocations remain modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports of USD xx.xx provide the second historical purchasing primitive; the 2025 and 2032 allocations remain modeled.

6. World Manufacturing Production and Trade, Quarter IV 2025
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The report's mixed North American manufacturing conditions constrain a uniform high-growth assumption; output is not equated with mill purchasing.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Recent Latin American manufacturing weakness is counterevidence to immediate region-wide acceleration; forecast equipment factors remain conditional.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: European manufacturing stagnation and national divergence constrain the assumed relative equipment-purchasing path.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country-level manufacturing heterogeneity constrains the forecast; no single regional output rate is converted into machinery demand.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: African output observations include national counterexamples, supporting differentiated rather than uniform purchasing assumptions.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: China and other Asian manufacturing expansion, with national exceptions, provides directional context rather than an observed ultrafine-equipment growth rate.
7. Business Unit Grinding & Dispersing - NETZSCH
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The supplier documents local grinding-equipment production and commercial operations in Germany, the United States, Brazil, Russia, India and China. This supports considering domestic supply omitted by import statistics, but does not measure the model's correction factors.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The supplier documents local grinding-equipment production and commercial operations in Germany, the United States, Brazil, Russia, India and China. This supports considering domestic supply omitted by import statistics, but does not measure the model's correction factors.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Documented local commercial supply in China and India qualifies an import-only purchasing model; manufacturing location is not itself counted as buyer demand.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Documented local commercial supply in China and India qualifies an import-only purchasing model; manufacturing location is not itself counted as buyer demand.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Documented U.S. production and local commercial operations support an explicit, uncertain domestic-supply bridge rather than treating imports as the entire numerator.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Documented U.S. production and local commercial operations support an explicit, uncertain domestic-supply bridge rather than treating imports as the entire numerator.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Brazilian local production and commercial operations qualify reliance on imports alone, without establishing the assumed domestic sales amount.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Brazilian local production and commercial operations qualify reliance on imports alone, without establishing the assumed domestic sales amount.
8. High Energy Planetary Ball Mill - IIT Bombay
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The 2024 solicitation concerns one mill and requires two registration stages. It supports a purchaser-specific access constraint, not an award, national procurement conversion rate or forecast revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The 2024 solicitation concerns one mill and requires two registration stages. It supports a purchaser-specific access constraint, not an award, national procurement conversion rate or forecast revenue.

9. Metso receives order for grinding mills to a copper project in Africa
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The EUR xx.xx August 2024 HIGmill equipment/auxiliary/services order establishes a commercial package in Africa but identifies neither country nor annual revenue recognition. It constrains attribution and is not added to 2025 demand.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The EUR xx.xx August 2024 HIGmill equipment/auxiliary/services order establishes a commercial package in Africa but identifies neither country nor annual revenue recognition. It constrains attribution and is not added to 2025 demand.
10. Methodology - UNIDO Industrial Analytics Platform
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The methodology notes that U.S. trade coverage includes Puerto Rico, reinforcing that the national purchasing proxy must not be renormalized to the xx.xx-state inventory.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The methodology notes that U.S. trade coverage includes Puerto Rico, reinforcing that the national purchasing proxy must not be renormalized to the xx.xx-state inventory.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The methodology identifies Monaco within French trade coverage; the customs input is an imperfect national demand proxy rather than a directly observed country numerator.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The methodology identifies Monaco within French trade coverage; the customs input is an imperfect national demand proxy rather than a directly observed country numerator.
11. Retsch Contact & Services - Contact Partners Worldwide
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: RETSCH describes a network including daughter companies. Manufacturer affiliation, rather than contact location, informs direct-route attribution. ([retsch.com](https://www.retsch.com/contact-services/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: RETSCH describes a network including daughter companies. Manufacturer affiliation, rather than contact location, informs direct-route attribution. ([retsch.com](https://www.retsch.com/contact-services/))

12.2. Agent-Mediated Sales

Table 141. Global Ultra Fine Grinding Mill Market Size, by Agent-Mediated Sales, by Region, 2017-2040 (USD Million)

Region	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Africa	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Asia-Pacific	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Europe	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Latin America	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Middle East	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
North America	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 142. Global Ultra Fine Grinding Mill Market Size, by Agent-Mediated Sales, by Group, 2017-2040 (USD Million)

Group	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
ASEAN	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
BRICS	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
European Union	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
G7	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
GCC	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
NATO	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx

Table 143. Global Ultra Fine Grinding Mill Market Size, by Agent-Mediated Sales, by Country, 2017-2040 (USD Million)

Country	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Australia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Brazil	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Canada	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
China	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
France	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Germany	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
India	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Italy	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Japan	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mexico	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Russia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
South Korea	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Spain	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United Kingdom	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United States	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Others	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Sources & Evidence

1. UNSD Classification Detail - ISIC Rev.5, Class 4610: Wholesale on a Fee or Contract Basis

   · Taxonomy evidence: The class's central-purchasing and Internet examples reinforce that agency classification depends on non-ownership and principal-account facilitation. This is a contractual-role reference, not evidence that any particular mill award used an agent.
   ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))

   · Taxonomy evidence: Commission agents and brokers facilitate transactions on a principal's account without owning the intermediated goods; intermediaries assuming ownership are excluded from this class.
   ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))

   · Evidence informing base-year allocation inputs; displayed values and growth are calculated: ISIC Rev.xx.xx class xx.xx defines fee/commission intermediation without ownership, supporting a non-title-taking agency numerator distinct from goods supplied on own account.
   ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))

   · Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: ISIC Rev.xx.xx class xx.xx defines fee/commission intermediation without ownership, supporting a non-title-taking agency numerator distinct from goods supplied on own account.
   ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))

2. Mach for mixing/kneading/crushing/grinding etc imports by country | 2024

   · Evidence informing base-year allocation inputs; displayed values and growth are calculated: 2024 gross machinery imports provide the purchasing-index input: U.S. HS xx.xx imports were USD xx.xx. These are broad machinery purchases, not ultrafine mill sales.

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   · Evidence informing base-year allocation inputs; displayed values and growth are calculated: South Africa USD xx.xx and Egypt USD xx.xx, together with additional African reporters, anchor the purchasing baskets.

   · Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: South Africa USD xx.xx and Egypt USD xx.xx, together with additional African reporters, anchor the purchasing baskets.

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   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Documented local commercial supply in China and India qualifies an import-only purchasing model; manufacturing location is not itself counted as buyer demand.
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   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Documented U.S. production and local commercial operations support an explicit, uncertain domestic-supply bridge rather than treating imports as the entire numerator.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Brazilian local production and commercial operations qualify reliance on imports alone, without establishing the assumed domestic sales amount.
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8. High Energy Planetary Ball Mill - IIT Bombay
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The 2024 solicitation concerns one mill and requires two registration stages. It supports a purchaser-specific access constraint, not an award, national procurement conversion rate or forecast revenue.
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10. Methodology - UNIDO Industrial Analytics Platform
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The methodology notes that U.S. trade coverage includes Puerto Rico, reinforcing that the national purchasing proxy must not be renormalized to the xx.xx-state inventory.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The methodology notes that U.S. trade coverage includes Puerto Rico, reinforcing that the national purchasing proxy must not be renormalized to the xx.xx-state inventory.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The methodology identifies Monaco within French trade coverage; the customs input is an imperfect national demand proxy rather than a directly observed country numerator.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The methodology identifies Monaco within French trade coverage; the customs input is an imperfect national demand proxy rather than a directly observed country numerator.
11. HOSOKAWA ALPINE Aktiengesellschaft - Conditions of Sale 371_00 EN
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Hosokawa requires company confirmation of representatives' transactions and makes contractual scope authoritative. The terms support agency-role attribution, not the assumed agent percentage. ([hosokawa-alpine.com](https://www.hosokawa-alpine.com/fileadmin/allgemein/Legal/AGB/AGB_Verkaufsbedingungen_en_371_00.pdf))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Hosokawa requires company confirmation of representatives' transactions and makes contractual scope authoritative. The terms support agency-role attribution, not the assumed agent percentage. ([hosokawa-alpine.com](https://www.hosokawa-alpine.com/fileadmin/allgemein/Legal/AGB/AGB_Verkaufsbedingungen_en_371_00.pdf))

12.3. Independent Reseller Sales

Table 144. Global Ultra Fine Grinding Mill Market Size, by Independent Reseller Sales, by Region, 2017-2040 (USD Million)

Region	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Africa	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Asia-Pacific	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Europe	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Latin America	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Middle East	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
North America	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 145. Global Ultra Fine Grinding Mill Market Size, by Independent Reseller Sales, by Group, 2017-2040 (USD Million)

Group	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
ASEAN	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
BRICS	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
European Union	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
G7	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
GCC	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
NATO	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx

Table 146. Global Ultra Fine Grinding Mill Market Size, by Independent Reseller Sales, by Country, 2017-2040 (USD Million)

Country	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Australia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Brazil	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Canada	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
China	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
France	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Germany	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
India	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Italy	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Japan	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mexico	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Russia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
South Korea	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Spain	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United Kingdom	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United States	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Others	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Sources & Evidence

1. Frequently Asked Questions - Wholesale

   · Taxonomy evidence: Merchant wholesalers buy merchandise on their own account and resell goods produced by other firms. ([census.gov](https://www.census.gov/programs-surveys/economic-census/year/2022/about/faq/faq-wholesale.html))

2. Mach for mixing/kneading/crushing/grinding etc imports by country | 2024
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   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: HS xx.xx imports include Germany USD xx.xx and France USD xx.xx; individual country records, rather than the EU aggregate, enter the allocation.
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   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The methodology identifies Monaco within French trade coverage; the customs input is an imperfect national demand proxy rather than a directly observed country numerator.
11. Retsch Contact & Services - Contact Partners Worldwide
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The network also includes trained distributors, establishing a resale-access premise but not distributor ownership roles or annual sales weights. ([retsch.com](https://www.retsch.com/contact-services/))
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The network also includes trained distributors, establishing a resale-access premise but not distributor ownership roles or annual sales weights. ([retsch.com](https://www.retsch.com/contact-services/))
12. UNSD - ISIC Rev.5, Class 4610: Wholesale on a Fee or Contract Basis
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Own-account wholesale is excluded from the agency class, supporting the reseller/agent partition without supplying ultrafine-mill channel shares. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own-account wholesale is excluded from the agency class, supporting the reseller/agent partition without supplying ultrafine-mill channel shares. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))

13. Ultra Fine Grinding Mill Market, by Processing State

[illegible] This operator-side distinction supports state-specific commercial comparisons, but does not prove that one state is preferable across applications. Buyers should shortlist the offered equipment against the required purchasing scope rather than assume that a shared milling label establishes substitutability.

Wet and Dry Grinding has a distinct commercial role where one offered model supports both states. [illegible] A shared platform can consolidate the equipment relationship, while separately specified mills preserve independent asset availability.

Figure 20. Global Ultra Fine Grinding Mill Market Size, by Processing State, 2025 (%)

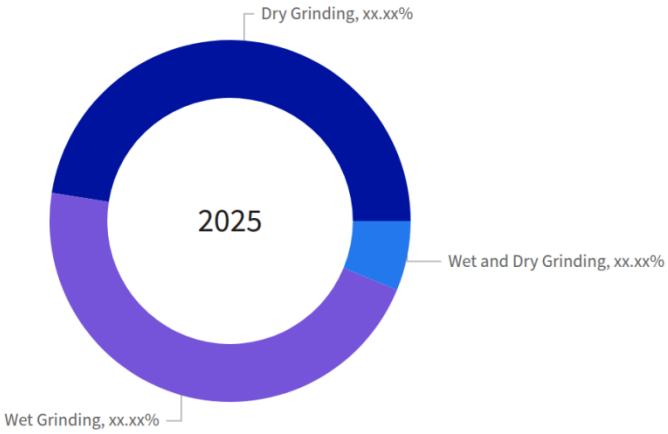


Figure 21. Global Ultra Fine Grinding Mill Market, by Processing State, 2032 (USD Million)

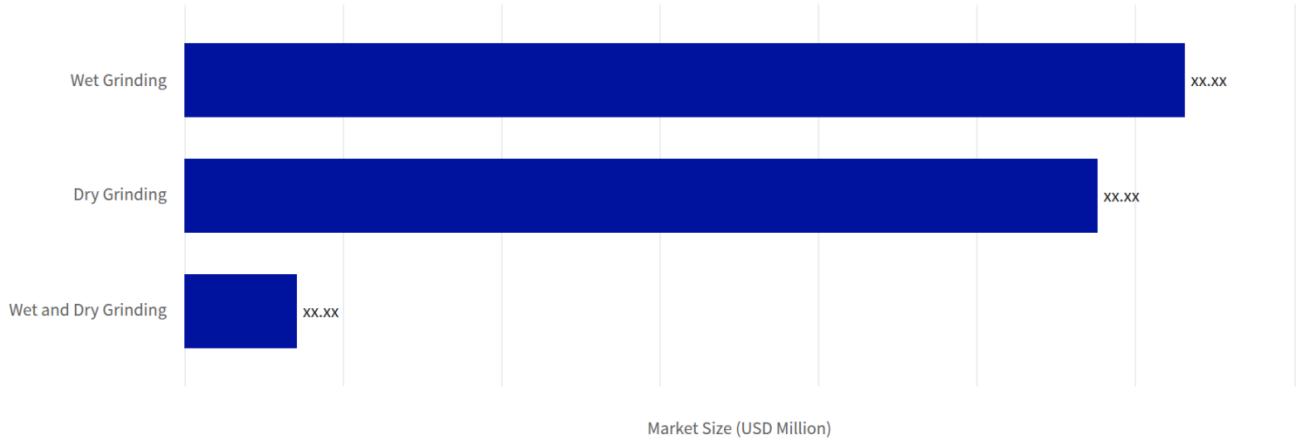


Table 147. Global Ultra Fine Grinding Mill Market, by Processing State growth contribution, 2025-2032

Category	2025 value (USD Million)	2032 value (USD Million)	Added value (USD Million)	2025 share (%)	2032 share (%)	Change (pp)	Growth share (%)	CAGR (%)
Dry Grinding	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wet and Dry Grinding	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wet Grinding	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Scope total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 148. Global Ultra Fine Grinding Mill Market Size, by Processing State, 2017-2040 (USD Million)

Processing State	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Dry Grinding	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wet and Dry Grinding	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wet Grinding	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Sources & Evidence

1. Planetary Ball Mill PM 100

   · RETSCH advertises dry and wet grinding capability for the named PM xx.xx model; the portfolio description does not establish a customer's supplied configuration. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))

   · Evidence informing base-year allocation inputs; displayed values and growth are calculated: The product page advertises both dry and wet capability. Actual dual-state purchase inclusion remains an explicit model assumption. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))

   · Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The product page advertises both dry and wet capability. Actual dual-state purchase inclusion remains an explicit model assumption. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))

2. IBU-tec | Mills » Milling Technology for Dry and Wet Grinding
   - IBU-tec separately inventories wet-grinding agitator bead mills and dry-grinding opposed-jet mills. This is an operator-specific distinction, not comparative performance evidence. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
   - Taxonomy evidence: The equipment operator separately inventories wet-grinding agitator bead mills and dry-grinding jet mills. This is purchaser/operator-side corroboration of the commercial state distinction, not a supplier portfolio used as the entire taxonomy. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operator table separately lists two dry opposed-jet units. This is an installed-inventory observation, not a shipment or revenue ratio. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operator table separately lists two dry opposed-jet units. This is an installed-inventory observation, not a shipment or revenue ratio. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Three wet agitator-bead units are separately inventoried, supporting state-specific commercial classification without using their count as a market weight. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Three wet agitator-bead units are separately inventoried, supporting state-specific commercial classification without using their count as a market weight. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
3. Comminution - NTNU
   - NTNU's inventory identifies wet/dry capability for its stirred attritor and planetary mill. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
   - Taxonomy evidence: The institutional equipment inventory records processing state, operating mode, and deployment scale as separate attributes, supporting their treatment as independent classification questions. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: NTNU separately records wet/dry capability for stirred and planetary equipment; the inventory is not a representative value-share dataset. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: NTNU separately records wet/dry capability for stirred and planetary equipment; the inventory is not a representative value-share dataset. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
4. Supply of High energy planetary ball mill - IIT(BHU)/ME/PS/2024-25/TD/003
   - Taxonomy evidence: The July xx.xx 2024 procurement specifies a benchtop high-energy planetary ball mill for duties including nanoscale ultrafine grinding and expressly requires wet and dry capability. This establishes procurement demand, not completed delivery. ([iitbhu.ac.in](https://www.iitbhu.ac.in/contents/institute/2024/tender/tender_me_ps_003.pdf))
5. SWECO Vibratory Grinding and Particle Size Reduction Equipment
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Named wet/dry models establish dual-state availability; they do not establish the exact supplied configuration or a market-wide value share. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Named wet/dry models establish dual-state availability; they do not establish the exact supplied configuration or a market-wide value share. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))
6. Wet Milling and Dispersing Device - Star Burst - Sugino Corp.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The wet-jet offering supports wet-state classification within the joint value model, not the total Wet Grinding share. ([suginocorp.com](https://www.suginocorp.com/star-burst/))
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The wet-jet offering supports wet-state classification within the joint value model, not the total Wet Grinding share. ([suginocorp.com](https://www.suginocorp.com/star-burst/))

7. Dry Batch Or Continuous Laboratory Mills - Union Process
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The same named offering advertises wet/dry capability, supporting a dual-state category premise rather than an observed adoption percentage. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The same named offering advertises wet/dry capability, supporting a dual-state category premise rather than an observed adoption percentage. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))

13.1. Dry Grinding

Table 149. Global Ultra Fine Grinding Mill Market Size, by Dry Grinding, by Region, 2017-2040 (USD Million)

Region	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Africa	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Asia-Pacific	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Europe	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Latin America	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Middle East	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
North America	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 150. Global Ultra Fine Grinding Mill Market Size, by Dry Grinding, by Group, 2017-2040 (USD Million)

Group	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
ASEAN	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
BRICS	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
European Union	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
G7	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
GCC	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
NATO	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx

Table 151. Global Ultra Fine Grinding Mill Market Size, by Dry Grinding, by Country, 2017-2040 (USD Million)

Country	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Australia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Brazil	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Canada	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
China	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
France	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Germany	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
India	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Italy	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Japan	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mexico	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Russia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
South Korea	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Spain	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United Kingdom	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United States	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Others	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Sources & Evidence

1. Comminution - NTNU
   - Taxonomy evidence: The installed jet-mill/classifier rig is identified as dry-grinding equipment. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
2. IBU-tec | Mills » Milling Technology for Dry and Wet Grinding
   - Taxonomy evidence: The operator places its opposed-jet mills in its dry-grinding equipment inventory. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operator table separately lists two dry opposed-jet units. This is an installed-inventory observation, not a shipment or revenue ratio. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operator table separately lists two dry opposed-jet units. This is an installed-inventory observation, not a shipment or revenue ratio. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))

3. Mach for mixing/kneading/crushing/grinding etc imports by country | 2024
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: 2024 gross machinery imports provide the purchasing-index input: U.S. HS xx.xx imports were USD xx.xx. These are broad machinery purchases, not ultrafine mill sales.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: 2024 gross machinery imports provide the purchasing-index input: U.S. HS xx.xx imports were USD xx.xx. These are broad machinery purchases, not ultrafine mill sales.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Country observations include Brazil USD xx.xx and Argentina USD xx.xx under HS xx.xx supporting the regional model's purchasing inputs.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country observations include Brazil USD xx.xx and Argentina USD xx.xx under HS xx.xx supporting the regional model's purchasing inputs.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: HS xx.xx imports include Germany USD xx.xx and France USD xx.xx; individual country records, rather than the EU aggregate, enter the allocation.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: HS xx.xx imports include Germany USD xx.xx and France USD xx.xx; individual country records, rather than the EU aggregate, enter the allocation.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Turkey USD xx.xx and Saudi Arabia USD xx.xx are broad machinery purchasing inputs, not observed qualifying-market numerators.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Turkey USD xx.xx and Saudi Arabia USD xx.xx are broad machinery purchasing inputs, not observed qualifying-market numerators.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: South Africa USD xx.xx and Egypt USD xx.xx, together with additional African reporters, anchor the purchasing baskets.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: South Africa USD xx.xx and Egypt USD xx.xx, together with additional African reporters, anchor the purchasing baskets.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: China USD xx.xx, Indonesia USD xx.xx and Japan USD xx.xx anchor the regional purchasing index before explicit local-supply adjustments.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: China USD xx.xx, Indonesia USD xx.xx and Japan USD xx.xx anchor the regional purchasing index before explicit local-supply adjustments.

4. Crushing/grinding machines for earth/ stone/ore imports by country | 2024
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: 2024 mineral crushing/grinding imports supply the secondary purchasing-index input; they contain out-of-scope ordinary crushers and are not treated as qualifying market revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: 2024 mineral crushing/grinding imports supply the secondary purchasing-index input; they contain out-of-scope ordinary crushers and are not treated as qualifying market revenue.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Country-level mineral machinery import observations support the Latin American purchasing basket and its explicitly modeled mining/package adjustments.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country-level mineral machinery import observations support the Latin American purchasing basket and its explicitly modeled mining/package adjustments.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: European national import observations provide the mineral-machinery component of the common purchasing index; the regional aggregate is not an extra country.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: European national import observations provide the mineral-machinery component of the common purchasing index; the regional aggregate is not an extra country.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Saudi Arabia and Turkey have separately reported mineral machinery imports, supporting national rather than bloc-wide purchasing inputs.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Saudi Arabia and Turkey have separately reported mineral machinery imports, supporting national rather than bloc-wide purchasing inputs.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: African reporter observations include major destinations outside the mandatory-country inventory, constraining a substantial noncatalog demand pool.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: African reporter observations include major destinations outside the mandatory-country inventory, constraining a substantial noncatalog demand pool.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Asia-Pacific and Central Asian reporter observations anchor the mineral-machinery component and unlisted-destination basket.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Asia-Pacific and Central Asian reporter observations anchor the mineral-machinery component and unlisted-destination basket.
5. Mach for mixing/kneading/crushing/grinding etc imports by country | 2021
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports were USD xx.xx. The model applies a qualified timing/access bridge and does not describe this as current trade.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports were USD xx.xx. The model applies a qualified timing/access bridge and does not describe this as current trade.
6. Crushing/grinding machines for earth/ stone/ore imports by country | 2021
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports of USD xx.xx provide the second historical purchasing primitive; the 2025 and 2032 allocations remain modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports of USD xx.xx provide the second historical purchasing primitive; the 2025 and 2032 allocations remain modeled.

7. World Manufacturing Production and Trade, Quarter IV 2025
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The report's mixed North American manufacturing conditions constrain a uniform high-growth assumption; output is not equated with mill purchasing.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Recent Latin American manufacturing weakness is counterevidence to immediate region-wide acceleration; forecast equipment factors remain conditional.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: European manufacturing stagnation and national divergence constrain the assumed relative equipment-purchasing path.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country-level manufacturing heterogeneity constrains the forecast; no single regional output rate is converted into machinery demand.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: African output observations include national counterexamples, supporting differentiated rather than uniform purchasing assumptions.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: China and other Asian manufacturing expansion, with national exceptions, provides directional context rather than an observed ultrafine-equipment growth rate.
8. Business Unit Grinding & Dispersing - NETZSCH
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The supplier documents local grinding-equipment production and commercial operations in Germany, the United States, Brazil, Russia, India and China. This supports considering domestic supply omitted by import statistics, but does not measure the model's correction factors.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The supplier documents local grinding-equipment production and commercial operations in Germany, the United States, Brazil, Russia, India and China. This supports considering domestic supply omitted by import statistics, but does not measure the model's correction factors.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Documented local commercial supply in China and India qualifies an import-only purchasing model; manufacturing location is not itself counted as buyer demand.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Documented local commercial supply in China and India qualifies an import-only purchasing model; manufacturing location is not itself counted as buyer demand.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Documented U.S. production and local commercial operations support an explicit, uncertain domestic-supply bridge rather than treating imports as the entire numerator.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Documented U.S. production and local commercial operations support an explicit, uncertain domestic-supply bridge rather than treating imports as the entire numerator.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Brazilian local production and commercial operations qualify reliance on imports alone, without establishing the assumed domestic sales amount.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Brazilian local production and commercial operations qualify reliance on imports alone, without establishing the assumed domestic sales amount.
9. High Energy Planetary Ball Mill - IIT Bombay
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The 2024 solicitation concerns one mill and requires two registration stages. It supports a purchaser-specific access constraint, not an award, national procurement conversion rate or forecast revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The 2024 solicitation concerns one mill and requires two registration stages. It supports a purchaser-specific access constraint, not an award, national procurement conversion rate or forecast revenue.

10. Metso receives order for grinding mills to a copper project in Africa
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The EUR xx.xx August 2024 HIGmill equipment/auxiliary/services order establishes a commercial package in Africa but identifies neither country nor annual revenue recognition. It constrains attribution and is not added to 2025 demand.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The EUR xx.xx August 2024 HIGmill equipment/auxiliary/services order establishes a commercial package in Africa but identifies neither country nor annual revenue recognition. It constrains attribution and is not added to 2025 demand.
11. Methodology - UNIDO Industrial Analytics Platform
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The methodology notes that U.S. trade coverage includes Puerto Rico, reinforcing that the national purchasing proxy must not be renormalized to the xx.xx-state inventory.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The methodology notes that U.S. trade coverage includes Puerto Rico, reinforcing that the national purchasing proxy must not be renormalized to the xx.xx-state inventory.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The methodology identifies Monaco within French trade coverage; the customs input is an imperfect national demand proxy rather than a directly observed country numerator.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The methodology identifies Monaco within French trade coverage; the customs input is an imperfect national demand proxy rather than a directly observed country numerator.

13.2. Wet Grinding

Table 152. Global Ultra Fine Grinding Mill Market Size, by Wet Grinding, by Region, 2017-2040 (USD Million)

Region	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Africa	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Asia-Pacific	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Europe	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Latin America	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Middle East	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
North America	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 153. Global Ultra Fine Grinding Mill Market Size, by Wet Grinding, by Group, 2017-2040 (USD Million)

Group	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
ASEAN	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
BRICS	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
European Union	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
G7	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
GCC	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
NATO	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx

Table 154. Global Ultra Fine Grinding Mill Market Size, by Wet Grinding, by Country, 2017-2040 (USD Million)

Country	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Australia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Brazil	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Canada	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
China	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
France	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Germany	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
India	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Italy	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Japan	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mexico	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Russia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
South Korea	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Spain	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United Kingdom	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United States	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Others	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Sources & Evidence

1. IBU-tec | Mills » Milling Technology for Dry and Wet Grinding

   · Taxonomy evidence: The operator places its installed agitator bead mills in its wet-grinding equipment inventory. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))

   · Evidence informing base-year allocation inputs; displayed values and growth are calculated: Three wet agitator-bead units are separately inventoried, supporting state-specific commercial classification without using their count as a market weight. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))

   · Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Three wet agitator-bead units are separately inventoried, supporting state-specific commercial classification without using their count as a market weight. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))

2. Mach for mixing/kneading/crushing/grinding etc imports by country | 2024

   · Evidence informing base-year allocation inputs; displayed values and growth are calculated: 2024 gross machinery imports provide the purchasing-index input: U.S. HS xx.xx imports were USD xx.xx. These are broad machinery purchases, not ultrafine mill sales.

   · Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: 2024 gross machinery imports provide the purchasing-index input: U.S. HS xx.xx imports were USD xx.xx. These are broad machinery purchases, not ultrafine mill sales.

   · Evidence informing base-year allocation inputs; displayed values and growth are calculated: Country observations include Brazil USD xx.xx and Argentina USD xx.xx under HS xx.xx supporting the regional model's purchasing inputs.

   · Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country observations include Brazil USD xx.xx and Argentina USD xx.xx under HS xx.xx supporting the regional model's purchasing inputs.

   · Evidence informing base-year allocation inputs; displayed values and growth are calculated: HS xx.xx imports include Germany USD xx.xx and France USD xx.xx; individual country records, rather than the EU aggregate, enter the allocation.

   · Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: HS xx.xx imports include Germany USD xx.xx and France USD xx.xx; individual country records, rather than the EU aggregate, enter the allocation.

   · Evidence informing base-year allocation inputs; displayed values and growth are calculated: Turkey USD xx.xx and Saudi Arabia USD xx.xx are broad machinery purchasing inputs, not observed qualifying-market numerators.

   · Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Turkey USD xx.xx and Saudi Arabia USD xx.xx are broad machinery purchasing inputs, not observed qualifying-market numerators.

   · Evidence informing base-year allocation inputs; displayed values and growth are calculated: South Africa USD xx.xx and Egypt USD xx.xx, together with additional African reporters, anchor the purchasing baskets.

   · Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: South Africa USD xx.xx and Egypt USD xx.xx, together with additional African reporters, anchor the purchasing baskets.

   · Evidence informing base-year allocation inputs; displayed values and growth are calculated: China USD xx.xx, Indonesia USD xx.xx and Japan USD xx.xx anchor the regional purchasing index before explicit local-supply adjustments.

   · Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: China USD xx.xx, Indonesia USD xx.xx and Japan USD xx.xx anchor the regional purchasing index before explicit local-supply adjustments.

3. Crushing/grinding machines for earth/ stone/ore imports by country | 2024
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: 2024 mineral crushing/grinding imports supply the secondary purchasing-index input; they contain out-of-scope ordinary crushers and are not treated as qualifying market revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: 2024 mineral crushing/grinding imports supply the secondary purchasing-index input; they contain out-of-scope ordinary crushers and are not treated as qualifying market revenue.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Country-level mineral machinery import observations support the Latin American purchasing basket and its explicitly modeled mining/package adjustments.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country-level mineral machinery import observations support the Latin American purchasing basket and its explicitly modeled mining/package adjustments.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: European national import observations provide the mineral-machinery component of the common purchasing index; the regional aggregate is not an extra country.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: European national import observations provide the mineral-machinery component of the common purchasing index; the regional aggregate is not an extra country.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Saudi Arabia and Turkey have separately reported mineral machinery imports, supporting national rather than bloc-wide purchasing inputs.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Saudi Arabia and Turkey have separately reported mineral machinery imports, supporting national rather than bloc-wide purchasing inputs.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: African reporter observations include major destinations outside the mandatory-country inventory, constraining a substantial noncatalog demand pool.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: African reporter observations include major destinations outside the mandatory-country inventory, constraining a substantial noncatalog demand pool.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Asia-Pacific and Central Asian reporter observations anchor the mineral-machinery component and unlisted-destination basket.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Asia-Pacific and Central Asian reporter observations anchor the mineral-machinery component and unlisted-destination basket.
4. Mach for mixing/kneading/crushing/grinding etc imports by country | 2021
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports were USD xx.xx. The model applies a qualified timing/access bridge and does not describe this as current trade.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports were USD xx.xx. The model applies a qualified timing/access bridge and does not describe this as current trade.
5. Crushing/grinding machines for earth/ stone/ore imports by country | 2021
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports of USD xx.xx provide the second historical purchasing primitive; the 2025 and 2032 allocations remain modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports of USD xx.xx provide the second historical purchasing primitive; the 2025 and 2032 allocations remain modeled.

6. World Manufacturing Production and Trade, Quarter IV 2025
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The report's mixed North American manufacturing conditions constrain a uniform high-growth assumption; output is not equated with mill purchasing.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Recent Latin American manufacturing weakness is counterevidence to immediate region-wide acceleration; forecast equipment factors remain conditional.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: European manufacturing stagnation and national divergence constrain the assumed relative equipment-purchasing path.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country-level manufacturing heterogeneity constrains the forecast; no single regional output rate is converted into machinery demand.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: African output observations include national counterexamples, supporting differentiated rather than uniform purchasing assumptions.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: China and other Asian manufacturing expansion, with national exceptions, provides directional context rather than an observed ultrafine-equipment growth rate.
7. Business Unit Grinding & Dispersing - NETZSCH
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The supplier documents local grinding-equipment production and commercial operations in Germany, the United States, Brazil, Russia, India and China. This supports considering domestic supply omitted by import statistics, but does not measure the model's correction factors.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The supplier documents local grinding-equipment production and commercial operations in Germany, the United States, Brazil, Russia, India and China. This supports considering domestic supply omitted by import statistics, but does not measure the model's correction factors.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Documented local commercial supply in China and India qualifies an import-only purchasing model; manufacturing location is not itself counted as buyer demand.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Documented local commercial supply in China and India qualifies an import-only purchasing model; manufacturing location is not itself counted as buyer demand.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Documented U.S. production and local commercial operations support an explicit, uncertain domestic-supply bridge rather than treating imports as the entire numerator.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Documented U.S. production and local commercial operations support an explicit, uncertain domestic-supply bridge rather than treating imports as the entire numerator.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Brazilian local production and commercial operations qualify reliance on imports alone, without establishing the assumed domestic sales amount.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Brazilian local production and commercial operations qualify reliance on imports alone, without establishing the assumed domestic sales amount.
8. High Energy Planetary Ball Mill - IIT Bombay
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The 2024 solicitation concerns one mill and requires two registration stages. It supports a purchaser-specific access constraint, not an award, national procurement conversion rate or forecast revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The 2024 solicitation concerns one mill and requires two registration stages. It supports a purchaser-specific access constraint, not an award, national procurement conversion rate or forecast revenue.

9. Metso receives order for grinding mills to a copper project in Africa
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The EUR xx.xx August 2024 HIGmill equipment/auxiliary/services order establishes a commercial package in Africa but identifies neither country nor annual revenue recognition. It constrains attribution and is not added to 2025 demand.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The EUR xx.xx August 2024 HIGmill equipment/auxiliary/services order establishes a commercial package in Africa but identifies neither country nor annual revenue recognition. It constrains attribution and is not added to 2025 demand.
10. Methodology - UNIDO Industrial Analytics Platform
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The methodology notes that U.S. trade coverage includes Puerto Rico, reinforcing that the national purchasing proxy must not be renormalized to the xx.xx-state inventory.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The methodology notes that U.S. trade coverage includes Puerto Rico, reinforcing that the national purchasing proxy must not be renormalized to the xx.xx-state inventory.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The methodology identifies Monaco within French trade coverage; the customs input is an imperfect national demand proxy rather than a directly observed country numerator.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The methodology identifies Monaco within French trade coverage; the customs input is an imperfect national demand proxy rather than a directly observed country numerator.
11. Wet Milling and Dispersing Device - Star Burst - Sugino Corp.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The wet-jet offering supports wet-state classification within the joint value model, not the total Wet Grinding share. ([suginocorp.com](https://www.suginocorp.com/star-burst/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The wet-jet offering supports wet-state classification within the joint value model, not the total Wet Grinding share. ([suginocorp.com](https://www.suginocorp.com/star-burst/))

13.3. Wet and Dry Grinding

Table 155. Global Ultra Fine Grinding Mill Market Size, by Wet and Dry Grinding, by Region, 2017-2040 (USD Million)

Region	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Africa	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Asia-Pacific	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Europe	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Latin America	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Middle East	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
North America	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 156. Global Ultra Fine Grinding Mill Market Size, by Wet and Dry Grinding, by Group, 2017-2040 (USD Million)

Group	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
ASEAN	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
BRICS	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
European Union	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
G7	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
GCC	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
NATO	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx

Table 157. Global Ultra Fine Grinding Mill Market Size, by Wet and Dry Grinding, by Country, 2017-2040 (USD Million)

Country	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Australia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Brazil	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Canada	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
China	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
France	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Germany	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
India	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Italy	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Japan	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mexico	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Russia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
South Korea	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Spain	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United Kingdom	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United States	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Others	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Sources & Evidence

1. Comminution - NTNU

· Taxonomy evidence: The inventory identifies wet/dry capability for its stirred attritor and planetary mill, independently corroborating dual-state equipment terminology. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: NTNU separately records wet/dry capability for stirred and planetary equipment; the inventory is not a representative value-share dataset. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: NTNU separately records wet/dry capability for stirred and planetary equipment; the inventory is not a representative value-share dataset. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))

2. Supply of High energy planetary ball mill - IIT(BHU)/ME/PS/2024-25/TD/003

· Taxonomy evidence: The requested mill must include both dry- and wet-grinding capability within the specified system, supporting an explicit dual-state category rather than treating separate supplier product lines as dual-state equipment. ([iitbhu.ac.in](https://www.iitbhu.ac.in/contents/institute/2024/tender/tender_me_ps_003.pdf))

3. Mach for mixing/kneading/crushing/grinding etc imports by country | 2024

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: 2024 gross machinery imports provide the purchasing-index input: U.S. HS xx.xx imports were USD xx.xx. These are broad machinery purchases, not ultrafine mill sales.

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: 2024 gross machinery imports provide the purchasing-index input: U.S. HS xx.xx imports were USD xx.xx. These are broad machinery purchases, not ultrafine mill sales.

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Country observations include Brazil USD xx.xx and Argentina USD xx.xx under HS xx.xx supporting the regional model's purchasing inputs.

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country observations include Brazil USD xx.xx and Argentina USD xx.xx under HS xx.xx supporting the regional model's purchasing inputs.

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: HS xx.xx imports include Germany USD xx.xx and France USD xx.xx; individual country records, rather than the EU aggregate, enter the allocation.

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: HS xx.xx imports include Germany USD xx.xx and France USD xx.xx; individual country records, rather than the EU aggregate, enter the allocation.

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Turkey USD xx.xx and Saudi Arabia USD xx.xx are broad machinery purchasing inputs, not observed qualifying-market numerators.

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Turkey USD xx.xx and Saudi Arabia USD xx.xx are broad machinery purchasing inputs, not observed qualifying-market numerators.

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: South Africa USD xx.xx and Egypt USD xx.xx, together with additional African reporters, anchor the purchasing baskets.

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: South Africa USD xx.xx and Egypt USD xx.xx, together with additional African reporters, anchor the purchasing baskets.

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: China USD xx.xx, Indonesia USD xx.xx and Japan USD xx.xx anchor the regional purchasing index before explicit local-supply adjustments.

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: China USD xx.xx, Indonesia USD xx.xx and Japan USD xx.xx anchor the regional purchasing index before explicit local-supply adjustments.

4. Crushing/grinding machines for earth/ stone/ore imports by country | 2024
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: 2024 mineral crushing/grinding imports supply the secondary purchasing-index input; they contain out-of-scope ordinary crushers and are not treated as qualifying market revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: 2024 mineral crushing/grinding imports supply the secondary purchasing-index input; they contain out-of-scope ordinary crushers and are not treated as qualifying market revenue.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Country-level mineral machinery import observations support the Latin American purchasing basket and its explicitly modeled mining/package adjustments.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country-level mineral machinery import observations support the Latin American purchasing basket and its explicitly modeled mining/package adjustments.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: European national import observations provide the mineral-machinery component of the common purchasing index; the regional aggregate is not an extra country.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: European national import observations provide the mineral-machinery component of the common purchasing index; the regional aggregate is not an extra country.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Saudi Arabia and Turkey have separately reported mineral machinery imports, supporting national rather than bloc-wide purchasing inputs.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Saudi Arabia and Turkey have separately reported mineral machinery imports, supporting national rather than bloc-wide purchasing inputs.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: African reporter observations include major destinations outside the mandatory-country inventory, constraining a substantial noncatalog demand pool.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: African reporter observations include major destinations outside the mandatory-country inventory, constraining a substantial noncatalog demand pool.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Asia-Pacific and Central Asian reporter observations anchor the mineral-machinery component and unlisted-destination basket.
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5. Mach for mixing/kneading/crushing/grinding etc imports by country | 2021
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports were USD xx.xx. The model applies a qualified timing/access bridge and does not describe this as current trade.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports were USD xx.xx. The model applies a qualified timing/access bridge and does not describe this as current trade.
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   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The report's mixed North American manufacturing conditions constrain a uniform high-growth assumption; output is not equated with mill purchasing.
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8. Business Unit Grinding & Dispersing - NETZSCH
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The supplier documents local grinding-equipment production and commercial operations in Germany, the United States, Brazil, Russia, India and China. This supports considering domestic supply omitted by import statistics, but does not measure the model's correction factors.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The supplier documents local grinding-equipment production and commercial operations in Germany, the United States, Brazil, Russia, India and China. This supports considering domestic supply omitted by import statistics, but does not measure the model's correction factors.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Documented local commercial supply in China and India qualifies an import-only purchasing model; manufacturing location is not itself counted as buyer demand.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Documented local commercial supply in China and India qualifies an import-only purchasing model; manufacturing location is not itself counted as buyer demand.
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   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Documented U.S. production and local commercial operations support an explicit, uncertain domestic-supply bridge rather than treating imports as the entire numerator.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Brazilian local production and commercial operations qualify reliance on imports alone, without establishing the assumed domestic sales amount.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Brazilian local production and commercial operations qualify reliance on imports alone, without establishing the assumed domestic sales amount.
9. High Energy Planetary Ball Mill - IIT Bombay
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The 2024 solicitation concerns one mill and requires two registration stages. It supports a purchaser-specific access constraint, not an award, national procurement conversion rate or forecast revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The 2024 solicitation concerns one mill and requires two registration stages. It supports a purchaser-specific access constraint, not an award, national procurement conversion rate or forecast revenue.

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    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The EUR xx.xx August 2024 HIGmill equipment/auxiliary/services order establishes a commercial package in Africa but identifies neither country nor annual revenue recognition. It constrains attribution and is not added to 2025 demand.
11. Methodology - UNIDO Industrial Analytics Platform
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The methodology notes that U.S. trade coverage includes Puerto Rico, reinforcing that the national purchasing proxy must not be renormalized to the xx.xx-state inventory.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The methodology notes that U.S. trade coverage includes Puerto Rico, reinforcing that the national purchasing proxy must not be renormalized to the xx.xx-state inventory.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The methodology identifies Monaco within French trade coverage; the customs input is an imperfect national demand proxy rather than a directly observed country numerator.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The methodology identifies Monaco within French trade coverage; the customs input is an imperfect national demand proxy rather than a directly observed country numerator.
12. Planetary Ball Mill PM 100 - RETSCH
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The product page advertises both dry and wet capability. Actual dual-state purchase inclusion remains an explicit model assumption. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The product page advertises both dry and wet capability. Actual dual-state purchase inclusion remains an explicit model assumption. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))
13. SWECO Vibratory Grinding and Particle Size Reduction Equipment
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Named wet/dry models establish dual-state availability; they do not establish the exact supplied configuration or a market-wide value share. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Named wet/dry models establish dual-state availability; they do not establish the exact supplied configuration or a market-wide value share. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))
14. Dry Batch Or Continuous Laboratory Mills - Union Process
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The same named offering advertises wet/dry capability, supporting a dual-state category premise rather than an observed adoption percentage. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The same named offering advertises wet/dry capability, supporting a dual-state category premise rather than an observed adoption percentage. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))

14. Ultra Fine Grinding Mill Market, by Operating Mode

Batch and Continuous are purchasing attributes independent of deployment scale and processing state. Hosokawa Alpine lists batch-mode or continuous-mode designs for Picojet, while NTNU identifies a continuous laboratory jet-mill rig and batch planetary equipment. ■■■■■■■■■■ ■■■■■■■■■ ■■■■■■ ■■■ ■■ ■■■■■■■ ■■ ■■■■■■■■■■ ■■■■ ■■■■■■■■■■ ■■■■■■■■■■■ ■■■ ■■■■■ ■■ ■ ■■■■■■■■■■ ■■■■■■■■■■ ■■ ■■■■■■■■■ ■■■■■■■■■■ ■■■■■■ ■■■■■■ ■■■■■■■■ ■■■ ■■■■■■■■ ■■■■■■■ ■■■■ ■■■ ■■■ ■■■■■■■■■■■ ■■■■■ ■■■■■■ ■■■■ ■■■■■ ■■■■■■■■■■ ■■■■■ ■■■ ■■■■■■■■ ■■■■■■ ■■ ■■■■■■■■■■ ■■■■■■

Batch and Continuous also retains a distinct role for a configurable offering, rather than merely describing a supplier with two separate product lines. ■■■■■ ■■■■■■■ ■■■■■■■■■■ ■■■ ■■■■■ ■■■■■■■■■■ ■■■■■■■■ ■■■ ■■■■■■■■■■ ■■ ■■■■■ ■■■■■■■ ■■■ ■■■ ■■ ■■■ ■■■■■■■■■■ ■■■■■ ■■■■■■■■■■■ ■ ■■■■■ ■■■■■■■■■■ ■■■■■■■■■ ■■■ ■■■ ■■■■■■■■ ■■■■■■■■ ■■■■■■■■■■■■■ ■■ ■ ■■■■■■■■■ ■■■■■■■■ ■■■■■■■■■ ■ ■■■■■■■■■ ■■■■■■■ ■■■■ ■■■■■ ■■■■■■ ■■■■■■■■■■ ■■■■■ ■■■■ ■■■ ■■■■■■■■■ ■■ ■■■ ■■■■ ■■■■■■ ■■■■■■ ■■■■ ■■■ ■■■■■■■■ ■■■■■■■■■■■■ ■■■ ■■■■■■■■ ■■■■■■■■■■■■ One platform may simplify supplier coordination but makes both requirements dependent on the same asset; separately specified mode-specific equipment remains an alternative where independent availability matters.

Figure 22. Global Ultra Fine Grinding Mill Market Size, by Operating Mode, 2025 (%)

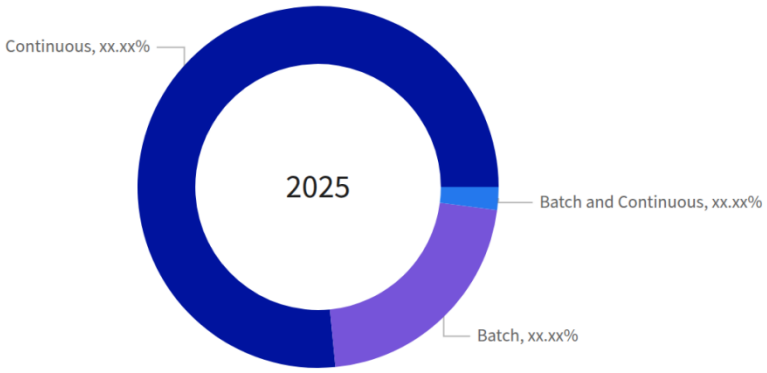


Figure 23. Global Ultra Fine Grinding Mill Market, by Operating Mode, 2032 (USD Million)

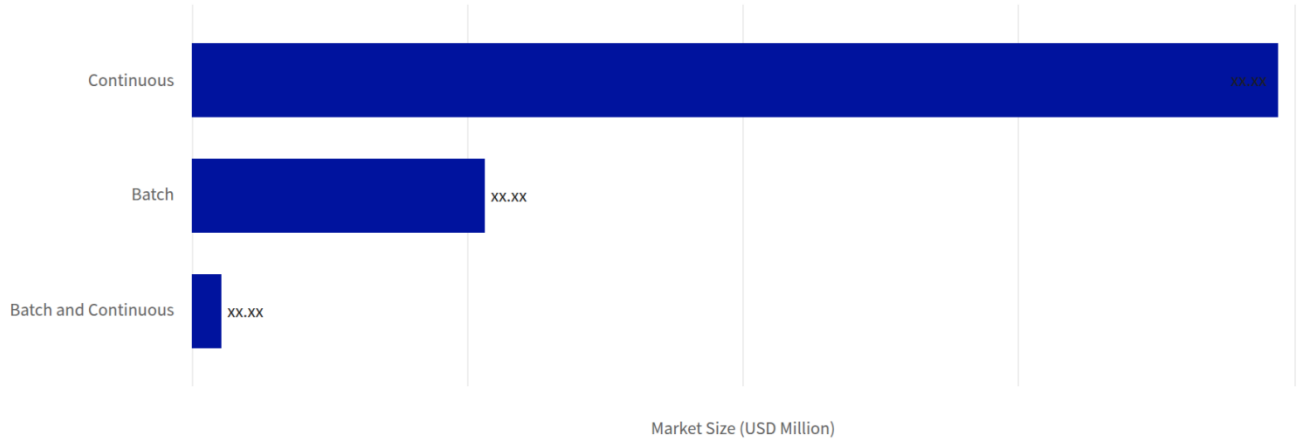


Table 158. Global Ultra Fine Grinding Mill Market, by Operating Mode growth contribution, 2025-2032

Category	2025 value (USD Million)	2032 value (USD Million)	Added value (USD Million)	2025 share (%)	2032 share (%)	Change (pp)	Growth share (%)	CAGR (%)
Batch	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Batch and Continuous	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Continuous	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Scope total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 159. Global Ultra Fine Grinding Mill Market Size, by Operating Mode, 2017-2040 (USD Million)

Operating Mode	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Batch	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Batch and Continuous	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Continuous	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Sources & Evidence

1. Comminution - NTNU

   · NTNU separately records state, mode, and scale; its laboratory jet-mill rig is continuous and its planetary mill is batch. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))

   · Taxonomy evidence: The inventory distinguishes batch from continuous operation independently of processing state and scale. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))

   · Evidence informing base-year allocation inputs; displayed values and growth are calculated: The planetary equipment is recorded as batch, supporting a laboratory batch context without assuming all laboratories are batch-only. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))

   · Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The planetary equipment is recorded as batch, supporting a laboratory batch context without assuming all laboratories are batch-only. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))

   · Evidence informing base-year allocation inputs; displayed values and growth are calculated: The laboratory jet rig is recorded as continuous, independently challenging equivalence between continuous mode and industrial scale. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))

   · Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The laboratory jet rig is recorded as continuous, independently challenging equivalence between continuous mode and industrial scale. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))

2. Picojet laboratory jet mill

   · Hosokawa Alpine lists batch-mode or continuous-mode designs for Picojet, establishing offered alternatives rather than both modes in a customer's purchase. ([hosokawa-alpine.com](https://www.hosokawa-alpine.com/powder-particle-processing/technologies/special-solutions/picoline/picojet/))

   · Taxonomy evidence: The commercial laboratory jet-mill page identifies dry ultrafine grinding and offers batch or continuous designs. It corroborates both mode categories but does not establish that both are included in one purchased configuration. ([hosokawa-alpine.com](https://www.hosokawa-alpine.com/powder-particle-processing/technologies/special-solutions/picoline/picojet/))

3. Dry Batch or Continuous Laboratory Mills - Union Process

   · Union Process advertises SD-xx.xx for wet or dry and continuous or batch service. The commercial page also describes equipment options, so full quoted inclusions remain configuration-specific. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))

   · Evidence informing base-year allocation inputs; displayed values and growth are calculated: Union Process identifies SD-xx.xx as one laboratory offering for both batch and continuous service. Configuration-specific purchase inclusion and revenue are undisclosed. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))

   · Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Union Process identifies SD-xx.xx as one laboratory offering for both batch and continuous service. Configuration-specific purchase inclusion and revenue are undisclosed. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))

4. Comminution Testing | Core Resources

   · Taxonomy evidence: The operator distinguishes batch and continuous milling availability while separately describing stirred-media ultrafine capability. These are separable commercial attributes; a specific dual-mode purchase remains only partially supported. ([coreresources.com.au](https://coreresources.com.au/services/metallurgical-services/laboratory-testing/comminution-testing/))

14.1. Continuous

Table 160. Global Ultra Fine Grinding Mill Market Size, by Continuous, by Region, 2017-2040 (USD Million)

Region	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Africa	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Asia-Pacific	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Europe	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Latin America	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Middle East	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
North America	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 161. Global Ultra Fine Grinding Mill Market Size, by Continuous, by Group, 2017-2040 (USD Million)

Group	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
ASEAN	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
BRICS	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
European Union	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
G7	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
GCC	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
NATO	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx

Table 162. Global Ultra Fine Grinding Mill Market Size, by Continuous, by Country, 2017-2040 (USD Million)

Country	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Australia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Brazil	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Canada	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
China	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
France	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Germany	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
India	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Italy	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Japan	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mexico	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Russia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
South Korea	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Spain	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United Kingdom	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United States	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Others	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Sources & Evidence

1. Comminution - NTNU
   - Taxonomy evidence: The laboratory jet-mill/classifier rig is identified as continuous. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The laboratory jet rig is recorded as continuous, independently challenging equivalence between continuous mode and industrial scale. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The laboratory jet rig is recorded as continuous, independently challenging equivalence between continuous mode and industrial scale. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
2. Picojet laboratory jet mill | Hosokawa Alpine
   - Taxonomy evidence: Continuous operation is an expressly offered design option for the same commercial product family. ([hosokawa-alpine.com](https://www.hosokawa-alpine.com/powder-particle-processing/technologies/special-solutions/picoline/picojet/))

3. Mach for mixing/kneading/crushing/grinding etc imports by country | 2024
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: 2024 gross machinery imports provide the purchasing-index input: U.S. HS xx.xx imports were USD xx.xx. These are broad machinery purchases, not ultrafine mill sales.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: 2024 gross machinery imports provide the purchasing-index input: U.S. HS xx.xx imports were USD xx.xx. These are broad machinery purchases, not ultrafine mill sales.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Country observations include Brazil USD xx.xx and Argentina USD xx.xx under HS xx.xx supporting the regional model's purchasing inputs.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country observations include Brazil USD xx.xx and Argentina USD xx.xx under HS xx.xx supporting the regional model's purchasing inputs.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: HS xx.xx imports include Germany USD xx.xx and France USD xx.xx; individual country records, rather than the EU aggregate, enter the allocation.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: HS xx.xx imports include Germany USD xx.xx and France USD xx.xx; individual country records, rather than the EU aggregate, enter the allocation.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Turkey USD xx.xx and Saudi Arabia USD xx.xx are broad machinery purchasing inputs, not observed qualifying-market numerators.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Turkey USD xx.xx and Saudi Arabia USD xx.xx are broad machinery purchasing inputs, not observed qualifying-market numerators.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: South Africa USD xx.xx and Egypt USD xx.xx, together with additional African reporters, anchor the purchasing baskets.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: South Africa USD xx.xx and Egypt USD xx.xx, together with additional African reporters, anchor the purchasing baskets.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: China USD xx.xx, Indonesia USD xx.xx and Japan USD xx.xx anchor the regional purchasing index before explicit local-supply adjustments.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: China USD xx.xx, Indonesia USD xx.xx and Japan USD xx.xx anchor the regional purchasing index before explicit local-supply adjustments.

4. Crushing/grinding machines for earth/ stone/ore imports by country | 2024
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: 2024 mineral crushing/grinding imports supply the secondary purchasing-index input; they contain out-of-scope ordinary crushers and are not treated as qualifying market revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: 2024 mineral crushing/grinding imports supply the secondary purchasing-index input; they contain out-of-scope ordinary crushers and are not treated as qualifying market revenue.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Country-level mineral machinery import observations support the Latin American purchasing basket and its explicitly modeled mining/package adjustments.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country-level mineral machinery import observations support the Latin American purchasing basket and its explicitly modeled mining/package adjustments.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: European national import observations provide the mineral-machinery component of the common purchasing index; the regional aggregate is not an extra country.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: European national import observations provide the mineral-machinery component of the common purchasing index; the regional aggregate is not an extra country.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Saudi Arabia and Turkey have separately reported mineral machinery imports, supporting national rather than bloc-wide purchasing inputs.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Saudi Arabia and Turkey have separately reported mineral machinery imports, supporting national rather than bloc-wide purchasing inputs.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: African reporter observations include major destinations outside the mandatory-country inventory, constraining a substantial noncatalog demand pool.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: African reporter observations include major destinations outside the mandatory-country inventory, constraining a substantial noncatalog demand pool.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Asia-Pacific and Central Asian reporter observations anchor the mineral-machinery component and unlisted-destination basket.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Asia-Pacific and Central Asian reporter observations anchor the mineral-machinery component and unlisted-destination basket.
5. Mach for mixing/kneading/crushing/grinding etc imports by country | 2021
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports were USD xx.xx. The model applies a qualified timing/access bridge and does not describe this as current trade.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports were USD xx.xx. The model applies a qualified timing/access bridge and does not describe this as current trade.
6. Crushing/grinding machines for earth/ stone/ore imports by country | 2021
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports of USD xx.xx provide the second historical purchasing primitive; the 2025 and 2032 allocations remain modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports of USD xx.xx provide the second historical purchasing primitive; the 2025 and 2032 allocations remain modeled.

7. World Manufacturing Production and Trade, Quarter IV 2025
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The report's mixed North American manufacturing conditions constrain a uniform high-growth assumption; output is not equated with mill purchasing.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Recent Latin American manufacturing weakness is counterevidence to immediate region-wide acceleration; forecast equipment factors remain conditional.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: European manufacturing stagnation and national divergence constrain the assumed relative equipment-purchasing path.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country-level manufacturing heterogeneity constrains the forecast; no single regional output rate is converted into machinery demand.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: African output observations include national counterexamples, supporting differentiated rather than uniform purchasing assumptions.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: China and other Asian manufacturing expansion, with national exceptions, provides directional context rather than an observed ultrafine-equipment growth rate.
8. Business Unit Grinding & Dispersing - NETZSCH
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The supplier documents local grinding-equipment production and commercial operations in Germany, the United States, Brazil, Russia, India and China. This supports considering domestic supply omitted by import statistics, but does not measure the model's correction factors.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The supplier documents local grinding-equipment production and commercial operations in Germany, the United States, Brazil, Russia, India and China. This supports considering domestic supply omitted by import statistics, but does not measure the model's correction factors.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Documented local commercial supply in China and India qualifies an import-only purchasing model; manufacturing location is not itself counted as buyer demand.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Documented local commercial supply in China and India qualifies an import-only purchasing model; manufacturing location is not itself counted as buyer demand.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Documented U.S. production and local commercial operations support an explicit, uncertain domestic-supply bridge rather than treating imports as the entire numerator.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Documented U.S. production and local commercial operations support an explicit, uncertain domestic-supply bridge rather than treating imports as the entire numerator.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Brazilian local production and commercial operations qualify reliance on imports alone, without establishing the assumed domestic sales amount.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Brazilian local production and commercial operations qualify reliance on imports alone, without establishing the assumed domestic sales amount.
9. High Energy Planetary Ball Mill - IIT Bombay
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The 2024 solicitation concerns one mill and requires two registration stages. It supports a purchaser-specific access constraint, not an award, national procurement conversion rate or forecast revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The 2024 solicitation concerns one mill and requires two registration stages. It supports a purchaser-specific access constraint, not an award, national procurement conversion rate or forecast revenue.

10. Metso receives order for grinding mills to a copper project in Africa
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The EUR xx.xx August 2024 HIGmill equipment/auxiliary/services order establishes a commercial package in Africa but identifies neither country nor annual revenue recognition. It constrains attribution and is not added to 2025 demand.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The EUR xx.xx August 2024 HIGmill equipment/auxiliary/services order establishes a commercial package in Africa but identifies neither country nor annual revenue recognition. It constrains attribution and is not added to 2025 demand.
11. Methodology - UNIDO Industrial Analytics Platform
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The methodology notes that U.S. trade coverage includes Puerto Rico, reinforcing that the national purchasing proxy must not be renormalized to the xx.xx-state inventory.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The methodology notes that U.S. trade coverage includes Puerto Rico, reinforcing that the national purchasing proxy must not be renormalized to the xx.xx-state inventory.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The methodology identifies Monaco within French trade coverage; the customs input is an imperfect national demand proxy rather than a directly observed country numerator.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The methodology identifies Monaco within French trade coverage; the customs input is an imperfect national demand proxy rather than a directly observed country numerator.

14.2. Batch

Table 163. Global Ultra Fine Grinding Mill Market Size, by Batch, by Region, 2017-2040 (USD Million)

Region	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Africa	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Asia-Pacific	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Europe	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Latin America	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Middle East	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
North America	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 164. Global Ultra Fine Grinding Mill Market Size, by Batch, by Group, 2017-2040 (USD Million)

Group	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
ASEAN	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
BRICS	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
European Union	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
G7	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
GCC	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
NATO	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx

Table 165. Global Ultra Fine Grinding Mill Market Size, by Batch, by Country, 2017-2040 (USD Million)

Country	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Australia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Brazil	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Canada	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
China	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
France	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Germany	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
India	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Italy	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Japan	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mexico	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Russia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
South Korea	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Spain	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United Kingdom	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United States	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Others	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Sources & Evidence

1. Comminution - NTNU

   · Taxonomy evidence: The planetary mill and stirred attritor have batch operation identified in the institutional inventory. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))

   · Evidence informing base-year allocation inputs; displayed values and growth are calculated: The planetary equipment is recorded as batch, supporting a laboratory batch context without assuming all laboratories are batch-only. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))

   · Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The planetary equipment is recorded as batch, supporting a laboratory batch context without assuming all laboratories are batch-only. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))

2. Picojet laboratory jet mill | Hosokawa Alpine

   · Taxonomy evidence: Batch operation is an expressly offered design option for the named ultrafine laboratory jet mill.
   ([hosokawa-alpine.com](https://www.hosokawa-alpine.com/powder-particle-processing/technologies/special-solutions/picoline/picojet/))

3. Mach for mixing/kneading/crushing/grinding etc imports by country | 2024

   · Evidence informing base-year allocation inputs; displayed values and growth are calculated: 2024 gross machinery imports provide the purchasing-index input: U.S. HS xx.xx imports were USD xx.xx. These are broad machinery purchases, not ultrafine mill sales.

   · Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: 2024 gross machinery imports provide the purchasing-index input: U.S. HS xx.xx imports were USD xx.xx. These are broad machinery purchases, not ultrafine mill sales.

   · Evidence informing base-year allocation inputs; displayed values and growth are calculated: Country observations include Brazil USD xx.xx and Argentina USD xx.xx under HS xx.xx supporting the regional model's purchasing inputs.

   · Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country observations include Brazil USD xx.xx and Argentina USD xx.xx under HS xx.xx supporting the regional model's purchasing inputs.

   · Evidence informing base-year allocation inputs; displayed values and growth are calculated: HS xx.xx imports include Germany USD xx.xx and France USD xx.xx; individual country records, rather than the EU aggregate, enter the allocation.

   · Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: HS xx.xx imports include Germany USD xx.xx and France USD xx.xx; individual country records, rather than the EU aggregate, enter the allocation.

   · Evidence informing base-year allocation inputs; displayed values and growth are calculated: Turkey USD xx.xx and Saudi Arabia USD xx.xx are broad machinery purchasing inputs, not observed qualifying-market numerators.

   · Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Turkey USD xx.xx and Saudi Arabia USD xx.xx are broad machinery purchasing inputs, not observed qualifying-market numerators.

   · Evidence informing base-year allocation inputs; displayed values and growth are calculated: South Africa USD xx.xx and Egypt USD xx.xx, together with additional African reporters, anchor the purchasing baskets.

   · Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: South Africa USD xx.xx and Egypt USD xx.xx, together with additional African reporters, anchor the purchasing baskets.

   · Evidence informing base-year allocation inputs; displayed values and growth are calculated: China USD xx.xx, Indonesia USD xx.xx and Japan USD xx.xx anchor the regional purchasing index before explicit local-supply adjustments.

   · Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: China USD xx.xx, Indonesia USD xx.xx and Japan USD xx.xx anchor the regional purchasing index before explicit local-supply adjustments.

4. Crushing/grinding machines for earth/ stone/ore imports by country | 2024
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: 2024 mineral crushing/grinding imports supply the secondary purchasing-index input; they contain out-of-scope ordinary crushers and are not treated as qualifying market revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: 2024 mineral crushing/grinding imports supply the secondary purchasing-index input; they contain out-of-scope ordinary crushers and are not treated as qualifying market revenue.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Country-level mineral machinery import observations support the Latin American purchasing basket and its explicitly modeled mining/package adjustments.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country-level mineral machinery import observations support the Latin American purchasing basket and its explicitly modeled mining/package adjustments.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: European national import observations provide the mineral-machinery component of the common purchasing index; the regional aggregate is not an extra country.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: European national import observations provide the mineral-machinery component of the common purchasing index; the regional aggregate is not an extra country.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Saudi Arabia and Turkey have separately reported mineral machinery imports, supporting national rather than bloc-wide purchasing inputs.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Saudi Arabia and Turkey have separately reported mineral machinery imports, supporting national rather than bloc-wide purchasing inputs.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: African reporter observations include major destinations outside the mandatory-country inventory, constraining a substantial noncatalog demand pool.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: African reporter observations include major destinations outside the mandatory-country inventory, constraining a substantial noncatalog demand pool.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Asia-Pacific and Central Asian reporter observations anchor the mineral-machinery component and unlisted-destination basket.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Asia-Pacific and Central Asian reporter observations anchor the mineral-machinery component and unlisted-destination basket.
5. Mach for mixing/kneading/crushing/grinding etc imports by country | 2021
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports were USD xx.xx. The model applies a qualified timing/access bridge and does not describe this as current trade.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports were USD xx.xx. The model applies a qualified timing/access bridge and does not describe this as current trade.
6. Crushing/grinding machines for earth/ stone/ore imports by country | 2021
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports of USD xx.xx provide the second historical purchasing primitive; the 2025 and 2032 allocations remain modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports of USD xx.xx provide the second historical purchasing primitive; the 2025 and 2032 allocations remain modeled.

7. World Manufacturing Production and Trade, Quarter IV 2025
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The report's mixed North American manufacturing conditions constrain a uniform high-growth assumption; output is not equated with mill purchasing.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Recent Latin American manufacturing weakness is counterevidence to immediate region-wide acceleration; forecast equipment factors remain conditional.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: European manufacturing stagnation and national divergence constrain the assumed relative equipment-purchasing path.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country-level manufacturing heterogeneity constrains the forecast; no single regional output rate is converted into machinery demand.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: African output observations include national counterexamples, supporting differentiated rather than uniform purchasing assumptions.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: China and other Asian manufacturing expansion, with national exceptions, provides directional context rather than an observed ultrafine-equipment growth rate.
8. Business Unit Grinding & Dispersing - NETZSCH
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The supplier documents local grinding-equipment production and commercial operations in Germany, the United States, Brazil, Russia, India and China. This supports considering domestic supply omitted by import statistics, but does not measure the model's correction factors.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The supplier documents local grinding-equipment production and commercial operations in Germany, the United States, Brazil, Russia, India and China. This supports considering domestic supply omitted by import statistics, but does not measure the model's correction factors.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Documented local commercial supply in China and India qualifies an import-only purchasing model; manufacturing location is not itself counted as buyer demand.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Documented local commercial supply in China and India qualifies an import-only purchasing model; manufacturing location is not itself counted as buyer demand.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Documented U.S. production and local commercial operations support an explicit, uncertain domestic-supply bridge rather than treating imports as the entire numerator.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Documented U.S. production and local commercial operations support an explicit, uncertain domestic-supply bridge rather than treating imports as the entire numerator.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Brazilian local production and commercial operations qualify reliance on imports alone, without establishing the assumed domestic sales amount.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Brazilian local production and commercial operations qualify reliance on imports alone, without establishing the assumed domestic sales amount.
9. High Energy Planetary Ball Mill - IIT Bombay
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The 2024 solicitation concerns one mill and requires two registration stages. It supports a purchaser-specific access constraint, not an award, national procurement conversion rate or forecast revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The 2024 solicitation concerns one mill and requires two registration stages. It supports a purchaser-specific access constraint, not an award, national procurement conversion rate or forecast revenue.

10. Metso receives order for grinding mills to a copper project in Africa
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The EUR xx.xx August 2024 HIGmill equipment/auxiliary/services order establishes a commercial package in Africa but identifies neither country nor annual revenue recognition. It constrains attribution and is not added to 2025 demand.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The EUR xx.xx August 2024 HIGmill equipment/auxiliary/services order establishes a commercial package in Africa but identifies neither country nor annual revenue recognition. It constrains attribution and is not added to 2025 demand.
11. Methodology - UNIDO Industrial Analytics Platform
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The methodology notes that U.S. trade coverage includes Puerto Rico, reinforcing that the national purchasing proxy must not be renormalized to the xx.xx-state inventory.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The methodology notes that U.S. trade coverage includes Puerto Rico, reinforcing that the national purchasing proxy must not be renormalized to the xx.xx-state inventory.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The methodology identifies Monaco within French trade coverage; the customs input is an imperfect national demand proxy rather than a directly observed country numerator.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The methodology identifies Monaco within French trade coverage; the customs input is an imperfect national demand proxy rather than a directly observed country numerator.

14.3. Batch and Continuous

Table 166. Global Ultra Fine Grinding Mill Market Size, by Batch and Continuous, by Region, 2017-2040 (USD Million)

Region	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Africa	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Asia-Pacific	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Europe	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Latin America	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Middle East	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
North America	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 167. Global Ultra Fine Grinding Mill Market Size, by Batch and Continuous, by Group, 2017-2040 (USD Million)

Group	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
ASEAN	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
BRICS	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
European Union	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
G7	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
GCC	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
NATO	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx

Table 168. Global Ultra Fine Grinding Mill Market Size, by Batch and Continuous, by Country, 2017-2040 (USD Million)

Country	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Australia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Brazil	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Canada	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
China	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
France	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Germany	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
India	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Italy	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Japan	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mexico	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Russia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
South Korea	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Spain	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United Kingdom	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United States	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Others	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Sources & Evidence

1. Comminution - NTNU

   · Taxonomy evidence: Continuous operation appears parenthetically alongside batch for the attritor. That qualified notation does not establish both modes in a current commercial purchase. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))

2. Comminution Testing | Core Resources
   - Taxonomy evidence: The operator lists one named Metprotech vertical stirred-bead inventory item as continuous or batch. This strengthens dual-mode category recognition, but the page does not disclose an order or the complete supplied configuration. ([coreresources.com.au](https://coreresources.com.au/services/metallurgical-services/laboratory-testing/comminution-testing/))
3. Mach for mixing/kneading/crushing/grinding etc imports by country | 2024
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: 2024 gross machinery imports provide the purchasing-index input: U.S. HS xx.xx imports were USD xx.xx. These are broad machinery purchases, not ultrafine mill sales.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: 2024 gross machinery imports provide the purchasing-index input: U.S. HS xx.xx imports were USD xx.xx. These are broad machinery purchases, not ultrafine mill sales.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Country observations include Brazil USD xx.xx and Argentina USD xx.xx under HS xx.xx supporting the regional model's purchasing inputs.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country observations include Brazil USD xx.xx and Argentina USD xx.xx under HS xx.xx supporting the regional model's purchasing inputs.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: HS xx.xx imports include Germany USD xx.xx and France USD xx.xx; individual country records, rather than the EU aggregate, enter the allocation.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: HS xx.xx imports include Germany USD xx.xx and France USD xx.xx; individual country records, rather than the EU aggregate, enter the allocation.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Turkey USD xx.xx and Saudi Arabia USD xx.xx are broad machinery purchasing inputs, not observed qualifying-market numerators.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Turkey USD xx.xx and Saudi Arabia USD xx.xx are broad machinery purchasing inputs, not observed qualifying-market numerators.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: South Africa USD xx.xx and Egypt USD xx.xx, together with additional African reporters, anchor the purchasing baskets.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: South Africa USD xx.xx and Egypt USD xx.xx, together with additional African reporters, anchor the purchasing baskets.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: China USD xx.xx, Indonesia USD xx.xx and Japan USD xx.xx anchor the regional purchasing index before explicit local-supply adjustments.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: China USD xx.xx, Indonesia USD xx.xx and Japan USD xx.xx anchor the regional purchasing index before explicit local-supply adjustments.

4. Crushing/grinding machines for earth/ stone/ore imports by country | 2024
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: 2024 mineral crushing/grinding imports supply the secondary purchasing-index input; they contain out-of-scope ordinary crushers and are not treated as qualifying market revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: 2024 mineral crushing/grinding imports supply the secondary purchasing-index input; they contain out-of-scope ordinary crushers and are not treated as qualifying market revenue.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Country-level mineral machinery import observations support the Latin American purchasing basket and its explicitly modeled mining/package adjustments.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country-level mineral machinery import observations support the Latin American purchasing basket and its explicitly modeled mining/package adjustments.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: European national import observations provide the mineral-machinery component of the common purchasing index; the regional aggregate is not an extra country.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: European national import observations provide the mineral-machinery component of the common purchasing index; the regional aggregate is not an extra country.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Saudi Arabia and Turkey have separately reported mineral machinery imports, supporting national rather than bloc-wide purchasing inputs.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Saudi Arabia and Turkey have separately reported mineral machinery imports, supporting national rather than bloc-wide purchasing inputs.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: African reporter observations include major destinations outside the mandatory-country inventory, constraining a substantial noncatalog demand pool.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: African reporter observations include major destinations outside the mandatory-country inventory, constraining a substantial noncatalog demand pool.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Asia-Pacific and Central Asian reporter observations anchor the mineral-machinery component and unlisted-destination basket.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Asia-Pacific and Central Asian reporter observations anchor the mineral-machinery component and unlisted-destination basket.
5. Mach for mixing/kneading/crushing/grinding etc imports by country | 2021
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports were USD xx.xx. The model applies a qualified timing/access bridge and does not describe this as current trade.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports were USD xx.xx. The model applies a qualified timing/access bridge and does not describe this as current trade.
6. Crushing/grinding machines for earth/ stone/ore imports by country | 2021
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports of USD xx.xx provide the second historical purchasing primitive; the 2025 and 2032 allocations remain modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports of USD xx.xx provide the second historical purchasing primitive; the 2025 and 2032 allocations remain modeled.

7. World Manufacturing Production and Trade, Quarter IV 2025
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The report's mixed North American manufacturing conditions constrain a uniform high-growth assumption; output is not equated with mill purchasing.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Recent Latin American manufacturing weakness is counterevidence to immediate region-wide acceleration; forecast equipment factors remain conditional.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: European manufacturing stagnation and national divergence constrain the assumed relative equipment-purchasing path.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country-level manufacturing heterogeneity constrains the forecast; no single regional output rate is converted into machinery demand.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: African output observations include national counterexamples, supporting differentiated rather than uniform purchasing assumptions.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: China and other Asian manufacturing expansion, with national exceptions, provides directional context rather than an observed ultrafine-equipment growth rate.
8. Business Unit Grinding & Dispersing - NETZSCH
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The supplier documents local grinding-equipment production and commercial operations in Germany, the United States, Brazil, Russia, India and China. This supports considering domestic supply omitted by import statistics, but does not measure the model's correction factors.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The supplier documents local grinding-equipment production and commercial operations in Germany, the United States, Brazil, Russia, India and China. This supports considering domestic supply omitted by import statistics, but does not measure the model's correction factors.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Documented local commercial supply in China and India qualifies an import-only purchasing model; manufacturing location is not itself counted as buyer demand.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Documented local commercial supply in China and India qualifies an import-only purchasing model; manufacturing location is not itself counted as buyer demand.
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   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Documented U.S. production and local commercial operations support an explicit, uncertain domestic-supply bridge rather than treating imports as the entire numerator.
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    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The EUR xx.xx August 2024 HIGmill equipment/auxiliary/services order establishes a commercial package in Africa but identifies neither country nor annual revenue recognition. It constrains attribution and is not added to 2025 demand.
11. Methodology - UNIDO Industrial Analytics Platform
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The methodology notes that U.S. trade coverage includes Puerto Rico, reinforcing that the national purchasing proxy must not be renormalized to the xx.xx-state inventory.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The methodology notes that U.S. trade coverage includes Puerto Rico, reinforcing that the national purchasing proxy must not be renormalized to the xx.xx-state inventory.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The methodology identifies Monaco within French trade coverage; the customs input is an imperfect national demand proxy rather than a directly observed country numerator.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The methodology identifies Monaco within French trade coverage; the customs input is an imperfect national demand proxy rather than a directly observed country numerator.
12. Dry Batch Or Continuous Laboratory Mills - Union Process
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Union Process identifies SD-xx.xx as one laboratory offering for both batch and continuous service. Configuration-specific purchase inclusion and revenue are undisclosed. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Union Process identifies SD-xx.xx as one laboratory offering for both batch and continuous service. Configuration-specific purchase inclusion and revenue are undisclosed. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))

15. Ultra Fine Grinding Mill Market, by Region

Asia-Pacific requires purchaser-specific channel qualification rather than a presumed regional purchasing route. IIT Bombay's 2024 planetary-ball-mill solicitation required both vendor registration and e-tender registration. ■■■■ ■■■■■■■■■■■ ■■ ■■■■■■■■■■■■■ ■■■■■■ ■■■■ ■■ ■■■■■■ ■■■ ■■ ■■■■■■■■■■■■■■■■■■ ■■■■■■■■■■■ ■■■■■ ■■■■■■■■■■ ■■■■■■ ■■■■■■■■■ ■■■ ■■■■■■■■■■ ■■■■■■■■■■■ ■■■ ■■■■■■■■■■■■■ ■■■■■■■■■■ ■■■■■■ ■■■■■■■■■■ ■■■ ■■■■■■■■■■

North America requires application qualification alongside geographic access. U.S. drug-product and human-food equipment provisions establish different purchasing obligations. ■■■■■ ■■■■■■■■■■■■ ■■■ ■■■■■■■■■■ ■■■ ■■■■■■■■■ ■■■■■■■■ ■■■■■ ■■■■ ■■■■ ■ ■■■■■■ ■■■ ■■■■■ ■■■ ■■■■■■■■■■ ■■■■ ■■■■■■ ■■■ ■■ ■■■■■■■■ ■■■■■■■■■■■■■■ ■■ ■■■■■■■■ ■■■■■■■■ ■■ ■■■■■ ■■■■■■■■ ■■■■■■ ■■■■■ ■■■■■■■■■■ ■■■ ■■■■ ■■■■■■■■■■■■■■■ ■■■■■■■■■ ■■■■■ ■■■■■■■■ ■■ ■■■■■■■■■■ ■■■■■■■■■■■■■ ■■■■■■■■ ■■ ■■■■■■■■■■■■ ■■■■■■■■■■■■

Latin American service coverage should be evaluated by equipment and location. Metso completed its Antofagasta service-center expansion in 2025 and identified HIG mill repair and refurbishment among its capabilities. ■■■■ ■■■■■ ■■■■■■■■ ■■■■■■ ■■■■■■■■■■ ■ ■■■■■■■■■■■ ■■■■■■■■ ■■■■■■■■ ■■■■■■■■ ■■■ ■■■■ ■■■ ■■■■■■■■■■ ■■■■■■■■■■ ■■■■■■■■■■■ ■■■■■■ ■■■■■■■■ ■■■■■■■■ ■■■■■■■■■■ ■■■■■■ ■■■■■■■■ ■■■■■■■■■ ■■■ ■■■■■■■■■■ ■■■■■■■■■■■■ ■■■■■■■

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The Middle East label spans destinations whose equipment-access requirements cannot be inferred from a regional sales appointment. ■■■■■ ■■■■■■ ■■■■■■■■■■ ■ ■■■■■■■■ ■■■■■■■■■■■■■■■ ■■■■■■■■■ ■■■■■■■■■■■ ■■■■■■■■■ ■■■■■■■■■ ■■■■■ ■■■■■■■ ■■■■■■■ ■■■■■■■■■ ■■■ ■■■■■■■■ ■■■■■■ ■■■■■■■■■■■■■■ ■■■ ■■■■■■■■■■■ ■■■■■■■■■■■■■ ■■■■■■■ ■■■■■■■■■ ■■■■■■■■■■■■■ That conclusion does not establish acceptance in other Middle Eastern destinations, including Turkey or Israel.

Africa has a documented milling-package purchase example, but its location limits country-level interpretation. Metso's August 2024 African copper-project award included HIGmill equipment, auxiliaries, and services without identifying the destination country. ■■■ ■■■■■ ■■■■■■■■ ■■■ ■■■■■■■■■■ ■■ ■ ■■■■■■■■ ■■■■■■■■■■■■■ ■■■ ■ ■■■■■■■■■■ ■■■■■■■■■ ■■■■■■ ■■■■■ ■■ ■■■■■■■■■■ ■■■■■■■■■■ ■■■■■■■■■■ ■■■■■■■ ■■■■■■■■■■ ■■■ ■■■■■■■■ ■■■■■■■■■ ■■■ ■■■■■■■■■■■■ ■■■■■■■■ ■■■■■■■■■■■■■ ■■■■■■■ ■■■■■■■■■■ ■■■■■■■■■■■■■■■■■■ ■■■■■■■■■■■ ■■■■■■■■■■■

Figure 24. Global Ultra Fine Grinding Mill Market, by Region: Market share evolution, 2025-2032

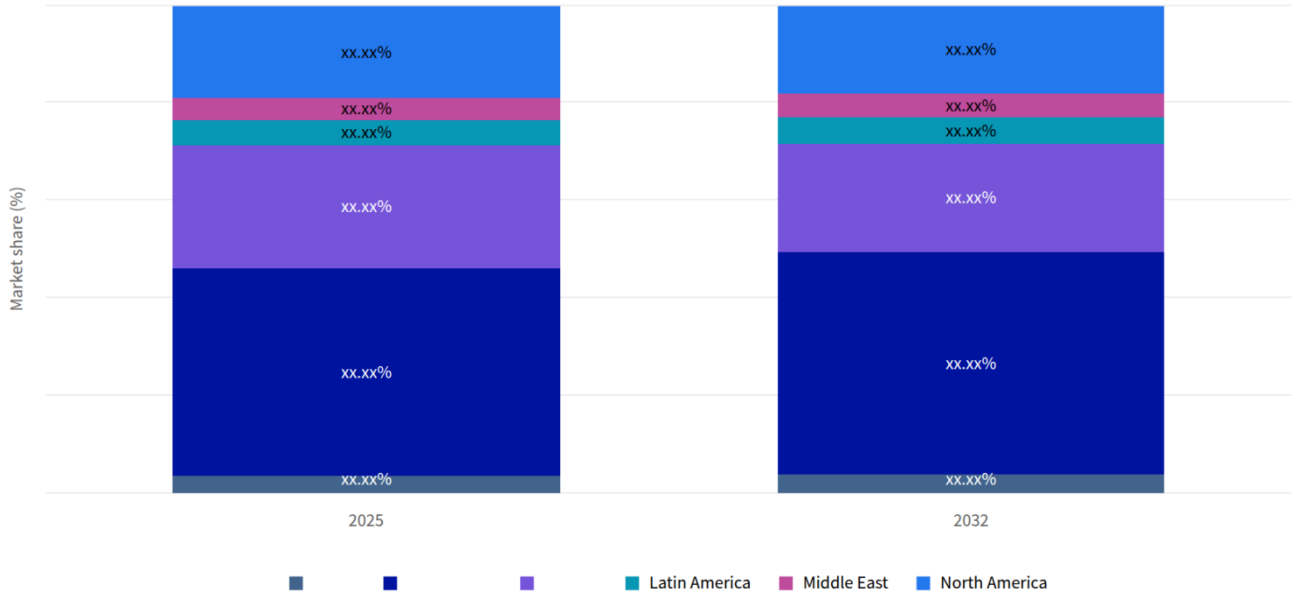


Figure 25. Global Ultra Fine Grinding Mill Market, by Region: Market size by category, 2025

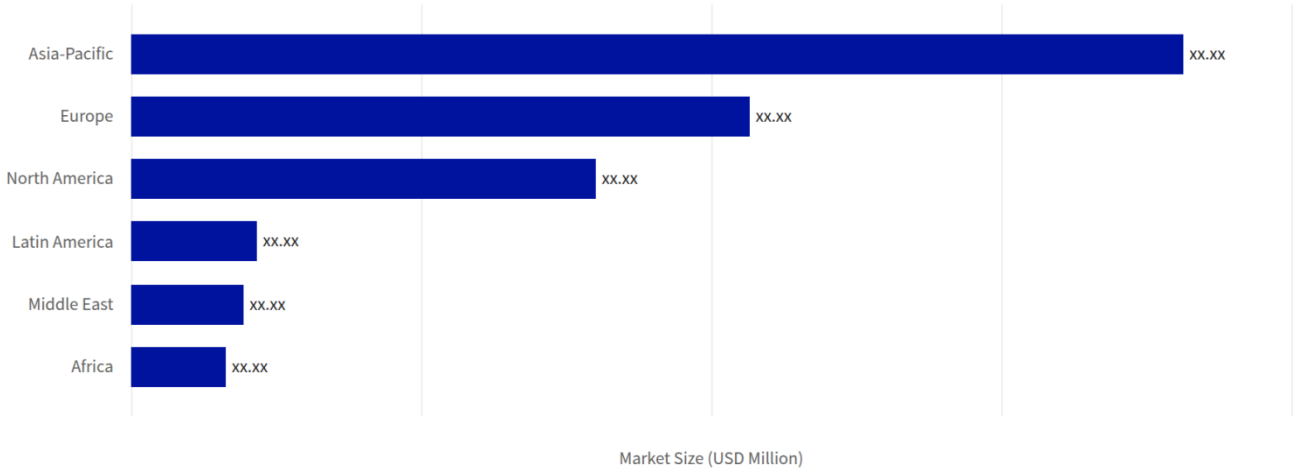


Figure 26. Global Ultra Fine Grinding Mill Market, Regional growth by Sales Channel, 2025-2032 (CAGR %)

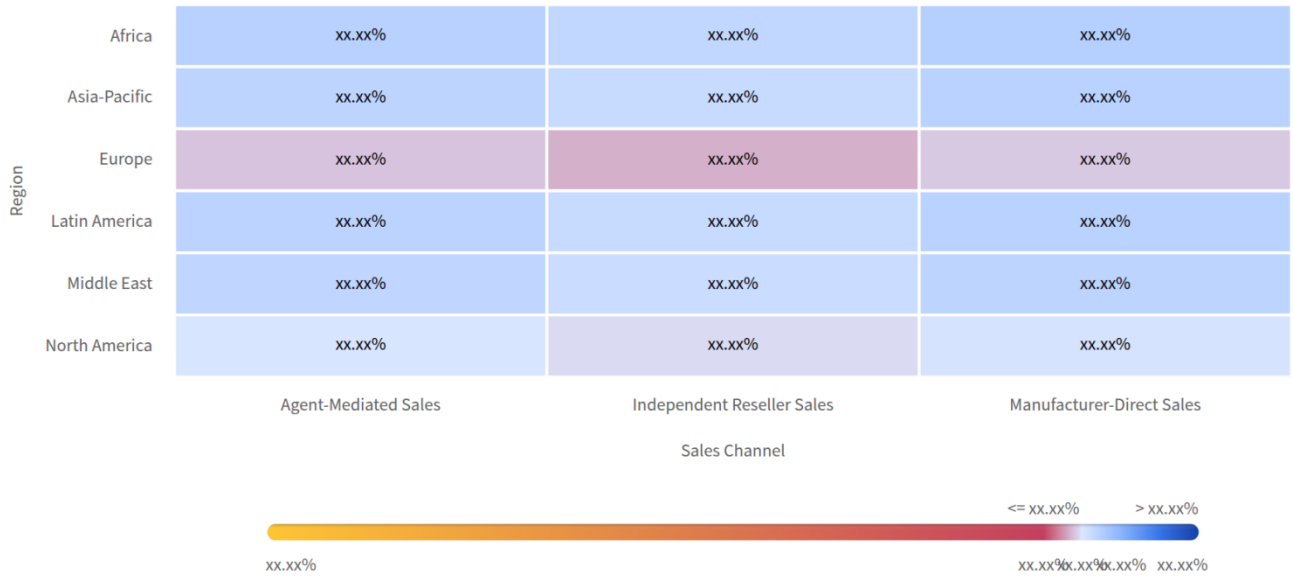


Table 169. Global Ultra Fine Grinding Mill Market, by Region growth contribution, 2025-2032

Category	2025 value (USD Million)	2032 value (USD Million)	Added value (USD Million)	2025 share (%)	2032 share (%)	Change (pp)	Growth share (%)	CAGR (%)
Africa	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Asia-Pacific	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Europe	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Latin America	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Middle East	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
North America	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Scope total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 170. Global Ultra Fine Grinding Mill Market Size, by Region, 2017-2040 (USD Million)

Region	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Africa	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Asia-Pacific	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Europe	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Latin America	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Middle East	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
North America	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Sources & Evidence

1. 21 CFR 211.63 - Equipment Design, Size, and Location

   · U.S. drug-product equipment must be appropriate for intended use; this provision does not establish requirements throughout North America. ([ecfr.gov](https://www.ecfr.gov/current/title-xx.xx/chapter-I/subchapter-C/part-xx.xx/subpart-D/section-xx.xx))

2. 21 CFR 117.40 - Equipment and Utensils

   · U.S. human-food equipment requirements address cleanability, maintenance, allergen cross-contact, and contamination; they should not be generalized to the entire regional or buyer-industry scope. ([ecfr.gov](https://www.ecfr.gov/current/title-xx.xx/chapter-I/subchapter-B/part-xx.xx/subpart-B/section-xx.xx))

3. Metso Receives Order for Grinding Mills to a Copper Project in Africa

   · Metso's August xx.xx 2024, African copper-project award includes HIGmill equipment, auxiliaries, and services, but does not identify the destination country or establish completed delivery. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))

   · Evidence informing base-year allocation inputs; displayed values and growth are calculated: The EUR xx.xx August 2024 HIGmill equipment/auxiliary/services order establishes a commercial package in Africa but identifies neither country nor annual revenue recognition. It constrains attribution and is not added to 2025 demand.

   · Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The EUR xx.xx August 2024 HIGmill equipment/auxiliary/services order establishes a commercial package in Africa but identifies neither country nor annual revenue recognition. It constrains attribution and is not added to 2025 demand.

4. High Energy Planetary Ball Mill - IIT Bombay

   · IIT Bombay's 2024 planetary-ball-mill solicitation requires vendor registration and e-tender registration; it is an institutional example, not a regional procurement rule. ([iitb.ac.in](https://www.iitb.ac.in/tenders/high-energy-planetary-ball-mill))

5. Metso’s service center expansion in Antofagasta elevates support for Chile’s mining industry

   · Metso announced completion of its Antofagasta expansion on August xx.xx 2025, identifying HIG mill repair and refurbishment capability. ([metso.com](https://www.metso.com/corporate/media/news/2025/xx.xx/metsos-service-center-expansion-in-antofagasta-elevates-support-for-chiles-mining-industry/))

6. FAQs - European Free Trade Association

   · EFTA distinguishes EEA participation by Norway and Iceland from Switzerland's bilateral EU arrangements and states that EFTA did not establish a customs union. ([efta.int](https://www.efta.int/about-efta/faqs))

7. Technical regulations - SASO

   · SASO lists a Technical Regulation for General Requirements for Machinery Safety. The listing establishes a national regulatory instrument, not a particular mill's applicability or conformity. ([saso.gov.sa](https://www.saso.gov.sa/en/Laws-And-Regulations/technical_regulations/Pages/default.aspx))

8. Mach for mixing/kneading/crushing/grinding etc imports by country | 2024
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: 2024 gross machinery imports provide the purchasing-index input: U.S. HS xx.xx imports were USD xx.xx. These are broad machinery purchases, not ultrafine mill sales.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: 2024 gross machinery imports provide the purchasing-index input: U.S. HS xx.xx imports were USD xx.xx. These are broad machinery purchases, not ultrafine mill sales.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Country observations include Brazil USD xx.xx and Argentina USD xx.xx under HS xx.xx supporting the regional model's purchasing inputs.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country observations include Brazil USD xx.xx and Argentina USD xx.xx under HS xx.xx supporting the regional model's purchasing inputs.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: HS xx.xx imports include Germany USD xx.xx and France USD xx.xx; individual country records, rather than the EU aggregate, enter the allocation.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: HS xx.xx imports include Germany USD xx.xx and France USD xx.xx; individual country records, rather than the EU aggregate, enter the allocation.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Turkey USD xx.xx and Saudi Arabia USD xx.xx are broad machinery purchasing inputs, not observed qualifying-market numerators.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Turkey USD xx.xx and Saudi Arabia USD xx.xx are broad machinery purchasing inputs, not observed qualifying-market numerators.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: South Africa USD xx.xx and Egypt USD xx.xx, together with additional African reporters, anchor the purchasing baskets.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: South Africa USD xx.xx and Egypt USD xx.xx, together with additional African reporters, anchor the purchasing baskets.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: China USD xx.xx, Indonesia USD xx.xx and Japan USD xx.xx anchor the regional purchasing index before explicit local-supply adjustments.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: China USD xx.xx, Indonesia USD xx.xx and Japan USD xx.xx anchor the regional purchasing index before explicit local-supply adjustments.

9. Crushing/grinding machines for earth/ stone/ore imports by country | 2024
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: 2024 mineral crushing/grinding imports supply the secondary purchasing-index input; they contain out-of-scope ordinary crushers and are not treated as qualifying market revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: 2024 mineral crushing/grinding imports supply the secondary purchasing-index input; they contain out-of-scope ordinary crushers and are not treated as qualifying market revenue.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Country-level mineral machinery import observations support the Latin American purchasing basket and its explicitly modeled mining/package adjustments.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country-level mineral machinery import observations support the Latin American purchasing basket and its explicitly modeled mining/package adjustments.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: European national import observations provide the mineral-machinery component of the common purchasing index; the regional aggregate is not an extra country.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: European national import observations provide the mineral-machinery component of the common purchasing index; the regional aggregate is not an extra country.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Saudi Arabia and Turkey have separately reported mineral machinery imports, supporting national rather than bloc-wide purchasing inputs.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Saudi Arabia and Turkey have separately reported mineral machinery imports, supporting national rather than bloc-wide purchasing inputs.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: African reporter observations include major destinations outside the mandatory-country inventory, constraining a substantial noncatalog demand pool.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: African reporter observations include major destinations outside the mandatory-country inventory, constraining a substantial noncatalog demand pool.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Asia-Pacific and Central Asian reporter observations anchor the mineral-machinery component and unlisted-destination basket.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Asia-Pacific and Central Asian reporter observations anchor the mineral-machinery component and unlisted-destination basket.

10. World Manufacturing Production and Trade, Quarter IV 2025
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The report's mixed North American manufacturing conditions constrain a uniform high-growth assumption; output is not equated with mill purchasing.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Recent Latin American manufacturing weakness is counterevidence to immediate region-wide acceleration; forecast equipment factors remain conditional.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: European manufacturing stagnation and national divergence constrain the assumed relative equipment-purchasing path.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country-level manufacturing heterogeneity constrains the forecast; no single regional output rate is converted into machinery demand.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: African output observations include national counterexamples, supporting differentiated rather than uniform purchasing assumptions.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: China and other Asian manufacturing expansion, with national exceptions, provides directional context rather than an observed ultrafine-equipment growth rate.
11. Business Unit Grinding & Dispersing - NETZSCH
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The supplier documents local grinding-equipment production and commercial operations in Germany, the United States, Brazil, Russia, India and China. This supports considering domestic supply omitted by import statistics, but does not measure the model's correction factors.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The supplier documents local grinding-equipment production and commercial operations in Germany, the United States, Brazil, Russia, India and China. This supports considering domestic supply omitted by import statistics, but does not measure the model's correction factors.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Documented local commercial supply in China and India qualifies an import-only purchasing model; manufacturing location is not itself counted as buyer demand.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Documented local commercial supply in China and India qualifies an import-only purchasing model; manufacturing location is not itself counted as buyer demand.

15.1. Asia-Pacific

Table 171. Asia-Pacific Ultra Fine Grinding Mill Market, by Country growth contribution, 2025-2032

Category	2025 value (USD Million)	2032 value (USD Million)	Added value (USD Million)	2025 share (%)	2032 share (%)	Change (pp)	Growth share (%)	CAGR (%)
Australia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
China	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
India	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Indonesia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Japan	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Malaysia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Philippines	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Singapore	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
South Korea	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Taiwan	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Thailand	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Unallocated / remaining scope	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Scope total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 172. Asia-Pacific Ultra Fine Grinding Mill Market Size, by Region, 2017-2040 (USD Million)

Region	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Australia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
China	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
India	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Indonesia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Japan	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Malaysia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Philippines	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Singapore	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
South Korea	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Taiwan	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Thailand	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Others	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 173. Asia-Pacific Ultra Fine Grinding Mill Market Size, by Supply Scope, 2017-2040 (USD Million)

Supply Scope	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Integrated Milling Packages	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Standalone Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 174. Asia-Pacific Ultra Fine Grinding Mill Market Size, by Mill Technology, 2017-2040 (USD Million)

Mill Technology	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Cutting Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Disc and Colloid Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Gas-Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mechanical Impact Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Media Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Roller Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wet-Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 175. Asia-Pacific Ultra Fine Grinding Mill Market Size, by Media Mills, 2017-2040 (USD Million)

Media Mills	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Rotary and Planetary Ball Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Stirred Media Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Vibratory Media Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 176. Asia-Pacific Ultra Fine Grinding Mill Market Size, by Gas-Jet Mills, 2017-2040 (USD Million)

Gas-Jet Mills	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Loop Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Opposed-Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Spiral Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Target Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 177. Asia-Pacific Ultra Fine Grinding Mill Market Size, by Processed Material, 2017-2040 (USD Million)

Processed Material	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Biomass and Natural Ingredients	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Carbonaceous Materials	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Formulations and Composites	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Industrial Minerals	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Inorganic Chemicals, Ceramics, and Glass	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Metal Ores and Concentrates	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Metals and Alloys	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Organic Chemicals	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Polymers and Elastomers	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 178. Asia-Pacific Ultra Fine Grinding Mill Market Size, by Buyer Industry, 2017-2040 (USD Million)

Buyer Industry	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Chemical and Fuel Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Electrical and Electronic Product Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Food, Beverage, and Feed Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Glass, Ceramics, and Construction Materials Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Materials Recovery and Recycling	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Metals and Fabricated Metal Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mining and Mineral Processing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Pharmaceutical Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Power and Heat Generation	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Research, Education, and Testing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Rubber and Plastics Product Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wood, Pulp, and Paper Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Others	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 179. Asia-Pacific Ultra Fine Grinding Mill Market Size, by Deployment Scale, 2017-2040 (USD Million)

Deployment Scale	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Industrial Production	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Laboratory	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Pilot	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 180. Asia-Pacific Ultra Fine Grinding Mill Market Size, by Sales Channel, 2017-2040 (USD Million)

Sales Channel	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Agent-Mediated Sales	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Independent Reseller Sales	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Manufacturer-Direct Sales	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 181. Asia-Pacific Ultra Fine Grinding Mill Market Size, by Processing State, 2017-2040 (USD Million)

Processing State	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Dry Grinding	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wet and Dry Grinding	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wet Grinding	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 182. Asia-Pacific Ultra Fine Grinding Mill Market Size, by Operating Mode, 2017-2040 (USD Million)

Operating Mode	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Batch	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Batch and Continuous	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Continuous	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Sources & Evidence

1. Mach for mixing/kneading/crushing/grinding etc imports by country | 2024
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: China USD xx.xx, Indonesia USD xx.xx and Japan USD xx.xx anchor the regional purchasing index before explicit local-supply adjustments.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: China USD xx.xx, Indonesia USD xx.xx and Japan USD xx.xx anchor the regional purchasing index before explicit local-supply adjustments.
2. Crushing/grinding machines for earth/ stone/ore imports by country | 2024
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Asia-Pacific and Central Asian reporter observations anchor the mineral-machinery component and unlisted-destination basket.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Asia-Pacific and Central Asian reporter observations anchor the mineral-machinery component and unlisted-destination basket.
3. World Manufacturing Production and Trade, Quarter IV 2025
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: China and other Asian manufacturing expansion, with national exceptions, provides directional context rather than an observed ultrafine-equipment growth rate.

4. Business Unit Grinding & Dispersing - NETZSCH
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Documented local commercial supply in China and India qualifies an import-only purchasing model; manufacturing location is not itself counted as buyer demand.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Documented local commercial supply in China and India qualifies an import-only purchasing model; manufacturing location is not itself counted as buyer demand.
5. High Energy Planetary Ball Mill - IIT Bombay
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The 2024 solicitation concerns one mill and requires two registration stages. It supports a purchaser-specific access constraint, not an award, national procurement conversion rate or forecast revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The 2024 solicitation concerns one mill and requires two registration stages. It supports a purchaser-specific access constraint, not an award, national procurement conversion rate or forecast revenue.
6. Methodology - UNIDO Industrial Analytics Platform
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The methodological treatment maps Other Asia, nes to Taiwan with an explicit possible residual attribution error, supporting a qualified reporter-to-catalog bridge.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The methodological treatment maps Other Asia, nes to Taiwan with an explicit possible residual attribution error, supporting a qualified reporter-to-catalog bridge.
7. Hosokawa Micron - FY2025 Financial Results Presentation, November 25, 2025 (Japanese)
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; material attribution modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; material attribution modeled.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; establishment attribution modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; establishment attribution modeled.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; buyer attribution assumed.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; buyer attribution assumed.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; qualifying power attribution unverified.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; qualifying power attribution unverified.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; institutional attribution assumed.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; institutional attribution assumed.

8. Metso Receives Order for Grinding Mills to a Copper Project in Africa
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Approximately EUR xx.xx 2024 HIGmill order includes auxiliaries and services; a package-scale anchor, not recognized annual revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Approximately EUR xx.xx 2024 HIGmill order includes auxiliaries and services; a package-scale anchor, not recognized annual revenue.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The copper-project award establishes an ore/concentrate commercial purchasing context.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The copper-project award establishes an ore/concentrate commercial purchasing context.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The award concerns an African mining project; it does not disclose the global mining-buyer share.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The award concerns an African mining project; it does not disclose the global mining-buyer share.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Large industrial equipment procurement supports the production-scale category premise.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Large industrial equipment procurement supports the production-scale category premise.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The August xx.xx 2024 announcement records an approximately EUR xx.xx HIGmill order including auxiliaries and services. It anchors package-level commercial materiality, not a mill unit price or 2025 recognized revenue. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The August xx.xx 2024 announcement records an approximately EUR xx.xx HIGmill order including auxiliaries and services. It anchors package-level commercial materiality, not a mill unit price or 2025 recognized revenue. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The stirred-package order supports the Media Mills value-weight model and continuing commercial-demand premise, with order-to-revenue timing unresolved. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The stirred-package order supports the Media Mills value-weight model and continuing commercial-demand premise, with order-to-revenue timing unresolved. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
9. HIGmill Plant - Metso
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Standalone marketing terminology does not establish the study's Standalone Mills equipment scope.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Standalone marketing terminology does not establish the study's Standalone Mills equipment scope.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: HIGmill Plant includes pre-engineered auxiliary modules, supporting classification as an equipment package.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: HIGmill Plant includes pre-engineered auxiliary modules, supporting classification as an equipment package.

10. IsaMill - About, Technology Partnership and Engineering
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Delivery alternatives permit mill-only supply or additional auxiliary equipment; actual equipment scope determines attribution.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Delivery alternatives permit mill-only supply or additional auxiliary equipment; actual equipment scope determines attribution.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Modular auxiliary-inclusive and turnkey alternatives support differentiated package scope, without proving a global adoption percentage.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Modular auxiliary-inclusive and turnkey alternatives support differentiated package scope, without proving a global adoption percentage.
11. Commission Processing - NIPPON COKE & ENGINEERING CO., LTD.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Own commercial processing portfolio identifies glass, ceramics and inorganic materials; establishes material mapping, not equipment revenue.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own commercial processing portfolio identifies glass, ceramics and inorganic materials; establishes material mapping, not equipment revenue.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Organic pigments are named commercial processing materials.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Organic pigments are named commercial processing materials.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Metal powders are named commercial processing materials.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Metal powders are named commercial processing materials.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Carbon is identified in the operator's commercial grinding portfolio.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Carbon is identified in the operator's commercial grinding portfolio.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Thermosetting resin supports a polymer-material category premise.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Thermosetting resin supports a polymer-material category premise.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Ink-related grinding establishes a commercial reference but does not resolve whole-formulation versus constituent duty.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Ink-related grinding establishes a commercial reference but does not resolve whole-formulation versus constituent duty.

12. Micronization / Grinding - A. Ebbecke Verfahrenstechnik AG
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Commercial contract-grinding coverage includes natural materials and food ingredients; processing fees are excluded from equipment value.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Commercial contract-grinding coverage includes natural materials and food ingredients; processing fees are excluded from equipment value.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Plastic granulates and resins establish material coverage, not downstream customers' equipment ownership.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Plastic granulates and resins establish material coverage, not downstream customers' equipment ownership.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operator-side food-processing reference supports establishment attribution rather than automatically assigning equipment to its customers.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operator-side food-processing reference supports establishment attribution rather than automatically assigning equipment to its customers.
13. Manufacturing Capabilities - Asbury Advanced Materials
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Own manufacturing disclosure identifies carbon-material grinding and micronization; supports the material-duty premise only.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own manufacturing disclosure identifies carbon-material grinding and micronization; supports the material-duty premise only.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Custom formulations and dispersions are commercial outputs, but joint whole-formulation milling remains unmeasured.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Custom formulations and dispersions are commercial outputs, but joint whole-formulation milling remains unmeasured.
14. Pyrum Innovations AG - Interim Group Report January 1 to June 30, 2025
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The purchaser's 2025 report records a grinding-plant installation associated with recovered carbon black; no downstream material revenue is counted.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The purchaser's 2025 report records a grinding-plant installation associated with recovered carbon black; no downstream material revenue is counted.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The report establishes an actual recovery-business equipment context, while the exact attributable mill expenditure remains undisclosed.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The report establishes an actual recovery-business equipment context, while the exact attributable mill expenditure remains undisclosed.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The disclosed commercial-site grinding installation supports Industrial Production classification.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The disclosed commercial-site grinding installation supports Industrial Production classification.

15. NRRI Advances Efficient Grinding Technology on the Iron Range
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The institution distinguishes a planned bench-scale purchase from its loaned pilot equipment; not a completed-sale census.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The institution distinguishes a planned bench-scale purchase from its loaned pilot equipment; not a completed-sale census.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The May xx.xx 2024 account identifies a loaned pilot stirred mill; unpaid placement is not counted as equipment-sale revenue.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The May xx.xx 2024 account identifies a loaned pilot stirred mill; unpaid placement is not counted as equipment-sale revenue.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operating research institute is distinct from its mining clients, supporting buyer/material separation.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operating research institute is distinct from its mining clients, supporting buyer/material separation.
16. Planetary Ball Mill PM 100 - RETSCH
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The PM xx.xx is marketed as a benchtop instrument, supporting the small-laboratory pool classification without establishing sales weight.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The PM xx.xx is marketed as a benchtop instrument, supporting the small-laboratory pool classification without establishing sales weight.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The individual-instrument offering supports a narrower equipment-supply alternative; package incidence remains modeled.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The individual-instrument offering supports a narrower equipment-supply alternative; package incidence remains modeled.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: PM xx.xx is a marketed benchtop planetary platform, supporting laboratory-category mapping rather than shipment or price weights. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: PM xx.xx is a marketed benchtop planetary platform, supporting laboratory-category mapping rather than shipment or price weights. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The product page advertises both dry and wet capability. Actual dual-state purchase inclusion remains an explicit model assumption. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The product page advertises both dry and wet capability. Actual dual-state purchase inclusion remains an explicit model assumption. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))

17. Jet Mill - Contract History CW2408170, CanadaBuys
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: A May xx.xx 2026 laboratory jet-mill award totals CAD xx.xx; a dated procurement check, not a 2025 shipment or global average price.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: A May xx.xx 2026 laboratory jet-mill award totals CAD xx.xx; a dated procurement check, not a 2025 shipment or global average price.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The record distinguishes Natural Resources Canada as buying organization from PSPC as contracting organization, supporting establishment attribution.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The record distinguishes Natural Resources Canada as buying organization from PSPC as contracting organization, supporting establishment attribution.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The jet-mill award totals CAD xx.xx and is dated May xx.xx 2026. It is a nearby-period laboratory purchasing comparator, not a 2025 recognized sale, and supplies neither a gas-jet subtype nor a definitive channel role. ([canadabuys.canada.ca](https://canadabuys.canada.ca/en/tender-opportunities/contract-history/cw2408170-xx.xx))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The jet-mill award totals CAD xx.xx and is dated May xx.xx 2026. It is a nearby-period laboratory purchasing comparator, not a 2025 recognized sale, and supplies neither a gas-jet subtype nor a definitive channel role. ([canadabuys.canada.ca](https://canadabuys.canada.ca/en/tender-opportunities/contract-history/cw2408170-xx.xx))
18. MFC Production Equipment - FiberLean
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The manufacturer's commercial offering targets pulp, paper and related establishments; it is not a measured industry sales share.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The manufacturer's commercial offering targets pulp, paper and related establishments; it is not a measured industry sales share.
19. Pulverizing Equipment - Coperion
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The broader portfolio names power-generation applications and separately lists ultrafine equipment; this limits, rather than verifies, the assumed qualifying power-buyer allocation.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The broader portfolio names power-generation applications and separately lists ultrafine equipment; this limits, rather than verifies, the assumed qualifying power-buyer allocation.
20. LG Energy Solution Releases 2025 Financial Results - January 29, 2026
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own 2025 revenue decline and dated 2026 capital-expenditure reduction target constrain battery-related equipment-adoption assumptions.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Existing-asset reuse strategy qualifies a direct downstream-demand-to-new-carbon-material-mill investment inference.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Buyer investment restraint constrains the relative application multiplier; upstream chemical attribution remains separately assumed.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own battery-manufacturer financial and investment plans provide a counter-test, not an ultrafine equipment purchasing total.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The January 2026 emphasis on reduced new investment qualifies automatic growth in broader equipment-package adoption.

21. UNSD Classification Detail - ISIC Rev.4, Class 3830: Materials Recovery
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The official classification distinguishes secondary-material recovery from manufacture of new final products; it supplies no equipment sales weight.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The official classification distinguishes secondary-material recovery from manufacture of new final products; it supplies no equipment sales weight.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Recovered-input use alone does not classify the equipment operator as a recovery establishment rather than a product manufacturer.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Recovered-input use alone does not classify the equipment operator as a recovery establishment rather than a product manufacturer.
22. Ultrafin Mill: Super Masscolloider, Masuko MKCA6-5J CE - University of Ljubljana
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The university inventories a laboratory ultrafine mill within wood science; the institutional operator is not a wood-products manufacturer.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The university inventories a laboratory ultrafine mill within wood science; the institutional operator is not a wood-products manufacturer.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The institutional inventory expressly identifies laboratory equipment, supporting deployment classification without establishing a purchase-year value.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The institutional inventory expressly identifies laboratory equipment, supporting deployment classification without establishing a purchase-year value.
23. Contract Manufacturing of Pharmaceuticals - YUKI GOSEI KOGYO CO., LTD.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operator distinguishes production jet mills from smaller equipment, supporting industrial deployment at a pharmaceutical contract manufacturer.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operator distinguishes production jet mills from smaller equipment, supporting industrial deployment at a pharmaceutical contract manufacturer.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The actual pharmaceutical manufacturing operator is distinct from customers outsourcing production; processing-service receipts remain excluded.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The actual pharmaceutical manufacturing operator is distinct from customers outsourcing production; processing-service receipts remain excluded.

24. Record year for Metso stirred mills as mining industry opts for energy-efficient comminution technology

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Metso reports more than twenty Vertimill sales in 2025 and approximately xx.xx cumulative stirred-mill deliveries. Broader application coverage prevents treating these as ultrafine-only annual shipments; they constrain the modeled stirred/mining allocation and forecast premise.
([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Metso reports more than twenty Vertimill sales in 2025 and approximately xx.xx cumulative stirred-mill deliveries. Broader application coverage prevents treating these as ultrafine-only annual shipments; they constrain the modeled stirred/mining allocation and forecast premise.
([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The disclosed stirred-equipment activity supports material Media Mills participation, not the final modeled parent share.
([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The disclosed stirred-equipment activity supports material Media Mills participation, not the final modeled parent share.
([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))

25. Bühler strengthens its market position

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Bühler reports xx.xx% Grinding & Dispersing order growth in 2025 against a xx.xx% decline in broader Advanced Materials orders. This is a mixed commercial leading indicator, not observed market-share growth.
([buhlergroup.com](https://www.buhlergroup.com/global/en/media/media-releases/b%C3%BChler-strengthens-its-marketposition.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Bühler reports xx.xx% Grinding & Dispersing order growth in 2025 against a xx.xx% decline in broader Advanced Materials orders. This is a mixed commercial leading indicator, not observed market-share growth.
([buhlergroup.com](https://www.buhlergroup.com/global/en/media/media-releases/b%C3%BChler-strengthens-its-marketposition.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The disclosed battery-related and other application orders constrain differentiated Media Mills forecast assumptions without converting orders directly to annual equipment revenue.
([buhlergroup.com](https://www.buhlergroup.com/global/en/media/media-releases/b%C3%BChler-strengthens-its-marketposition.html))

26. Management Greetings | HOSOKAWAMICRON CORPORATION

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Hosokawa reports FY2025 net sales of JPY xx.xx, down xx.xx%, and orders down xx.xx%. The diversified-company result challenges uniform purchasing acceleration and constrains, rather than directly measures, technology-mix assumptions.
([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/ir/management_policy/management_greetings.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Hosokawa reports FY2025 net sales of JPY xx.xx, down xx.xx%, and orders down xx.xx%. The diversified-company result challenges uniform purchasing acceleration and constrains, rather than directly measures, technology-mix assumptions.
([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/ir/management_policy/management_greetings.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The same broader financial contraction is counterevidence to assuming uniform Media Mills growth across suppliers; no corporate revenue is assigned directly to the category.
([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/ir/management_policy/management_greetings.html))

27. Details of micromeritics | HOSOKAWAMICRON CORPORATION

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Hosokawa identifies its AS spiral offering, supporting subtype mapping rather than a sales weight. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Hosokawa identifies its AS spiral offering, supporting subtype mapping rather than a sales weight. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The AFG/TFG counterjet offerings support the retained Opposed-Jet commercial mapping. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The AFG/TFG counterjet offerings support the retained Opposed-Jet commercial mapping. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The manufacturer identifies Innovomizer as a mechanical ultrafine offering; ordinary impact equipment is not automatically included. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The manufacturer identifies Innovomizer as a mechanical ultrafine offering; ordinary impact equipment is not automatically included. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

28. Grinding Equipment Manufacturer Supplier Factory, Grinding System | Longly

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: LONGLY discloses current annual capacity above 2,000 equipment units and commercial wet-grinding offerings. Capacity is bridged through explicitly assumed timing, utilization and eligible-product factors; it is not reported 2025 stirred-mill shipments. ([longlymill.com](https://www.longlymill.com/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: LONGLY discloses current annual capacity above 2,000 equipment units and commercial wet-grinding offerings. Capacity is bridged through explicitly assumed timing, utilization and eligible-product factors; it is not reported 2025 stirred-mill shipments. ([longlymill.com](https://www.longlymill.com/))

29. Ultra-Fine Grinding - Hosokawa Micron Malaysia

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The inspected ultrafine portfolio identifies AWM-F table-roller equipment, supporting the qualifying Roller Mills boundary, not its assumed counts or prices. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The inspected ultrafine portfolio identifies AWM-F table-roller equipment, supporting the qualifying Roller Mills boundary, not its assumed counts or prices. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Super Orion is a marketed rotary ball-mill constituent of the combined rotary/planetary category. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Super Orion is a marketed rotary ball-mill constituent of the combined rotary/planetary category. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: MJT is explicitly listed as a target-type offering, supporting precedence of the named platform over overlapping generic jet terminology. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: MJT is explicitly listed as a target-type offering, supporting precedence of the named platform over overlapping generic jet terminology. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

30. Loop Jet Mill - Consistency. Compliance. Engineered.

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The current named Loop Jet Mill listing establishes an offered commercial platform. It supports forecast category continuity, but does not disclose subtype revenue or prove 2025 sales. ([jetmillmfg.com](https://www.jetmillmfg.com/loop-jet-mill/))

31. SWECO Vibratory Grinding and Particle Size Reduction Equipment

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: SWECO markets Vibro-Energy grinding equipment with separate wet and wet/dry offerings. This supports commercial category and configuration mapping, not the modeled frequency of purchases. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: SWECO markets Vibro-Energy grinding equipment with separate wet and wet/dry offerings. This supports commercial category and configuration mapping, not the modeled frequency of purchases. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Named wet/dry models establish dual-state availability; they do not establish the exact supplied configuration or a market-wide value share. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Named wet/dry models establish dual-state availability; they do not establish the exact supplied configuration or a market-wide value share. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))

32. Fine-cutting mill with rotating classifying feature - the sensational new development!

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The September xx.xx 2014 own-product announcement establishes a pre-base-year SecoMy S cutting offering described for ultrafine commercial applications. It is category evidence, not annual equipment revenue. ([grinding.netzsch.com](https://grinding.netzsch.com/en/news/2014/fine-cutting-mill-with-rotating-classifying-feature-the-sensational-new-development))

33. NETZSCH SecoMy S - Precision Cutting Redefined!

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The August 2026 SecoMy S brochure confirms continuing commercial ultrafine-cutting positioning and system-supply availability. It supports category persistence, not the assumed forecast spending share. ([grinding.netzsch.com](https://grinding.netzsch.com/_Resources/Persistent/xx.xx/e/xx.xx/b/8e4b5adcfc16fcc2d83974f8080d614cce1a2c01/NETZSCH_Fine_Cutting_Mill_SecoMy_S_e.pdf))

34. Wet Milling and Dispersing Device - Star Burst - Sugino Corp.

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: SUGINO's Star Burst portfolio identifies wet-jet equipment across research and production purchasing contexts. Only milling-attributable supply is included; adjacent droplet-only or dispersion activity is not automatically counted. ([suginocorp.com](https://www.suginocorp.com/star-burst/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: SUGINO's Star Burst portfolio identifies wet-jet equipment across research and production purchasing contexts. Only milling-attributable supply is included; adjacent droplet-only or dispersion activity is not automatically counted. ([suginocorp.com](https://www.suginocorp.com/star-burst/))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The wet-jet offering supports wet-state classification within the joint value model, not the total Wet Grinding share. ([suginocorp.com](https://www.suginocorp.com/star-burst/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The wet-jet offering supports wet-state classification within the joint value model, not the total Wet Grinding share. ([suginocorp.com](https://www.suginocorp.com/star-burst/))

35. IBU-tec | Mills - Milling Technology for Dry and Wet Grinding
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operator table separately lists two dry opposed-jet units. This is an installed-inventory observation, not a shipment or revenue ratio. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operator table separately lists two dry opposed-jet units. This is an installed-inventory observation, not a shipment or revenue ratio. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Three wet agitator-bead units are separately inventoried, supporting state-specific commercial classification without using their count as a market weight. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Three wet agitator-bead units are separately inventoried, supporting state-specific commercial classification without using their count as a market weight. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
36. Comminution - NTNU
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: NTNU separately records wet/dry capability for stirred and planetary equipment; the inventory is not a representative value-share dataset. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: NTNU separately records wet/dry capability for stirred and planetary equipment; the inventory is not a representative value-share dataset. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The planetary equipment is recorded as batch, supporting a laboratory batch context without assuming all laboratories are batch-only. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The planetary equipment is recorded as batch, supporting a laboratory batch context without assuming all laboratories are batch-only. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The laboratory jet rig is recorded as continuous, independently challenging equivalence between continuous mode and industrial scale. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The laboratory jet rig is recorded as continuous, independently challenging equivalence between continuous mode and industrial scale. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
37. Dry Batch Or Continuous Laboratory Mills - Union Process
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Union Process identifies SD-xx.xx as one laboratory offering for both batch and continuous service. Configuration-specific purchase inclusion and revenue are undisclosed. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Union Process identifies SD-xx.xx as one laboratory offering for both batch and continuous service. Configuration-specific purchase inclusion and revenue are undisclosed. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The same named offering advertises wet/dry capability, supporting a dual-state category premise rather than an observed adoption percentage. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The same named offering advertises wet/dry capability, supporting a dual-state category premise rather than an observed adoption percentage. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))

38. Retsch Contact & Services - Contact Partners Worldwide

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: RETSCH describes a network including daughter companies. Manufacturer affiliation, rather than contact location, informs direct-route attribution. ([retsch.com](https://www.retsch.com/contact-services/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: RETSCH describes a network including daughter companies. Manufacturer affiliation, rather than contact location, informs direct-route attribution. ([retsch.com](https://www.retsch.com/contact-services/))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The network also includes trained distributors, establishing a resale-access premise but not distributor ownership roles or annual sales weights. ([retsch.com](https://www.retsch.com/contact-services/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The network also includes trained distributors, establishing a resale-access premise but not distributor ownership roles or annual sales weights. ([retsch.com](https://www.retsch.com/contact-services/))

39. HOSOKAWA ALPINE Aktiengesellschaft - Conditions of Sale 371_00 EN

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Hosokawa requires company confirmation of representatives' transactions and makes contractual scope authoritative. The terms support agency-role attribution, not the assumed agent percentage. ([hosokawa-alpine.com](https://www.hosokawa-alpine.com/fileadmin/allgemein/Legal/AGB/AGB_Verkaufsbedingungen_en_371_00.pdf))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Hosokawa requires company confirmation of representatives' transactions and makes contractual scope authoritative. The terms support agency-role attribution, not the assumed agent percentage. ([hosokawa-alpine.com](https://www.hosokawa-alpine.com/fileadmin/allgemein/Legal/AGB/AGB_Verkaufsbedingungen_en_371_00.pdf))

40. UNSD - ISIC Rev.5, Class 4610: Wholesale on a Fee or Contract Basis

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: ISIC Rev.xx.xx class xx.xx defines fee/commission intermediation without ownership, supporting a non-title-taking agency numerator distinct from goods supplied on own account. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: ISIC Rev.xx.xx class xx.xx defines fee/commission intermediation without ownership, supporting a non-title-taking agency numerator distinct from goods supplied on own account. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Own-account wholesale is excluded from the agency class, supporting the reseller/agent partition without supplying ultrafine-mill channel shares. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own-account wholesale is excluded from the agency class, supporting the reseller/agent partition without supplying ultrafine-mill channel shares. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))

41. ITDI-PB-2024-057 - Supply, Delivery, Installation and Commissioning of Ultra-fine Friction Grinder

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The 2024 friction-grinder procurement had a PHP xx.xx budget and failed with no bidder. It establishes a configured-package spending ceiling and commercial category, not a sale or a shipment count. ([notices.philgeps.gov.ph](https://notices.philgeps.gov.ph/GEPSNONPILOT/Tender/PrintableBidNoticeAbstractUI.aspx?refid=xx.xx))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The 2024 friction-grinder procurement had a PHP xx.xx budget and failed with no bidder. It establishes a configured-package spending ceiling and commercial category, not a sale or a shipment count. ([notices.philgeps.gov.ph](https://notices.philgeps.gov.ph/GEPSNONPILOT/Tender/PrintableBidNoticeAbstractUI.aspx?refid=xx.xx))

42. Bangko Sentral ng Pilipinas - Balance of Payments Report, Q4 2024

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The central bank reports a 2024 average of PHP xx.xx per USD. Dividing the failed PHP xx.xx procurement budget by this rate gives an approximately USD xx.xx comparison ceiling, not realized equipment revenue. ([bsp.gov.ph](https://www.bsp.gov.ph/Media_And_Research/Balance%20of%20Payments%20Report/2024/BOP_4qtr2024.pdf))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The central bank reports a 2024 average of PHP xx.xx per USD. Dividing the failed PHP xx.xx procurement budget by this rate gives an approximately USD xx.xx comparison ceiling, not realized equipment revenue. ([bsp.gov.ph](https://www.bsp.gov.ph/Media_And_Research/Balance%20of%20Payments%20Report/2024/BOP_4qtr2024.pdf))

15.2. Europe

Table 183. Europe Ultra Fine Grinding Mill Market, by Country growth contribution, 2025-2032

Category	2025 value (USD Million)	2032 value (USD Million)	Added value (USD Million)	2025 share (%)	2032 share (%)	Change (pp)	Growth share (%)	CAGR (%)
Austria	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Belgium	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Denmark	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Finland	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
France	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Germany	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Italy	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Netherlands	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Norway	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Poland	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Portugal	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Russia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Spain	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Sweden	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Switzerland	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Unallocated / remaining scope	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United Kingdom	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Scope total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 184. Europe Ultra Fine Grinding Mill Market Size, by Region, 2017-2040 (USD Million)

Region	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Austria	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Belgium	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Denmark	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Finland	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
France	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Germany	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Italy	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Netherlands	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Norway	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Poland	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Portugal	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Russia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Spain	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Sweden	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Switzerland	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United Kingdom	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Others	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 185. Europe Ultra Fine Grinding Mill Market Size, by Supply Scope, 2017-2040 (USD Million)

Supply Scope	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Integrated Milling Packages	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Standalone Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 186. Europe Ultra Fine Grinding Mill Market Size, by Mill Technology, 2017-2040 (USD Million)

Mill Technology	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Cutting Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Disc and Colloid Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Gas-Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mechanical Impact Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Media Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Roller Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wet-Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 187. Europe Ultra Fine Grinding Mill Market Size, by Media Mills, 2017-2040 (USD Million)

Media Mills	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Rotary and Planetary Ball Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Stirred Media Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Vibratory Media Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 188. Europe Ultra Fine Grinding Mill Market Size, by Gas-Jet Mills, 2017-2040 (USD Million)

Gas-Jet Mills	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Loop Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Opposed-Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Spiral Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Target Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 189. Europe Ultra Fine Grinding Mill Market Size, by Processed Material, 2017-2040 (USD Million)

Processed Material	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Biomass and Natural Ingredients	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Carbonaceous Materials	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Formulations and Composites	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Industrial Minerals	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Inorganic Chemicals, Ceramics, and Glass	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Metal Ores and Concentrates	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Metals and Alloys	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Organic Chemicals	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Polymers and Elastomers	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 190. Europe Ultra Fine Grinding Mill Market Size, by Buyer Industry, 2017-2040 (USD Million)

Buyer Industry	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Chemical and Fuel Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Electrical and Electronic Product Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Food, Beverage, and Feed Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Glass, Ceramics, and Construction Materials Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Materials Recovery and Recycling	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Metals and Fabricated Metal Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mining and Mineral Processing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Pharmaceutical Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Power and Heat Generation	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Research, Education, and Testing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Rubber and Plastics Product Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wood, Pulp, and Paper Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Others	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 191. Europe Ultra Fine Grinding Mill Market Size, by Deployment Scale, 2017-2040 (USD Million)

Deployment Scale	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Industrial Production	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Laboratory	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Pilot	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 192. Europe Ultra Fine Grinding Mill Market Size, by Sales Channel, 2017-2040 (USD Million)

Sales Channel	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Agent-Mediated Sales	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Independent Reseller Sales	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Manufacturer-Direct Sales	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 193. Europe Ultra Fine Grinding Mill Market Size, by Processing State, 2017-2040 (USD Million)

Processing State	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Dry Grinding	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wet and Dry Grinding	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wet Grinding	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 194. Europe Ultra Fine Grinding Mill Market Size, by Operating Mode, 2017-2040 (USD Million)

Operating Mode	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Batch	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Batch and Continuous	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Continuous	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Sources & Evidence

1. Mach for mixing/kneading/crushing/grinding etc imports by country | 2024
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: HS xx.xx imports include Germany USD xx.xx and France USD xx.xx; individual country records, rather than the EU aggregate, enter the allocation.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: HS xx.xx imports include Germany USD xx.xx and France USD xx.xx; individual country records, rather than the EU aggregate, enter the allocation.
2. Crushing/grinding machines for earth/ stone/ore imports by country | 2024
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: European national import observations provide the mineral-machinery component of the common purchasing index; the regional aggregate is not an extra country.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: European national import observations provide the mineral-machinery component of the common purchasing index; the regional aggregate is not an extra country.

3. Mach for mixing/kneading/crushing/grinding etc imports by country | 2021
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports were USD xx.xx. The model applies a qualified timing/access bridge and does not describe this as current trade.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports were USD xx.xx. The model applies a qualified timing/access bridge and does not describe this as current trade.
4. Crushing/grinding machines for earth/ stone/ore imports by country | 2021
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports of USD xx.xx provide the second historical purchasing primitive; the 2025 and 2032 allocations remain modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports of USD xx.xx provide the second historical purchasing primitive; the 2025 and 2032 allocations remain modeled.
5. World Manufacturing Production and Trade, Quarter IV 2025
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: European manufacturing stagnation and national divergence constrain the assumed relative equipment-purchasing path.
6. Business Unit Grinding & Dispersing - NETZSCH
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The supplier documents local grinding-equipment production and commercial operations in Germany, the United States, Brazil, Russia, India and China. This supports considering domestic supply omitted by import statistics, but does not measure the model's correction factors.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The supplier documents local grinding-equipment production and commercial operations in Germany, the United States, Brazil, Russia, India and China. This supports considering domestic supply omitted by import statistics, but does not measure the model's correction factors.
7. Methodology - UNIDO Industrial Analytics Platform
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The methodology identifies Monaco within French trade coverage; the customs input is an imperfect national demand proxy rather than a directly observed country numerator.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The methodology identifies Monaco within French trade coverage; the customs input is an imperfect national demand proxy rather than a directly observed country numerator.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The methodology identifies Liechtenstein within Swiss trade coverage, retained as a limitation of the modeled national purchasing bridge.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The methodology identifies Liechtenstein within Swiss trade coverage, retained as a limitation of the modeled national purchasing bridge.

8. Hosokawa Micron - FY2025 Financial Results Presentation, November 25, 2025 (Japanese)
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; material attribution modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; material attribution modeled.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; establishment attribution modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; establishment attribution modeled.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; buyer attribution assumed.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; buyer attribution assumed.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; qualifying power attribution unverified.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; qualifying power attribution unverified.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; institutional attribution assumed.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; institutional attribution assumed.

9. Metso Receives Order for Grinding Mills to a Copper Project in Africa
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Approximately EUR xx.xx 2024 HIGmill order includes auxiliaries and services; a package-scale anchor, not recognized annual revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Approximately EUR xx.xx 2024 HIGmill order includes auxiliaries and services; a package-scale anchor, not recognized annual revenue.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The copper-project award establishes an ore/concentrate commercial purchasing context.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The copper-project award establishes an ore/concentrate commercial purchasing context.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The award concerns an African mining project; it does not disclose the global mining-buyer share.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The award concerns an African mining project; it does not disclose the global mining-buyer share.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Large industrial equipment procurement supports the production-scale category premise.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Large industrial equipment procurement supports the production-scale category premise.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The August xx.xx 2024 announcement records an approximately EUR xx.xx HIGmill order including auxiliaries and services. It anchors package-level commercial materiality, not a mill unit price or 2025 recognized revenue. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The August xx.xx 2024 announcement records an approximately EUR xx.xx HIGmill order including auxiliaries and services. It anchors package-level commercial materiality, not a mill unit price or 2025 recognized revenue. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The stirred-package order supports the Media Mills value-weight model and continuing commercial-demand premise, with order-to-revenue timing unresolved. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The stirred-package order supports the Media Mills value-weight model and continuing commercial-demand premise, with order-to-revenue timing unresolved. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
10. HIGmill Plant - Metso
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Standalone marketing terminology does not establish the study's Standalone Mills equipment scope.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Standalone marketing terminology does not establish the study's Standalone Mills equipment scope.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: HIGmill Plant includes pre-engineered auxiliary modules, supporting classification as an equipment package.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: HIGmill Plant includes pre-engineered auxiliary modules, supporting classification as an equipment package.

11. IsaMill - About, Technology Partnership and Engineering
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Delivery alternatives permit mill-only supply or additional auxiliary equipment; actual equipment scope determines attribution.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Delivery alternatives permit mill-only supply or additional auxiliary equipment; actual equipment scope determines attribution.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Modular auxiliary-inclusive and turnkey alternatives support differentiated package scope, without proving a global adoption percentage.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Modular auxiliary-inclusive and turnkey alternatives support differentiated package scope, without proving a global adoption percentage.
12. Commission Processing - NIPPON COKE & ENGINEERING CO., LTD.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Own commercial processing portfolio identifies glass, ceramics and inorganic materials; establishes material mapping, not equipment revenue.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own commercial processing portfolio identifies glass, ceramics and inorganic materials; establishes material mapping, not equipment revenue.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Organic pigments are named commercial processing materials.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Organic pigments are named commercial processing materials.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Metal powders are named commercial processing materials.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Metal powders are named commercial processing materials.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Carbon is identified in the operator's commercial grinding portfolio.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Carbon is identified in the operator's commercial grinding portfolio.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Thermosetting resin supports a polymer-material category premise.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Thermosetting resin supports a polymer-material category premise.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Ink-related grinding establishes a commercial reference but does not resolve whole-formulation versus constituent duty.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Ink-related grinding establishes a commercial reference but does not resolve whole-formulation versus constituent duty.

13. Micronization / Grinding - A. Ebbecke Verfahrenstechnik AG
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Commercial contract-grinding coverage includes natural materials and food ingredients; processing fees are excluded from equipment value.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Commercial contract-grinding coverage includes natural materials and food ingredients; processing fees are excluded from equipment value.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Plastic granulates and resins establish material coverage, not downstream customers' equipment ownership.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Plastic granulates and resins establish material coverage, not downstream customers' equipment ownership.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operator-side food-processing reference supports establishment attribution rather than automatically assigning equipment to its customers.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operator-side food-processing reference supports establishment attribution rather than automatically assigning equipment to its customers.
14. Manufacturing Capabilities - Asbury Advanced Materials
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Own manufacturing disclosure identifies carbon-material grinding and micronization; supports the material-duty premise only.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own manufacturing disclosure identifies carbon-material grinding and micronization; supports the material-duty premise only.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Custom formulations and dispersions are commercial outputs, but joint whole-formulation milling remains unmeasured.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Custom formulations and dispersions are commercial outputs, but joint whole-formulation milling remains unmeasured.
15. Pyrum Innovations AG - Interim Group Report January 1 to June 30, 2025
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The purchaser's 2025 report records a grinding-plant installation associated with recovered carbon black; no downstream material revenue is counted.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The purchaser's 2025 report records a grinding-plant installation associated with recovered carbon black; no downstream material revenue is counted.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The report establishes an actual recovery-business equipment context, while the exact attributable mill expenditure remains undisclosed.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The report establishes an actual recovery-business equipment context, while the exact attributable mill expenditure remains undisclosed.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The disclosed commercial-site grinding installation supports Industrial Production classification.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The disclosed commercial-site grinding installation supports Industrial Production classification.

16. NRRI Advances Efficient Grinding Technology on the Iron Range
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The institution distinguishes a planned bench-scale purchase from its loaned pilot equipment; not a completed-sale census.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The institution distinguishes a planned bench-scale purchase from its loaned pilot equipment; not a completed-sale census.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The May xx.xx 2024 account identifies a loaned pilot stirred mill; unpaid placement is not counted as equipment-sale revenue.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The May xx.xx 2024 account identifies a loaned pilot stirred mill; unpaid placement is not counted as equipment-sale revenue.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operating research institute is distinct from its mining clients, supporting buyer/material separation.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operating research institute is distinct from its mining clients, supporting buyer/material separation.
17. Planetary Ball Mill PM 100 - RETSCH
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The PM xx.xx is marketed as a benchtop instrument, supporting the small-laboratory pool classification without establishing sales weight.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The PM xx.xx is marketed as a benchtop instrument, supporting the small-laboratory pool classification without establishing sales weight.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The individual-instrument offering supports a narrower equipment-supply alternative; package incidence remains modeled.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The individual-instrument offering supports a narrower equipment-supply alternative; package incidence remains modeled.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: PM xx.xx is a marketed benchtop planetary platform, supporting laboratory-category mapping rather than shipment or price weights. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: PM xx.xx is a marketed benchtop planetary platform, supporting laboratory-category mapping rather than shipment or price weights. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The product page advertises both dry and wet capability. Actual dual-state purchase inclusion remains an explicit model assumption. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The product page advertises both dry and wet capability. Actual dual-state purchase inclusion remains an explicit model assumption. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))

18. Jet Mill - Contract History CW2408170, CanadaBuys
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: A May xx.xx 2026 laboratory jet-mill award totals CAD xx.xx; a dated procurement check, not a 2025 shipment or global average price.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: A May xx.xx 2026 laboratory jet-mill award totals CAD xx.xx; a dated procurement check, not a 2025 shipment or global average price.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The record distinguishes Natural Resources Canada as buying organization from PSPC as contracting organization, supporting establishment attribution.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The record distinguishes Natural Resources Canada as buying organization from PSPC as contracting organization, supporting establishment attribution.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The jet-mill award totals CAD xx.xx and is dated May xx.xx 2026. It is a nearby-period laboratory purchasing comparator, not a 2025 recognized sale, and supplies neither a gas-jet subtype nor a definitive channel role. ([canadabuys.canada.ca](https://canadabuys.canada.ca/en/tender-opportunities/contract-history/cw2408170-xx.xx))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The jet-mill award totals CAD xx.xx and is dated May xx.xx 2026. It is a nearby-period laboratory purchasing comparator, not a 2025 recognized sale, and supplies neither a gas-jet subtype nor a definitive channel role. ([canadabuys.canada.ca](https://canadabuys.canada.ca/en/tender-opportunities/contract-history/cw2408170-xx.xx))
19. MFC Production Equipment - FiberLean
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The manufacturer's commercial offering targets pulp, paper and related establishments; it is not a measured industry sales share.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The manufacturer's commercial offering targets pulp, paper and related establishments; it is not a measured industry sales share.
20. Pulverizing Equipment - Coperion
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The broader portfolio names power-generation applications and separately lists ultrafine equipment; this limits, rather than verifies, the assumed qualifying power-buyer allocation.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The broader portfolio names power-generation applications and separately lists ultrafine equipment; this limits, rather than verifies, the assumed qualifying power-buyer allocation.
21. LG Energy Solution Releases 2025 Financial Results - January 29, 2026
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own 2025 revenue decline and dated 2026 capital-expenditure reduction target constrain battery-related equipment-adoption assumptions.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Existing-asset reuse strategy qualifies a direct downstream-demand-to-new-carbon-material-mill investment inference.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Buyer investment restraint constrains the relative application multiplier; upstream chemical attribution remains separately assumed.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own battery-manufacturer financial and investment plans provide a counter-test, not an ultrafine equipment purchasing total.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The January 2026 emphasis on reduced new investment qualifies automatic growth in broader equipment-package adoption.

22. UNSD Classification Detail - ISIC Rev.4, Class 3830: Materials Recovery
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The official classification distinguishes secondary-material recovery from manufacture of new final products; it supplies no equipment sales weight.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The official classification distinguishes secondary-material recovery from manufacture of new final products; it supplies no equipment sales weight.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Recovered-input use alone does not classify the equipment operator as a recovery establishment rather than a product manufacturer.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Recovered-input use alone does not classify the equipment operator as a recovery establishment rather than a product manufacturer.
23. Ultrafin Mill: Super Masscolloider, Masuko MKCA6-5J CE - University of Ljubljana
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The university inventories a laboratory ultrafine mill within wood science; the institutional operator is not a wood-products manufacturer.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The university inventories a laboratory ultrafine mill within wood science; the institutional operator is not a wood-products manufacturer.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The institutional inventory expressly identifies laboratory equipment, supporting deployment classification without establishing a purchase-year value.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The institutional inventory expressly identifies laboratory equipment, supporting deployment classification without establishing a purchase-year value.
24. Contract Manufacturing of Pharmaceuticals - YUKI GOSEI KOGYO CO., LTD.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operator distinguishes production jet mills from smaller equipment, supporting industrial deployment at a pharmaceutical contract manufacturer.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operator distinguishes production jet mills from smaller equipment, supporting industrial deployment at a pharmaceutical contract manufacturer.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The actual pharmaceutical manufacturing operator is distinct from customers outsourcing production; processing-service receipts remain excluded.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The actual pharmaceutical manufacturing operator is distinct from customers outsourcing production; processing-service receipts remain excluded.

25. Record year for Metso stirred mills as mining industry opts for energy-efficient comminution technology

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Metso reports more than twenty Vertimill sales in 2025 and approximately xx.xx cumulative stirred-mill deliveries. Broader application coverage prevents treating these as ultrafine-only annual shipments; they constrain the modeled stirred/mining allocation and forecast premise. ([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Metso reports more than twenty Vertimill sales in 2025 and approximately xx.xx cumulative stirred-mill deliveries. Broader application coverage prevents treating these as ultrafine-only annual shipments; they constrain the modeled stirred/mining allocation and forecast premise. ([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The disclosed stirred-equipment activity supports material Media Mills participation, not the final modeled parent share. ([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The disclosed stirred-equipment activity supports material Media Mills participation, not the final modeled parent share. ([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))

26. Bühler strengthens its market position

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Bühler reports xx.xx% Grinding & Dispersing order growth in 2025 against a xx.xx% decline in broader Advanced Materials orders. This is a mixed commercial leading indicator, not observed market-share growth. ([buhlergroup.com](https://www.buhlergroup.com/global/en/media/media-releases/b%C3%BChler-strengthens-its-marketposition.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Bühler reports xx.xx% Grinding & Dispersing order growth in 2025 against a xx.xx% decline in broader Advanced Materials orders. This is a mixed commercial leading indicator, not observed market-share growth. ([buhlergroup.com](https://www.buhlergroup.com/global/en/media/media-releases/b%C3%BChler-strengthens-its-marketposition.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The disclosed battery-related and other application orders constrain differentiated Media Mills forecast assumptions without converting orders directly to annual equipment revenue. ([buhlergroup.com](https://www.buhlergroup.com/global/en/media/media-releases/b%C3%BChler-strengthens-its-marketposition.html))

27. Management Greetings | HOSOKAWAMICRON CORPORATION

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Hosokawa reports FY2025 net sales of JPY xx.xx, down xx.xx%, and orders down xx.xx%. The diversified-company result challenges uniform purchasing acceleration and constrains, rather than directly measures, technology-mix assumptions. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/ir/management_policy/management_greetings.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Hosokawa reports FY2025 net sales of JPY xx.xx, down xx.xx%, and orders down xx.xx%. The diversified-company result challenges uniform purchasing acceleration and constrains, rather than directly measures, technology-mix assumptions. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/ir/management_policy/management_greetings.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The same broader financial contraction is counterevidence to assuming uniform Media Mills growth across suppliers; no corporate revenue is assigned directly to the category. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/ir/management_policy/management_greetings.html))

28. Details of micromeritics | HOSOKAWAMICRON CORPORATION

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Hosokawa identifies its AS spiral offering, supporting subtype mapping rather than a sales weight. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Hosokawa identifies its AS spiral offering, supporting subtype mapping rather than a sales weight. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The AFG/TFG counterjet offerings support the retained Opposed-Jet commercial mapping. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The AFG/TFG counterjet offerings support the retained Opposed-Jet commercial mapping. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The manufacturer identifies Innovomizer as a mechanical ultrafine offering; ordinary impact equipment is not automatically included. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The manufacturer identifies Innovomizer as a mechanical ultrafine offering; ordinary impact equipment is not automatically included. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

29. Grinding Equipment Manufacturer Supplier Factory, Grinding System | Longly

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: LONGLY discloses current annual capacity above 2,000 equipment units and commercial wet-grinding offerings. Capacity is bridged through explicitly assumed timing, utilization and eligible-product factors; it is not reported 2025 stirred-mill shipments. ([longlymill.com](https://www.longlymill.com/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: LONGLY discloses current annual capacity above 2,000 equipment units and commercial wet-grinding offerings. Capacity is bridged through explicitly assumed timing, utilization and eligible-product factors; it is not reported 2025 stirred-mill shipments. ([longlymill.com](https://www.longlymill.com/))

30. Ultra-Fine Grinding - Hosokawa Micron Malaysia

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The inspected ultrafine portfolio identifies AWM-F table-roller equipment, supporting the qualifying Roller Mills boundary, not its assumed counts or prices. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The inspected ultrafine portfolio identifies AWM-F table-roller equipment, supporting the qualifying Roller Mills boundary, not its assumed counts or prices. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Super Orion is a marketed rotary ball-mill constituent of the combined rotary/planetary category. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Super Orion is a marketed rotary ball-mill constituent of the combined rotary/planetary category. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: MJT is explicitly listed as a target-type offering, supporting precedence of the named platform over overlapping generic jet terminology. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: MJT is explicitly listed as a target-type offering, supporting precedence of the named platform over overlapping generic jet terminology. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

31. Loop Jet Mill - Consistency. Compliance. Engineered.

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The current named Loop Jet Mill listing establishes an offered commercial platform. It supports forecast category continuity, but does not disclose subtype revenue or prove 2025 sales. ([jetmillmfg.com](https://www.jetmillmfg.com/loop-jet-mill/))

32. SWECO Vibratory Grinding and Particle Size Reduction Equipment

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: SWECO markets Vibro-Energy grinding equipment with separate wet and wet/dry offerings. This supports commercial category and configuration mapping, not the modeled frequency of purchases. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: SWECO markets Vibro-Energy grinding equipment with separate wet and wet/dry offerings. This supports commercial category and configuration mapping, not the modeled frequency of purchases. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Named wet/dry models establish dual-state availability; they do not establish the exact supplied configuration or a market-wide value share. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Named wet/dry models establish dual-state availability; they do not establish the exact supplied configuration or a market-wide value share. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))

33. Fine-cutting mill with rotating classifying feature - the sensational new development!

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The September xx.xx 2014 own-product announcement establishes a pre-base-year SecoMy S cutting offering described for ultrafine commercial applications. It is category evidence, not annual equipment revenue. ([grinding.netzsch.com](https://grinding.netzsch.com/en/news/2014/fine-cutting-mill-with-rotating-classifying-feature-the-sensational-new-development))

34. NETZSCH SecoMy S - Precision Cutting Redefined!

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The August 2026 SecoMy S brochure confirms continuing commercial ultrafine-cutting positioning and system-supply availability. It supports category persistence, not the assumed forecast spending share. ([grinding.netzsch.com](https://grinding.netzsch.com/_Resources/Persistent/xx.xx/e/xx.xx/b/8e4b5adcfc16fcc2d83974f8080d614cce1a2c01/NETZSCH_Fine_Cutting_Mill_SecoMy_S_e.pdf))

35. Wet Milling and Dispersing Device - Star Burst - Sugino Corp.

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: SUGINO's Star Burst portfolio identifies wet-jet equipment across research and production purchasing contexts. Only milling-attributable supply is included; adjacent droplet-only or dispersion activity is not automatically counted. ([suginocorp.com](https://www.suginocorp.com/star-burst/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: SUGINO's Star Burst portfolio identifies wet-jet equipment across research and production purchasing contexts. Only milling-attributable supply is included; adjacent droplet-only or dispersion activity is not automatically counted. ([suginocorp.com](https://www.suginocorp.com/star-burst/))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The wet-jet offering supports wet-state classification within the joint value model, not the total Wet Grinding share. ([suginocorp.com](https://www.suginocorp.com/star-burst/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The wet-jet offering supports wet-state classification within the joint value model, not the total Wet Grinding share. ([suginocorp.com](https://www.suginocorp.com/star-burst/))

36. IBU-tec | Mills - Milling Technology for Dry and Wet Grinding

- Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operator table separately lists two dry opposed-jet units. This is an installed-inventory observation, not a shipment or revenue ratio. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
- Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operator table separately lists two dry opposed-jet units. This is an installed-inventory observation, not a shipment or revenue ratio. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
- Evidence informing base-year allocation inputs; displayed values and growth are calculated: Three wet agitator-bead units are separately inventoried, supporting state-specific commercial classification without using their count as a market weight. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
- Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Three wet agitator-bead units are separately inventoried, supporting state-specific commercial classification without using their count as a market weight. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))

37. Comminution - NTNU

- Evidence informing base-year allocation inputs; displayed values and growth are calculated: NTNU separately records wet/dry capability for stirred and planetary equipment; the inventory is not a representative value-share dataset. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
- Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: NTNU separately records wet/dry capability for stirred and planetary equipment; the inventory is not a representative value-share dataset. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
- Evidence informing base-year allocation inputs; displayed values and growth are calculated: The planetary equipment is recorded as batch, supporting a laboratory batch context without assuming all laboratories are batch-only. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
- Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The planetary equipment is recorded as batch, supporting a laboratory batch context without assuming all laboratories are batch-only. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
- Evidence informing base-year allocation inputs; displayed values and growth are calculated: The laboratory jet rig is recorded as continuous, independently challenging equivalence between continuous mode and industrial scale. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
- Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The laboratory jet rig is recorded as continuous, independently challenging equivalence between continuous mode and industrial scale. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))

38. Dry Batch Or Continuous Laboratory Mills - Union Process

- Evidence informing base-year allocation inputs; displayed values and growth are calculated: Union Process identifies SD-xx.xx as one laboratory offering for both batch and continuous service. Configuration-specific purchase inclusion and revenue are undisclosed. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))
- Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Union Process identifies SD-xx.xx as one laboratory offering for both batch and continuous service. Configuration-specific purchase inclusion and revenue are undisclosed. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))
- Evidence informing base-year allocation inputs; displayed values and growth are calculated: The same named offering advertises wet/dry capability, supporting a dual-state category premise rather than an observed adoption percentage. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))
- Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The same named offering advertises wet/dry capability, supporting a dual-state category premise rather than an observed adoption percentage. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))

39. Retsch Contact & Services - Contact Partners Worldwide

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: RETSCH describes a network including daughter companies. Manufacturer affiliation, rather than contact location, informs direct-route attribution. ([retsch.com](https://www.retsch.com/contact-services/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: RETSCH describes a network including daughter companies. Manufacturer affiliation, rather than contact location, informs direct-route attribution. ([retsch.com](https://www.retsch.com/contact-services/))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The network also includes trained distributors, establishing a resale-access premise but not distributor ownership roles or annual sales weights. ([retsch.com](https://www.retsch.com/contact-services/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The network also includes trained distributors, establishing a resale-access premise but not distributor ownership roles or annual sales weights. ([retsch.com](https://www.retsch.com/contact-services/))

40. HOSOKAWA ALPINE Aktiengesellschaft - Conditions of Sale 371_00 EN

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Hosokawa requires company confirmation of representatives' transactions and makes contractual scope authoritative. The terms support agency-role attribution, not the assumed agent percentage. ([hosokawa-alpine.com](https://www.hosokawa-alpine.com/fileadmin/allgemein/Legal/AGB/AGB_Verkaufsbedingungen_en_371_00.pdf))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Hosokawa requires company confirmation of representatives' transactions and makes contractual scope authoritative. The terms support agency-role attribution, not the assumed agent percentage. ([hosokawa-alpine.com](https://www.hosokawa-alpine.com/fileadmin/allgemein/Legal/AGB/AGB_Verkaufsbedingungen_en_371_00.pdf))

41. UNSD - ISIC Rev.5, Class 4610: Wholesale on a Fee or Contract Basis

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: ISIC Rev.xx.xx class xx.xx defines fee/commission intermediation without ownership, supporting a non-title-taking agency numerator distinct from goods supplied on own account. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: ISIC Rev.xx.xx class xx.xx defines fee/commission intermediation without ownership, supporting a non-title-taking agency numerator distinct from goods supplied on own account. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Own-account wholesale is excluded from the agency class, supporting the reseller/agent partition without supplying ultrafine-mill channel shares. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own-account wholesale is excluded from the agency class, supporting the reseller/agent partition without supplying ultrafine-mill channel shares. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))

42. ITDI-PB-2024-057 - Supply, Delivery, Installation and Commissioning of Ultra-fine Friction Grinder

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The 2024 friction-grinder procurement had a PHP xx.xx budget and failed with no bidder. It establishes a configured-package spending ceiling and commercial category, not a sale or a shipment count. ([notices.philgeps.gov.ph](https://notices.philgeps.gov.ph/GEPSNONPILOT/Tender/PrintableBidNoticeAbstractUI.aspx?refid=xx.xx))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The 2024 friction-grinder procurement had a PHP xx.xx budget and failed with no bidder. It establishes a configured-package spending ceiling and commercial category, not a sale or a shipment count. ([notices.philgeps.gov.ph](https://notices.philgeps.gov.ph/GEPSNONPILOT/Tender/PrintableBidNoticeAbstractUI.aspx?refid=xx.xx))

43. Bangko Sentral ng Pilipinas - Balance of Payments Report, Q4 2024

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The central bank reports a 2024 average of PHP xx.xx per USD. Dividing the failed PHP xx.xx procurement budget by this rate gives an approximately USD xx.xx comparison ceiling, not realized equipment revenue. ([bsp.gov.ph](https://www.bsp.gov.ph/Media_And_Research/Balance%20of%20Payments%20Report/2024/BOP_4qtr2024.pdf))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The central bank reports a 2024 average of PHP xx.xx per USD. Dividing the failed PHP xx.xx procurement budget by this rate gives an approximately USD xx.xx comparison ceiling, not realized equipment revenue. ([bsp.gov.ph](https://www.bsp.gov.ph/Media_And_Research/Balance%20of%20Payments%20Report/2024/BOP_4qtr2024.pdf))

15.3. North America

Table 195. North America Ultra Fine Grinding Mill Market, by Country growth contribution, 2025-2032

Category	2025 value (USD Million)	2032 value (USD Million)	Added value (USD Million)	2025 share (%)	2032 share (%)	Change (pp)	Growth share (%)	CAGR (%)
Canada	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mexico	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Unallocated / remaining scope	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United States	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Scope total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 196. North America Ultra Fine Grinding Mill Market Size, by Region, 2017-2040 (USD Million)

Region	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Canada	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mexico	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United States	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 197. North America Ultra Fine Grinding Mill Market Size, by Supply Scope, 2017-2040 (USD Million)

Supply Scope	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Integrated Milling Packages	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Standalone Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 198. North America Ultra Fine Grinding Mill Market Size, by Mill Technology, 2017-2040 (USD Million)

Mill Technology	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Cutting Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Disc and Colloid Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Gas-Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mechanical Impact Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Media Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Roller Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wet-Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 199. North America Ultra Fine Grinding Mill Market Size, by Media Mills, 2017-2040 (USD Million)

Media Mills	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Rotary and Planetary Ball Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Stirred Media Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Vibratory Media Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 200. North America Ultra Fine Grinding Mill Market Size, by Gas-Jet Mills, 2017-2040 (USD Million)

Gas-Jet Mills	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Loop Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Opposed-Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Spiral Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Target Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 201. North America Ultra Fine Grinding Mill Market Size, by Processed Material, 2017-2040 (USD Million)

Processed Material	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Biomass and Natural Ingredients	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Carbonaceous Materials	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Formulations and Composites	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Industrial Minerals	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Inorganic Chemicals, Ceramics, and Glass	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Metal Ores and Concentrates	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Metals and Alloys	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Organic Chemicals	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Polymers and Elastomers	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 202. North America Ultra Fine Grinding Mill Market Size, by Buyer Industry, 2017-2040 (USD Million)

Buyer Industry	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Chemical and Fuel Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Electrical and Electronic Product Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Food, Beverage, and Feed Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Glass, Ceramics, and Construction Materials Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Materials Recovery and Recycling	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Metals and Fabricated Metal Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mining and Mineral Processing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Pharmaceutical Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Power and Heat Generation	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Research, Education, and Testing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Rubber and Plastics Product Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wood, Pulp, and Paper Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Others	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 203. North America Ultra Fine Grinding Mill Market Size, by Deployment Scale, 2017-2040 (USD Million)

Deployment Scale	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Industrial Production	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Laboratory	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Pilot	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 204. North America Ultra Fine Grinding Mill Market Size, by Sales Channel, 2017-2040 (USD Million)

Sales Channel	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Agent-Mediated Sales	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Independent Reseller Sales	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Manufacturer-Direct Sales	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 205. North America Ultra Fine Grinding Mill Market Size, by Processing State, 2017-2040 (USD Million)

Processing State	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Dry Grinding	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wet and Dry Grinding	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wet Grinding	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 206. North America Ultra Fine Grinding Mill Market Size, by Operating Mode, 2017-2040 (USD Million)

Operating Mode	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Batch	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Batch and Continuous	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Continuous	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Sources & Evidence

1. Mach for mixing/kneading/crushing/grinding etc imports by country | 2024
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: 2024 gross machinery imports provide the purchasing-index input: U.S. HS xx.xx imports were USD xx.xx. These are broad machinery purchases, not ultrafine mill sales.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: 2024 gross machinery imports provide the purchasing-index input: U.S. HS xx.xx imports were USD xx.xx. These are broad machinery purchases, not ultrafine mill sales.
2. Crushing/grinding machines for earth/ stone/ore imports by country | 2024
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: 2024 mineral crushing/grinding imports supply the secondary purchasing-index input; they contain out-of-scope ordinary crushers and are not treated as qualifying market revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: 2024 mineral crushing/grinding imports supply the secondary purchasing-index input; they contain out-of-scope ordinary crushers and are not treated as qualifying market revenue.

3. World Manufacturing Production and Trade, Quarter IV 2025
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The report's mixed North American manufacturing conditions constrain a uniform high-growth assumption; output is not equated with mill purchasing.
4. Business Unit Grinding & Dispersing - NETZSCH
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Documented U.S. production and local commercial operations support an explicit, uncertain domestic-supply bridge rather than treating imports as the entire numerator.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Documented U.S. production and local commercial operations support an explicit, uncertain domestic-supply bridge rather than treating imports as the entire numerator.
5. Methodology - UNIDO Industrial Analytics Platform
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The methodology notes that U.S. trade coverage includes Puerto Rico, reinforcing that the national purchasing proxy must not be renormalized to the xx.xx-state inventory.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The methodology notes that U.S. trade coverage includes Puerto Rico, reinforcing that the national purchasing proxy must not be renormalized to the xx.xx-state inventory.
6. Hosokawa Micron - FY2025 Financial Results Presentation, November 25, 2025 (Japanese)
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; material attribution modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; material attribution modeled.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; establishment attribution modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; establishment attribution modeled.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; buyer attribution assumed.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; buyer attribution assumed.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; qualifying power attribution unverified.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; qualifying power attribution unverified.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; institutional attribution assumed.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; institutional attribution assumed.

7. Metso Receives Order for Grinding Mills to a Copper Project in Africa
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Approximately EUR xx.xx 2024 HIGmill order includes auxiliaries and services; a package-scale anchor, not recognized annual revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Approximately EUR xx.xx 2024 HIGmill order includes auxiliaries and services; a package-scale anchor, not recognized annual revenue.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The copper-project award establishes an ore/concentrate commercial purchasing context.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The copper-project award establishes an ore/concentrate commercial purchasing context.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The award concerns an African mining project; it does not disclose the global mining-buyer share.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The award concerns an African mining project; it does not disclose the global mining-buyer share.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Large industrial equipment procurement supports the production-scale category premise.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Large industrial equipment procurement supports the production-scale category premise.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The August xx.xx 2024 announcement records an approximately EUR xx.xx HIGmill order including auxiliaries and services. It anchors package-level commercial materiality, not a mill unit price or 2025 recognized revenue. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The August xx.xx 2024 announcement records an approximately EUR xx.xx HIGmill order including auxiliaries and services. It anchors package-level commercial materiality, not a mill unit price or 2025 recognized revenue. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The stirred-package order supports the Media Mills value-weight model and continuing commercial-demand premise, with order-to-revenue timing unresolved. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The stirred-package order supports the Media Mills value-weight model and continuing commercial-demand premise, with order-to-revenue timing unresolved. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
8. HIGmill Plant - Metso
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Standalone marketing terminology does not establish the study's Standalone Mills equipment scope.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Standalone marketing terminology does not establish the study's Standalone Mills equipment scope.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: HIGmill Plant includes pre-engineered auxiliary modules, supporting classification as an equipment package.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: HIGmill Plant includes pre-engineered auxiliary modules, supporting classification as an equipment package.

9. IsaMill - About, Technology Partnership and Engineering
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Delivery alternatives permit mill-only supply or additional auxiliary equipment; actual equipment scope determines attribution.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Delivery alternatives permit mill-only supply or additional auxiliary equipment; actual equipment scope determines attribution.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Modular auxiliary-inclusive and turnkey alternatives support differentiated package scope, without proving a global adoption percentage.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Modular auxiliary-inclusive and turnkey alternatives support differentiated package scope, without proving a global adoption percentage.
10. Commission Processing - NIPPON COKE & ENGINEERING CO., LTD.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Own commercial processing portfolio identifies glass, ceramics and inorganic materials; establishes material mapping, not equipment revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own commercial processing portfolio identifies glass, ceramics and inorganic materials; establishes material mapping, not equipment revenue.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Organic pigments are named commercial processing materials.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Organic pigments are named commercial processing materials.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Metal powders are named commercial processing materials.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Metal powders are named commercial processing materials.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Carbon is identified in the operator's commercial grinding portfolio.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Carbon is identified in the operator's commercial grinding portfolio.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Thermosetting resin supports a polymer-material category premise.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Thermosetting resin supports a polymer-material category premise.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Ink-related grinding establishes a commercial reference but does not resolve whole-formulation versus constituent duty.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Ink-related grinding establishes a commercial reference but does not resolve whole-formulation versus constituent duty.

11. Micronization / Grinding - A. Ebbecke Verfahrenstechnik AG
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Commercial contract-grinding coverage includes natural materials and food ingredients; processing fees are excluded from equipment value.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Commercial contract-grinding coverage includes natural materials and food ingredients; processing fees are excluded from equipment value.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Plastic granulates and resins establish material coverage, not downstream customers' equipment ownership.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Plastic granulates and resins establish material coverage, not downstream customers' equipment ownership.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operator-side food-processing reference supports establishment attribution rather than automatically assigning equipment to its customers.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operator-side food-processing reference supports establishment attribution rather than automatically assigning equipment to its customers.
12. Manufacturing Capabilities - Asbury Advanced Materials
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Own manufacturing disclosure identifies carbon-material grinding and micronization; supports the material-duty premise only.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own manufacturing disclosure identifies carbon-material grinding and micronization; supports the material-duty premise only.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Custom formulations and dispersions are commercial outputs, but joint whole-formulation milling remains unmeasured.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Custom formulations and dispersions are commercial outputs, but joint whole-formulation milling remains unmeasured.
13. Pyrum Innovations AG - Interim Group Report January 1 to June 30, 2025
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The purchaser's 2025 report records a grinding-plant installation associated with recovered carbon black; no downstream material revenue is counted.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The purchaser's 2025 report records a grinding-plant installation associated with recovered carbon black; no downstream material revenue is counted.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The report establishes an actual recovery-business equipment context, while the exact attributable mill expenditure remains undisclosed.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The report establishes an actual recovery-business equipment context, while the exact attributable mill expenditure remains undisclosed.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The disclosed commercial-site grinding installation supports Industrial Production classification.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The disclosed commercial-site grinding installation supports Industrial Production classification.

14. NRRI Advances Efficient Grinding Technology on the Iron Range
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The institution distinguishes a planned bench-scale purchase from its loaned pilot equipment; not a completed-sale census.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The institution distinguishes a planned bench-scale purchase from its loaned pilot equipment; not a completed-sale census.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The May xx.xx 2024 account identifies a loaned pilot stirred mill; unpaid placement is not counted as equipment-sale revenue.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The May xx.xx 2024 account identifies a loaned pilot stirred mill; unpaid placement is not counted as equipment-sale revenue.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operating research institute is distinct from its mining clients, supporting buyer/material separation.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operating research institute is distinct from its mining clients, supporting buyer/material separation.
15. Planetary Ball Mill PM 100 - RETSCH
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The PM xx.xx is marketed as a benchtop instrument, supporting the small-laboratory pool classification without establishing sales weight.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The PM xx.xx is marketed as a benchtop instrument, supporting the small-laboratory pool classification without establishing sales weight.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The individual-instrument offering supports a narrower equipment-supply alternative; package incidence remains modeled.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The individual-instrument offering supports a narrower equipment-supply alternative; package incidence remains modeled.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: PM xx.xx is a marketed benchtop planetary platform, supporting laboratory-category mapping rather than shipment or price weights. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: PM xx.xx is a marketed benchtop planetary platform, supporting laboratory-category mapping rather than shipment or price weights. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The product page advertises both dry and wet capability. Actual dual-state purchase inclusion remains an explicit model assumption. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The product page advertises both dry and wet capability. Actual dual-state purchase inclusion remains an explicit model assumption. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))

16. Jet Mill - Contract History CW2408170, CanadaBuys
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: A May xx.xx 2026 laboratory jet-mill award totals CAD xx.xx; a dated procurement check, not a 2025 shipment or global average price.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: A May xx.xx 2026 laboratory jet-mill award totals CAD xx.xx; a dated procurement check, not a 2025 shipment or global average price.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The record distinguishes Natural Resources Canada as buying organization from PSPC as contracting organization, supporting establishment attribution.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The record distinguishes Natural Resources Canada as buying organization from PSPC as contracting organization, supporting establishment attribution.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The jet-mill award totals CAD xx.xx and is dated May xx.xx 2026. It is a nearby-period laboratory purchasing comparator, not a 2025 recognized sale, and supplies neither a gas-jet subtype nor a definitive channel role. ([canadabuys.canada.ca](https://canadabuys.canada.ca/en/tender-opportunities/contract-history/cw2408170-xx.xx))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The jet-mill award totals CAD xx.xx and is dated May xx.xx 2026. It is a nearby-period laboratory purchasing comparator, not a 2025 recognized sale, and supplies neither a gas-jet subtype nor a definitive channel role. ([canadabuys.canada.ca](https://canadabuys.canada.ca/en/tender-opportunities/contract-history/cw2408170-xx.xx))
17. MFC Production Equipment - FiberLean
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The manufacturer's commercial offering targets pulp, paper and related establishments; it is not a measured industry sales share.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The manufacturer's commercial offering targets pulp, paper and related establishments; it is not a measured industry sales share.
18. Pulverizing Equipment - Coperion
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The broader portfolio names power-generation applications and separately lists ultrafine equipment; this limits, rather than verifies, the assumed qualifying power-buyer allocation.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The broader portfolio names power-generation applications and separately lists ultrafine equipment; this limits, rather than verifies, the assumed qualifying power-buyer allocation.
19. LG Energy Solution Releases 2025 Financial Results - January 29, 2026
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own 2025 revenue decline and dated 2026 capital-expenditure reduction target constrain battery-related equipment-adoption assumptions.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Existing-asset reuse strategy qualifies a direct downstream-demand-to-new-carbon-material-mill investment inference.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Buyer investment restraint constrains the relative application multiplier; upstream chemical attribution remains separately assumed.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own battery-manufacturer financial and investment plans provide a counter-test, not an ultrafine equipment purchasing total.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The January 2026 emphasis on reduced new investment qualifies automatic growth in broader equipment-package adoption.

20. UNSD Classification Detail - ISIC Rev.4, Class 3830: Materials Recovery
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The official classification distinguishes secondary-material recovery from manufacture of new final products; it supplies no equipment sales weight.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The official classification distinguishes secondary-material recovery from manufacture of new final products; it supplies no equipment sales weight.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Recovered-input use alone does not classify the equipment operator as a recovery establishment rather than a product manufacturer.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Recovered-input use alone does not classify the equipment operator as a recovery establishment rather than a product manufacturer.
21. Ultrafin Mill: Super Masscolloider, Masuko MKCA6-5J CE - University of Ljubljana
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The university inventories a laboratory ultrafine mill within wood science; the institutional operator is not a wood-products manufacturer.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The university inventories a laboratory ultrafine mill within wood science; the institutional operator is not a wood-products manufacturer.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The institutional inventory expressly identifies laboratory equipment, supporting deployment classification without establishing a purchase-year value.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The institutional inventory expressly identifies laboratory equipment, supporting deployment classification without establishing a purchase-year value.
22. Contract Manufacturing of Pharmaceuticals - YUKI GOSEI KOGYO CO., LTD.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operator distinguishes production jet mills from smaller equipment, supporting industrial deployment at a pharmaceutical contract manufacturer.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operator distinguishes production jet mills from smaller equipment, supporting industrial deployment at a pharmaceutical contract manufacturer.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The actual pharmaceutical manufacturing operator is distinct from customers outsourcing production; processing-service receipts remain excluded.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The actual pharmaceutical manufacturing operator is distinct from customers outsourcing production; processing-service receipts remain excluded.

23. Record year for Metso stirred mills as mining industry opts for energy-efficient comminution technology

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Metso reports more than twenty Vertimill sales in 2025 and approximately xx.xx cumulative stirred-mill deliveries. Broader application coverage prevents treating these as ultrafine-only annual shipments; they constrain the modeled stirred/mining allocation and forecast premise.
([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Metso reports more than twenty Vertimill sales in 2025 and approximately xx.xx cumulative stirred-mill deliveries. Broader application coverage prevents treating these as ultrafine-only annual shipments; they constrain the modeled stirred/mining allocation and forecast premise.
([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The disclosed stirred-equipment activity supports material Media Mills participation, not the final modeled parent share.
([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The disclosed stirred-equipment activity supports material Media Mills participation, not the final modeled parent share.
([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))

24. Bühler strengthens its market position

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Bühler reports xx.xx% Grinding & Dispersing order growth in 2025 against a xx.xx% decline in broader Advanced Materials orders. This is a mixed commercial leading indicator, not observed market-share growth.
([buhlergroup.com](https://www.buhlergroup.com/global/en/media/media-releases/b%C3%BChler-strengthens-its-marketposition.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Bühler reports xx.xx% Grinding & Dispersing order growth in 2025 against a xx.xx% decline in broader Advanced Materials orders. This is a mixed commercial leading indicator, not observed market-share growth.
([buhlergroup.com](https://www.buhlergroup.com/global/en/media/media-releases/b%C3%BChler-strengthens-its-marketposition.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The disclosed battery-related and other application orders constrain differentiated Media Mills forecast assumptions without converting orders directly to annual equipment revenue.
([buhlergroup.com](https://www.buhlergroup.com/global/en/media/media-releases/b%C3%BChler-strengthens-its-marketposition.html))

25. Management Greetings | HOSOKAWAMICRON CORPORATION

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Hosokawa reports FY2025 net sales of JPY xx.xx, down xx.xx%, and orders down xx.xx%. The diversified-company result challenges uniform purchasing acceleration and constrains, rather than directly measures, technology-mix assumptions.
([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/ir/management_policy/management_greetings.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Hosokawa reports FY2025 net sales of JPY xx.xx, down xx.xx%, and orders down xx.xx%. The diversified-company result challenges uniform purchasing acceleration and constrains, rather than directly measures, technology-mix assumptions.
([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/ir/management_policy/management_greetings.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The same broader financial contraction is counterevidence to assuming uniform Media Mills growth across suppliers; no corporate revenue is assigned directly to the category.
([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/ir/management_policy/management_greetings.html))

26. Details of micromeritics | HOSOKAWAMICRON CORPORATION

- Evidence informing base-year allocation inputs; displayed values and growth are calculated: Hosokawa identifies its AS spiral offering, supporting subtype mapping rather than a sales weight. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))
- Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Hosokawa identifies its AS spiral offering, supporting subtype mapping rather than a sales weight. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))
- Evidence informing base-year allocation inputs; displayed values and growth are calculated: The AFG/TFG counterjet offerings support the retained Opposed-Jet commercial mapping. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))
- Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The AFG/TFG counterjet offerings support the retained Opposed-Jet commercial mapping. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))
- Evidence informing base-year allocation inputs; displayed values and growth are calculated: The manufacturer identifies Innovomizer as a mechanical ultrafine offering; ordinary impact equipment is not automatically included. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))
- Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The manufacturer identifies Innovomizer as a mechanical ultrafine offering; ordinary impact equipment is not automatically included. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

27. Grinding Equipment Manufacturer Supplier Factory, Grinding System | Longly

- Evidence informing base-year allocation inputs; displayed values and growth are calculated: LONGLY discloses current annual capacity above 2,000 equipment units and commercial wet-grinding offerings. Capacity is bridged through explicitly assumed timing, utilization and eligible-product factors; it is not reported 2025 stirred-mill shipments. ([longlymill.com](https://www.longlymill.com/))
- Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: LONGLY discloses current annual capacity above 2,000 equipment units and commercial wet-grinding offerings. Capacity is bridged through explicitly assumed timing, utilization and eligible-product factors; it is not reported 2025 stirred-mill shipments. ([longlymill.com](https://www.longlymill.com/))

28. Ultra-Fine Grinding - Hosokawa Micron Malaysia

- Evidence informing base-year allocation inputs; displayed values and growth are calculated: The inspected ultrafine portfolio identifies AWM-F table-roller equipment, supporting the qualifying Roller Mills boundary, not its assumed counts or prices. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))
- Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The inspected ultrafine portfolio identifies AWM-F table-roller equipment, supporting the qualifying Roller Mills boundary, not its assumed counts or prices. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))
- Evidence informing base-year allocation inputs; displayed values and growth are calculated: Super Orion is a marketed rotary ball-mill constituent of the combined rotary/planetary category. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))
- Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Super Orion is a marketed rotary ball-mill constituent of the combined rotary/planetary category. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))
- Evidence informing base-year allocation inputs; displayed values and growth are calculated: MJT is explicitly listed as a target-type offering, supporting precedence of the named platform over overlapping generic jet terminology. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))
- Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: MJT is explicitly listed as a target-type offering, supporting precedence of the named platform over overlapping generic jet terminology. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

29. Loop Jet Mill - Consistency. Compliance. Engineered.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The current named Loop Jet Mill listing establishes an offered commercial platform. It supports forecast category continuity, but does not disclose subtype revenue or prove 2025 sales. ([jetmillmfg.com](https://www.jetmillmfg.com/loop-jet-mill/))
30. SWECO Vibratory Grinding and Particle Size Reduction Equipment
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: SWECO markets Vibro-Energy grinding equipment with separate wet and wet/dry offerings. This supports commercial category and configuration mapping, not the modeled frequency of purchases. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: SWECO markets Vibro-Energy grinding equipment with separate wet and wet/dry offerings. This supports commercial category and configuration mapping, not the modeled frequency of purchases. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Named wet/dry models establish dual-state availability; they do not establish the exact supplied configuration or a market-wide value share. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Named wet/dry models establish dual-state availability; they do not establish the exact supplied configuration or a market-wide value share. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))
31. Fine-cutting mill with rotating classifying feature - the sensational new development!
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The September xx.xx 2014 own-product announcement establishes a pre-base-year SecoMy S cutting offering described for ultrafine commercial applications. It is category evidence, not annual equipment revenue. ([grinding.netzsch.com](https://grinding.netzsch.com/en/news/2014/fine-cutting-mill-with-rotating-classifying-feature-the-sensational-new-development))
32. NETZSCH SecoMy S - Precision Cutting Redefined!
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The August 2026 SecoMy S brochure confirms continuing commercial ultrafine-cutting positioning and system-supply availability. It supports category persistence, not the assumed forecast spending share. ([grinding.netzsch.com](https://grinding.netzsch.com/_Resources/Persistent/xx.xx/e/xx.xx/b/8e4b5adcfc16fcc2d83974f8080d614cce1a2c01/NETZSCH_Fine_Cutting_Mill_SecoMy_S_e.pdf))
33. Wet Milling and Dispersing Device - Star Burst - Sugino Corp.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: SUGINO's Star Burst portfolio identifies wet-jet equipment across research and production purchasing contexts. Only milling-attributable supply is included; adjacent droplet-only or dispersion activity is not automatically counted. ([suginocorp.com](https://www.suginocorp.com/star-burst/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: SUGINO's Star Burst portfolio identifies wet-jet equipment across research and production purchasing contexts. Only milling-attributable supply is included; adjacent droplet-only or dispersion activity is not automatically counted. ([suginocorp.com](https://www.suginocorp.com/star-burst/))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The wet-jet offering supports wet-state classification within the joint value model, not the total Wet Grinding share. ([suginocorp.com](https://www.suginocorp.com/star-burst/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The wet-jet offering supports wet-state classification within the joint value model, not the total Wet Grinding share. ([suginocorp.com](https://www.suginocorp.com/star-burst/))

34. IBU-tec | Mills - Milling Technology for Dry and Wet Grinding
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operator table separately lists two dry opposed-jet units. This is an installed-inventory observation, not a shipment or revenue ratio. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operator table separately lists two dry opposed-jet units. This is an installed-inventory observation, not a shipment or revenue ratio. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Three wet agitator-bead units are separately inventoried, supporting state-specific commercial classification without using their count as a market weight. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Three wet agitator-bead units are separately inventoried, supporting state-specific commercial classification without using their count as a market weight. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
35. Comminution - NTNU
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: NTNU separately records wet/dry capability for stirred and planetary equipment; the inventory is not a representative value-share dataset. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: NTNU separately records wet/dry capability for stirred and planetary equipment; the inventory is not a representative value-share dataset. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The planetary equipment is recorded as batch, supporting a laboratory batch context without assuming all laboratories are batch-only. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The planetary equipment is recorded as batch, supporting a laboratory batch context without assuming all laboratories are batch-only. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The laboratory jet rig is recorded as continuous, independently challenging equivalence between continuous mode and industrial scale. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The laboratory jet rig is recorded as continuous, independently challenging equivalence between continuous mode and industrial scale. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
36. Dry Batch Or Continuous Laboratory Mills - Union Process
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Union Process identifies SD-xx.xx as one laboratory offering for both batch and continuous service. Configuration-specific purchase inclusion and revenue are undisclosed. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Union Process identifies SD-xx.xx as one laboratory offering for both batch and continuous service. Configuration-specific purchase inclusion and revenue are undisclosed. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The same named offering advertises wet/dry capability, supporting a dual-state category premise rather than an observed adoption percentage. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The same named offering advertises wet/dry capability, supporting a dual-state category premise rather than an observed adoption percentage. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))

37. Retsch Contact & Services - Contact Partners Worldwide

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: RETSCH describes a network including daughter companies. Manufacturer affiliation, rather than contact location, informs direct-route attribution. ([retsch.com](https://www.retsch.com/contact-services/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: RETSCH describes a network including daughter companies. Manufacturer affiliation, rather than contact location, informs direct-route attribution. ([retsch.com](https://www.retsch.com/contact-services/))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The network also includes trained distributors, establishing a resale-access premise but not distributor ownership roles or annual sales weights. ([retsch.com](https://www.retsch.com/contact-services/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The network also includes trained distributors, establishing a resale-access premise but not distributor ownership roles or annual sales weights. ([retsch.com](https://www.retsch.com/contact-services/))

38. HOSOKAWA ALPINE Aktiengesellschaft - Conditions of Sale 371_00 EN

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Hosokawa requires company confirmation of representatives' transactions and makes contractual scope authoritative. The terms support agency-role attribution, not the assumed agent percentage. ([hosokawa-alpine.com](https://www.hosokawa-alpine.com/fileadmin/allgemein/Legal/AGB/AGB_Verkaufsbedingungen_en_371_00.pdf))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Hosokawa requires company confirmation of representatives' transactions and makes contractual scope authoritative. The terms support agency-role attribution, not the assumed agent percentage. ([hosokawa-alpine.com](https://www.hosokawa-alpine.com/fileadmin/allgemein/Legal/AGB/AGB_Verkaufsbedingungen_en_371_00.pdf))

39. UNSD - ISIC Rev.5, Class 4610: Wholesale on a Fee or Contract Basis

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: ISIC Rev.xx.xx class xx.xx defines fee/commission intermediation without ownership, supporting a non-title-taking agency numerator distinct from goods supplied on own account. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: ISIC Rev.xx.xx class xx.xx defines fee/commission intermediation without ownership, supporting a non-title-taking agency numerator distinct from goods supplied on own account. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Own-account wholesale is excluded from the agency class, supporting the reseller/agent partition without supplying ultrafine-mill channel shares. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own-account wholesale is excluded from the agency class, supporting the reseller/agent partition without supplying ultrafine-mill channel shares. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))

40. ITDI-PB-2024-057 - Supply, Delivery, Installation and Commissioning of Ultra-fine Friction Grinder

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The 2024 friction-grinder procurement had a PHP xx.xx budget and failed with no bidder. It establishes a configured-package spending ceiling and commercial category, not a sale or a shipment count. ([notices.philgeps.gov.ph](https://notices.philgeps.gov.ph/GEPSNONPILOT/Tender/PrintableBidNoticeAbstractUI.aspx?refid=xx.xx))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The 2024 friction-grinder procurement had a PHP xx.xx budget and failed with no bidder. It establishes a configured-package spending ceiling and commercial category, not a sale or a shipment count. ([notices.philgeps.gov.ph](https://notices.philgeps.gov.ph/GEPSNONPILOT/Tender/PrintableBidNoticeAbstractUI.aspx?refid=xx.xx))

41. Bangko Sentral ng Pilipinas - Balance of Payments Report, Q4 2024
· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The central bank reports a 2024 average of PHP xx.xx per USD. Dividing the failed PHP xx.xx procurement budget by this rate gives an approximately USD xx.xx comparison ceiling, not realized equipment revenue. ([bsp.gov.ph](https://www.bsp.gov.ph/Media_And_Research/Balance%20of%20Payments%20Report/2024/BOP_4qtr2024.pdf))
· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The central bank reports a 2024 average of PHP xx.xx per USD. Dividing the failed PHP xx.xx procurement budget by this rate gives an approximately USD xx.xx comparison ceiling, not realized equipment revenue. ([bsp.gov.ph](https://www.bsp.gov.ph/Media_And_Research/Balance%20of%20Payments%20Report/2024/BOP_4qtr2024.pdf))

15.4. Latin America

Table 207. Latin America Ultra Fine Grinding Mill Market, by Country growth contribution, 2025-2032

Category	2025 value (USD Million)	2032 value (USD Million)	Added value (USD Million)	2025 share (%)	2032 share (%)	Change (pp)	Growth share (%)	CAGR (%)
Argentina	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Brazil	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Chile	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Colombia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Peru	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Unallocated / remaining scope	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Scope total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 208. Latin America Ultra Fine Grinding Mill Market Size, by Region, 2017-2040 (USD Million)

Region	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Argentina	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Brazil	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Chile	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Colombia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Peru	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Others	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 209. Latin America Ultra Fine Grinding Mill Market Size, by Supply Scope, 2017-2040 (USD Million)

Supply Scope	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Integrated Milling Packages	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Standalone Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 210. Latin America Ultra Fine Grinding Mill Market Size, by Mill Technology, 2017-2040 (USD Million)

Mill Technology	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Cutting Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Disc and Colloid Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Gas-Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mechanical Impact Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Media Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Roller Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wet-Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 211. Latin America Ultra Fine Grinding Mill Market Size, by Media Mills, 2017-2040 (USD Million)

Media Mills	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Rotary and Planetary Ball Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Stirred Media Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Vibratory Media Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 212. Latin America Ultra Fine Grinding Mill Market Size, by Gas-Jet Mills, 2017-2040 (USD Million)

Gas-Jet Mills	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Loop Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Opposed-Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Spiral Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Target Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 213. Latin America Ultra Fine Grinding Mill Market Size, by Processed Material, 2017-2040 (USD Million)

Processed Material	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Biomass and Natural Ingredients	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Carbonaceous Materials	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Formulations and Composites	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Industrial Minerals	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Inorganic Chemicals, Ceramics, and Glass	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Metal Ores and Concentrates	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Metals and Alloys	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Organic Chemicals	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Polymers and Elastomers	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 214. Latin America Ultra Fine Grinding Mill Market Size, by Buyer Industry, 2017-2040 (USD Million)

Buyer Industry	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Chemical and Fuel Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Electrical and Electronic Product Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Food, Beverage, and Feed Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Glass, Ceramics, and Construction Materials Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Materials Recovery and Recycling	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Metals and Fabricated Metal Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mining and Mineral Processing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Pharmaceutical Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Power and Heat Generation	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Research, Education, and Testing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Rubber and Plastics Product Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wood, Pulp, and Paper Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Others	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 215. Latin America Ultra Fine Grinding Mill Market Size, by Deployment Scale, 2017-2040 (USD Million)

Deployment Scale	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Industrial Production	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Laboratory	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Pilot	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 216. Latin America Ultra Fine Grinding Mill Market Size, by Sales Channel, 2017-2040 (USD Million)

Sales Channel	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Agent-Mediated Sales	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Independent Reseller Sales	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Manufacturer-Direct Sales	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 217. Latin America Ultra Fine Grinding Mill Market Size, by Processing State, 2017-2040 (USD Million)

Processing State	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Dry Grinding	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wet and Dry Grinding	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wet Grinding	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 218. Latin America Ultra Fine Grinding Mill Market Size, by Operating Mode, 2017-2040 (USD Million)

Operating Mode	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Batch	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Batch and Continuous	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Continuous	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Sources & Evidence

1. Mach for mixing/kneading/crushing/grinding etc imports by country | 2024
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Country observations include Brazil USD xx.xx and Argentina USD xx.xx under HS xx.xx supporting the regional model's purchasing inputs.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country observations include Brazil USD xx.xx and Argentina USD xx.xx under HS xx.xx supporting the regional model's purchasing inputs.

2. Crushing/grinding machines for earth/ stone/ore imports by country | 2024
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Country-level mineral machinery import observations support the Latin American purchasing basket and its explicitly modeled mining/package adjustments.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country-level mineral machinery import observations support the Latin American purchasing basket and its explicitly modeled mining/package adjustments.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Chile's 2024 HS xx.xx imports were USD xx.xx; the larger qualifying package-ticket factor is an assumption, not a disclosed import statistic.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Chile's 2024 HS xx.xx imports were USD xx.xx; the larger qualifying package-ticket factor is an assumption, not a disclosed import statistic.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Peru's 2024 HS xx.xx imports were USD xx.xx, an input to the modeled mining-oriented purchasing bridge.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Peru's 2024 HS xx.xx imports were USD xx.xx, an input to the modeled mining-oriented purchasing bridge.
3. World Manufacturing Production and Trade, Quarter IV 2025
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Recent Latin American manufacturing weakness is counterevidence to immediate region-wide acceleration; forecast equipment factors remain conditional.
4. Business Unit Grinding & Dispersing - NETZSCH
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Brazilian local production and commercial operations qualify reliance on imports alone, without establishing the assumed domestic sales amount.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Brazilian local production and commercial operations qualify reliance on imports alone, without establishing the assumed domestic sales amount.
5. Metso’s service center expansion in Antofagasta elevates support for Chile’s mining industry
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The completed 2025 Antofagasta expansion adds xx.xx square metres to reach xx.xx and includes HIG mill repair/refurbishment. This supports an installed-asset retention counterforce, not new-equipment revenue or region-wide service coverage.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The completed 2025 Antofagasta expansion adds xx.xx square metres to reach xx.xx and includes HIG mill repair/refurbishment. This supports an installed-asset retention counterforce, not new-equipment revenue or region-wide service coverage.

6. Hosokawa Micron - FY2025 Financial Results Presentation, November 25, 2025 (Japanese)
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; material attribution modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; material attribution modeled.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; establishment attribution modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; establishment attribution modeled.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; buyer attribution assumed.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; buyer attribution assumed.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; qualifying power attribution unverified.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; qualifying power attribution unverified.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; institutional attribution assumed.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; institutional attribution assumed.

7. Metso Receives Order for Grinding Mills to a Copper Project in Africa
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Approximately EUR xx.xx 2024 HIGmill order includes auxiliaries and services; a package-scale anchor, not recognized annual revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Approximately EUR xx.xx 2024 HIGmill order includes auxiliaries and services; a package-scale anchor, not recognized annual revenue.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The copper-project award establishes an ore/concentrate commercial purchasing context.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The copper-project award establishes an ore/concentrate commercial purchasing context.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The award concerns an African mining project; it does not disclose the global mining-buyer share.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The award concerns an African mining project; it does not disclose the global mining-buyer share.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Large industrial equipment procurement supports the production-scale category premise.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Large industrial equipment procurement supports the production-scale category premise.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The August xx.xx 2024 announcement records an approximately EUR xx.xx HIGmill order including auxiliaries and services. It anchors package-level commercial materiality, not a mill unit price or 2025 recognized revenue. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The August xx.xx 2024 announcement records an approximately EUR xx.xx HIGmill order including auxiliaries and services. It anchors package-level commercial materiality, not a mill unit price or 2025 recognized revenue. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The stirred-package order supports the Media Mills value-weight model and continuing commercial-demand premise, with order-to-revenue timing unresolved. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The stirred-package order supports the Media Mills value-weight model and continuing commercial-demand premise, with order-to-revenue timing unresolved. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
8. HIGmill Plant - Metso
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Standalone marketing terminology does not establish the study's Standalone Mills equipment scope.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Standalone marketing terminology does not establish the study's Standalone Mills equipment scope.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: HIGmill Plant includes pre-engineered auxiliary modules, supporting classification as an equipment package.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: HIGmill Plant includes pre-engineered auxiliary modules, supporting classification as an equipment package.

9. IsaMill - About, Technology Partnership and Engineering
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Delivery alternatives permit mill-only supply or additional auxiliary equipment; actual equipment scope determines attribution.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Delivery alternatives permit mill-only supply or additional auxiliary equipment; actual equipment scope determines attribution.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Modular auxiliary-inclusive and turnkey alternatives support differentiated package scope, without proving a global adoption percentage.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Modular auxiliary-inclusive and turnkey alternatives support differentiated package scope, without proving a global adoption percentage.
10. Commission Processing - NIPPON COKE & ENGINEERING CO., LTD.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Own commercial processing portfolio identifies glass, ceramics and inorganic materials; establishes material mapping, not equipment revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own commercial processing portfolio identifies glass, ceramics and inorganic materials; establishes material mapping, not equipment revenue.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Organic pigments are named commercial processing materials.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Organic pigments are named commercial processing materials.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Metal powders are named commercial processing materials.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Metal powders are named commercial processing materials.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Carbon is identified in the operator's commercial grinding portfolio.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Carbon is identified in the operator's commercial grinding portfolio.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Thermosetting resin supports a polymer-material category premise.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Thermosetting resin supports a polymer-material category premise.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Ink-related grinding establishes a commercial reference but does not resolve whole-formulation versus constituent duty.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Ink-related grinding establishes a commercial reference but does not resolve whole-formulation versus constituent duty.

11. Micronization / Grinding - A. Ebbecke Verfahrenstechnik AG
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Commercial contract-grinding coverage includes natural materials and food ingredients; processing fees are excluded from equipment value.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Commercial contract-grinding coverage includes natural materials and food ingredients; processing fees are excluded from equipment value.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Plastic granulates and resins establish material coverage, not downstream customers' equipment ownership.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Plastic granulates and resins establish material coverage, not downstream customers' equipment ownership.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operator-side food-processing reference supports establishment attribution rather than automatically assigning equipment to its customers.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operator-side food-processing reference supports establishment attribution rather than automatically assigning equipment to its customers.
12. Manufacturing Capabilities - Asbury Advanced Materials
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Own manufacturing disclosure identifies carbon-material grinding and micronization; supports the material-duty premise only.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own manufacturing disclosure identifies carbon-material grinding and micronization; supports the material-duty premise only.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Custom formulations and dispersions are commercial outputs, but joint whole-formulation milling remains unmeasured.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Custom formulations and dispersions are commercial outputs, but joint whole-formulation milling remains unmeasured.
13. Pyrum Innovations AG - Interim Group Report January 1 to June 30, 2025
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The purchaser's 2025 report records a grinding-plant installation associated with recovered carbon black; no downstream material revenue is counted.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The purchaser's 2025 report records a grinding-plant installation associated with recovered carbon black; no downstream material revenue is counted.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The report establishes an actual recovery-business equipment context, while the exact attributable mill expenditure remains undisclosed.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The report establishes an actual recovery-business equipment context, while the exact attributable mill expenditure remains undisclosed.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The disclosed commercial-site grinding installation supports Industrial Production classification.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The disclosed commercial-site grinding installation supports Industrial Production classification.

14. NRRI Advances Efficient Grinding Technology on the Iron Range
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The institution distinguishes a planned bench-scale purchase from its loaned pilot equipment; not a completed-sale census.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The institution distinguishes a planned bench-scale purchase from its loaned pilot equipment; not a completed-sale census.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The May xx.xx 2024 account identifies a loaned pilot stirred mill; unpaid placement is not counted as equipment-sale revenue.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The May xx.xx 2024 account identifies a loaned pilot stirred mill; unpaid placement is not counted as equipment-sale revenue.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operating research institute is distinct from its mining clients, supporting buyer/material separation.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operating research institute is distinct from its mining clients, supporting buyer/material separation.
15. Planetary Ball Mill PM 100 - RETSCH
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The PM xx.xx is marketed as a benchtop instrument, supporting the small-laboratory pool classification without establishing sales weight.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The PM xx.xx is marketed as a benchtop instrument, supporting the small-laboratory pool classification without establishing sales weight.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The individual-instrument offering supports a narrower equipment-supply alternative; package incidence remains modeled.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The individual-instrument offering supports a narrower equipment-supply alternative; package incidence remains modeled.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: PM xx.xx is a marketed benchtop planetary platform, supporting laboratory-category mapping rather than shipment or price weights. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: PM xx.xx is a marketed benchtop planetary platform, supporting laboratory-category mapping rather than shipment or price weights. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The product page advertises both dry and wet capability. Actual dual-state purchase inclusion remains an explicit model assumption. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The product page advertises both dry and wet capability. Actual dual-state purchase inclusion remains an explicit model assumption. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))

16. Jet Mill - Contract History CW2408170, CanadaBuys
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: A May xx.xx 2026 laboratory jet-mill award totals CAD xx.xx; a dated procurement check, not a 2025 shipment or global average price.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: A May xx.xx 2026 laboratory jet-mill award totals CAD xx.xx; a dated procurement check, not a 2025 shipment or global average price.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The record distinguishes Natural Resources Canada as buying organization from PSPC as contracting organization, supporting establishment attribution.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The record distinguishes Natural Resources Canada as buying organization from PSPC as contracting organization, supporting establishment attribution.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The jet-mill award totals CAD xx.xx and is dated May xx.xx 2026. It is a nearby-period laboratory purchasing comparator, not a 2025 recognized sale, and supplies neither a gas-jet subtype nor a definitive channel role. ([canadabuys.canada.ca](https://canadabuys.canada.ca/en/tender-opportunities/contract-history/cw2408170-xx.xx))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The jet-mill award totals CAD xx.xx and is dated May xx.xx 2026. It is a nearby-period laboratory purchasing comparator, not a 2025 recognized sale, and supplies neither a gas-jet subtype nor a definitive channel role. ([canadabuys.canada.ca](https://canadabuys.canada.ca/en/tender-opportunities/contract-history/cw2408170-xx.xx))
17. MFC Production Equipment - FiberLean
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The manufacturer's commercial offering targets pulp, paper and related establishments; it is not a measured industry sales share.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The manufacturer's commercial offering targets pulp, paper and related establishments; it is not a measured industry sales share.
18. Pulverizing Equipment - Coperion
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The broader portfolio names power-generation applications and separately lists ultrafine equipment; this limits, rather than verifies, the assumed qualifying power-buyer allocation.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The broader portfolio names power-generation applications and separately lists ultrafine equipment; this limits, rather than verifies, the assumed qualifying power-buyer allocation.
19. LG Energy Solution Releases 2025 Financial Results - January 29, 2026
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own 2025 revenue decline and dated 2026 capital-expenditure reduction target constrain battery-related equipment-adoption assumptions.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Existing-asset reuse strategy qualifies a direct downstream-demand-to-new-carbon-material-mill investment inference.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Buyer investment restraint constrains the relative application multiplier; upstream chemical attribution remains separately assumed.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own battery-manufacturer financial and investment plans provide a counter-test, not an ultrafine equipment purchasing total.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The January 2026 emphasis on reduced new investment qualifies automatic growth in broader equipment-package adoption.

20. UNSD Classification Detail - ISIC Rev.4, Class 3830: Materials Recovery
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The official classification distinguishes secondary-material recovery from manufacture of new final products; it supplies no equipment sales weight.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The official classification distinguishes secondary-material recovery from manufacture of new final products; it supplies no equipment sales weight.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Recovered-input use alone does not classify the equipment operator as a recovery establishment rather than a product manufacturer.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Recovered-input use alone does not classify the equipment operator as a recovery establishment rather than a product manufacturer.
21. Ultrafin Mill: Super Masscolloider, Masuko MKCA6-5J CE - University of Ljubljana
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The university inventories a laboratory ultrafine mill within wood science; the institutional operator is not a wood-products manufacturer.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The university inventories a laboratory ultrafine mill within wood science; the institutional operator is not a wood-products manufacturer.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The institutional inventory expressly identifies laboratory equipment, supporting deployment classification without establishing a purchase-year value.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The institutional inventory expressly identifies laboratory equipment, supporting deployment classification without establishing a purchase-year value.
22. Contract Manufacturing of Pharmaceuticals - YUKI GOSEI KOGYO CO., LTD.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operator distinguishes production jet mills from smaller equipment, supporting industrial deployment at a pharmaceutical contract manufacturer.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operator distinguishes production jet mills from smaller equipment, supporting industrial deployment at a pharmaceutical contract manufacturer.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The actual pharmaceutical manufacturing operator is distinct from customers outsourcing production; processing-service receipts remain excluded.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The actual pharmaceutical manufacturing operator is distinct from customers outsourcing production; processing-service receipts remain excluded.

23. Record year for Metso stirred mills as mining industry opts for energy-efficient comminution technology

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Metso reports more than twenty Vertimill sales in 2025 and approximately xx.xx cumulative stirred-mill deliveries. Broader application coverage prevents treating these as ultrafine-only annual shipments; they constrain the modeled stirred/mining allocation and forecast premise.
([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Metso reports more than twenty Vertimill sales in 2025 and approximately xx.xx cumulative stirred-mill deliveries. Broader application coverage prevents treating these as ultrafine-only annual shipments; they constrain the modeled stirred/mining allocation and forecast premise.
([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The disclosed stirred-equipment activity supports material Media Mills participation, not the final modeled parent share.
([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The disclosed stirred-equipment activity supports material Media Mills participation, not the final modeled parent share.
([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))

24. Bühler strengthens its market position

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Bühler reports xx.xx% Grinding & Dispersing order growth in 2025 against a xx.xx% decline in broader Advanced Materials orders. This is a mixed commercial leading indicator, not observed market-share growth.
([buhlergroup.com](https://www.buhlergroup.com/global/en/media/media-releases/b%C3%BChler-strengthens-its-marketposition.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Bühler reports xx.xx% Grinding & Dispersing order growth in 2025 against a xx.xx% decline in broader Advanced Materials orders. This is a mixed commercial leading indicator, not observed market-share growth.
([buhlergroup.com](https://www.buhlergroup.com/global/en/media/media-releases/b%C3%BChler-strengthens-its-marketposition.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The disclosed battery-related and other application orders constrain differentiated Media Mills forecast assumptions without converting orders directly to annual equipment revenue.
([buhlergroup.com](https://www.buhlergroup.com/global/en/media/media-releases/b%C3%BChler-strengthens-its-marketposition.html))

25. Management Greetings | HOSOKAWAMICRON CORPORATION

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Hosokawa reports FY2025 net sales of JPY xx.xx, down xx.xx%, and orders down xx.xx%. The diversified-company result challenges uniform purchasing acceleration and constrains, rather than directly measures, technology-mix assumptions.
([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/ir/management_policy/management_greetings.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Hosokawa reports FY2025 net sales of JPY xx.xx, down xx.xx%, and orders down xx.xx%. The diversified-company result challenges uniform purchasing acceleration and constrains, rather than directly measures, technology-mix assumptions.
([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/ir/management_policy/management_greetings.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The same broader financial contraction is counterevidence to assuming uniform Media Mills growth across suppliers; no corporate revenue is assigned directly to the category.
([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/ir/management_policy/management_greetings.html))

26. Details of micromeritics | HOSOKAWAMICRON CORPORATION

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Hosokawa identifies its AS spiral offering, supporting subtype mapping rather than a sales weight. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Hosokawa identifies its AS spiral offering, supporting subtype mapping rather than a sales weight. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The AFG/TFG counterjet offerings support the retained Opposed-Jet commercial mapping. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The AFG/TFG counterjet offerings support the retained Opposed-Jet commercial mapping. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The manufacturer identifies Innovomizer as a mechanical ultrafine offering; ordinary impact equipment is not automatically included. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The manufacturer identifies Innovomizer as a mechanical ultrafine offering; ordinary impact equipment is not automatically included. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

27. Grinding Equipment Manufacturer Supplier Factory, Grinding System | Longly

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: LONGLY discloses current annual capacity above 2,000 equipment units and commercial wet-grinding offerings. Capacity is bridged through explicitly assumed timing, utilization and eligible-product factors; it is not reported 2025 stirred-mill shipments. ([longlymill.com](https://www.longlymill.com/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: LONGLY discloses current annual capacity above 2,000 equipment units and commercial wet-grinding offerings. Capacity is bridged through explicitly assumed timing, utilization and eligible-product factors; it is not reported 2025 stirred-mill shipments. ([longlymill.com](https://www.longlymill.com/))

28. Ultra-Fine Grinding - Hosokawa Micron Malaysia

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The inspected ultrafine portfolio identifies AWM-F table-roller equipment, supporting the qualifying Roller Mills boundary, not its assumed counts or prices. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The inspected ultrafine portfolio identifies AWM-F table-roller equipment, supporting the qualifying Roller Mills boundary, not its assumed counts or prices. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Super Orion is a marketed rotary ball-mill constituent of the combined rotary/planetary category. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Super Orion is a marketed rotary ball-mill constituent of the combined rotary/planetary category. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: MJT is explicitly listed as a target-type offering, supporting precedence of the named platform over overlapping generic jet terminology. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: MJT is explicitly listed as a target-type offering, supporting precedence of the named platform over overlapping generic jet terminology. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

29. Loop Jet Mill - Consistency. Compliance. Engineered.

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The current named Loop Jet Mill listing establishes an offered commercial platform. It supports forecast category continuity, but does not disclose subtype revenue or prove 2025 sales. ([jetmillmfg.com](https://www.jetmillmfg.com/loop-jet-mill/))

30. SWECO Vibratory Grinding and Particle Size Reduction Equipment

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: SWECO markets Vibro-Energy grinding equipment with separate wet and wet/dry offerings. This supports commercial category and configuration mapping, not the modeled frequency of purchases. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: SWECO markets Vibro-Energy grinding equipment with separate wet and wet/dry offerings. This supports commercial category and configuration mapping, not the modeled frequency of purchases. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Named wet/dry models establish dual-state availability; they do not establish the exact supplied configuration or a market-wide value share. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Named wet/dry models establish dual-state availability; they do not establish the exact supplied configuration or a market-wide value share. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))

31. Fine-cutting mill with rotating classifying feature - the sensational new development!

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The September xx.xx 2014 own-product announcement establishes a pre-base-year SecoMy S cutting offering described for ultrafine commercial applications. It is category evidence, not annual equipment revenue. ([grinding.netzsch.com](https://grinding.netzsch.com/en/news/2014/fine-cutting-mill-with-rotating-classifying-feature-the-sensational-new-development))

32. NETZSCH SecoMy S - Precision Cutting Redefined!

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The August 2026 SecoMy S brochure confirms continuing commercial ultrafine-cutting positioning and system-supply availability. It supports category persistence, not the assumed forecast spending share. ([grinding.netzsch.com](https://grinding.netzsch.com/_Resources/Persistent/xx.xx/e/xx.xx/b/8e4b5adcfc16fcc2d83974f8080d614cce1a2c01/NETZSCH_Fine_Cutting_Mill_SecoMy_S_e.pdf))

33. Wet Milling and Dispersing Device - Star Burst - Sugino Corp.

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: SUGINO's Star Burst portfolio identifies wet-jet equipment across research and production purchasing contexts. Only milling-attributable supply is included; adjacent droplet-only or dispersion activity is not automatically counted. ([suginocorp.com](https://www.suginocorp.com/star-burst/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: SUGINO's Star Burst portfolio identifies wet-jet equipment across research and production purchasing contexts. Only milling-attributable supply is included; adjacent droplet-only or dispersion activity is not automatically counted. ([suginocorp.com](https://www.suginocorp.com/star-burst/))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The wet-jet offering supports wet-state classification within the joint value model, not the total Wet Grinding share. ([suginocorp.com](https://www.suginocorp.com/star-burst/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The wet-jet offering supports wet-state classification within the joint value model, not the total Wet Grinding share. ([suginocorp.com](https://www.suginocorp.com/star-burst/))

34. IBU-tec | Mills - Milling Technology for Dry and Wet Grinding
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operator table separately lists two dry opposed-jet units. This is an installed-inventory observation, not a shipment or revenue ratio. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operator table separately lists two dry opposed-jet units. This is an installed-inventory observation, not a shipment or revenue ratio. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Three wet agitator-bead units are separately inventoried, supporting state-specific commercial classification without using their count as a market weight. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Three wet agitator-bead units are separately inventoried, supporting state-specific commercial classification without using their count as a market weight. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
35. Comminution - NTNU
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: NTNU separately records wet/dry capability for stirred and planetary equipment; the inventory is not a representative value-share dataset. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: NTNU separately records wet/dry capability for stirred and planetary equipment; the inventory is not a representative value-share dataset. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The planetary equipment is recorded as batch, supporting a laboratory batch context without assuming all laboratories are batch-only. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The planetary equipment is recorded as batch, supporting a laboratory batch context without assuming all laboratories are batch-only. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The laboratory jet rig is recorded as continuous, independently challenging equivalence between continuous mode and industrial scale. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The laboratory jet rig is recorded as continuous, independently challenging equivalence between continuous mode and industrial scale. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
36. Dry Batch Or Continuous Laboratory Mills - Union Process
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Union Process identifies SD-xx.xx as one laboratory offering for both batch and continuous service. Configuration-specific purchase inclusion and revenue are undisclosed. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Union Process identifies SD-xx.xx as one laboratory offering for both batch and continuous service. Configuration-specific purchase inclusion and revenue are undisclosed. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The same named offering advertises wet/dry capability, supporting a dual-state category premise rather than an observed adoption percentage. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The same named offering advertises wet/dry capability, supporting a dual-state category premise rather than an observed adoption percentage. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))

37. Retsch Contact & Services - Contact Partners Worldwide

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: RETSCH describes a network including daughter companies. Manufacturer affiliation, rather than contact location, informs direct-route attribution. ([retsch.com](https://www.retsch.com/contact-services/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: RETSCH describes a network including daughter companies. Manufacturer affiliation, rather than contact location, informs direct-route attribution. ([retsch.com](https://www.retsch.com/contact-services/))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The network also includes trained distributors, establishing a resale-access premise but not distributor ownership roles or annual sales weights. ([retsch.com](https://www.retsch.com/contact-services/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The network also includes trained distributors, establishing a resale-access premise but not distributor ownership roles or annual sales weights. ([retsch.com](https://www.retsch.com/contact-services/))

38. HOSOKAWA ALPINE Aktiengesellschaft - Conditions of Sale 371_00 EN

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Hosokawa requires company confirmation of representatives' transactions and makes contractual scope authoritative. The terms support agency-role attribution, not the assumed agent percentage. ([hosokawa-alpine.com](https://www.hosokawa-alpine.com/fileadmin/allgemein/Legal/AGB/AGB_Verkaufsbedingungen_en_371_00.pdf))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Hosokawa requires company confirmation of representatives' transactions and makes contractual scope authoritative. The terms support agency-role attribution, not the assumed agent percentage. ([hosokawa-alpine.com](https://www.hosokawa-alpine.com/fileadmin/allgemein/Legal/AGB/AGB_Verkaufsbedingungen_en_371_00.pdf))

39. UNSD - ISIC Rev.5, Class 4610: Wholesale on a Fee or Contract Basis

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: ISIC Rev.xx.xx class xx.xx defines fee/commission intermediation without ownership, supporting a non-title-taking agency numerator distinct from goods supplied on own account. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: ISIC Rev.xx.xx class xx.xx defines fee/commission intermediation without ownership, supporting a non-title-taking agency numerator distinct from goods supplied on own account. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Own-account wholesale is excluded from the agency class, supporting the reseller/agent partition without supplying ultrafine-mill channel shares. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own-account wholesale is excluded from the agency class, supporting the reseller/agent partition without supplying ultrafine-mill channel shares. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))

40. ITDI-PB-2024-057 - Supply, Delivery, Installation and Commissioning of Ultra-fine Friction Grinder

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The 2024 friction-grinder procurement had a PHP xx.xx budget and failed with no bidder. It establishes a configured-package spending ceiling and commercial category, not a sale or a shipment count. ([notices.philgeps.gov.ph](https://notices.philgeps.gov.ph/GEPSNONPILOT/Tender/PrintableBidNoticeAbstractUI.aspx?refid=xx.xx))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The 2024 friction-grinder procurement had a PHP xx.xx budget and failed with no bidder. It establishes a configured-package spending ceiling and commercial category, not a sale or a shipment count. ([notices.philgeps.gov.ph](https://notices.philgeps.gov.ph/GEPSNONPILOT/Tender/PrintableBidNoticeAbstractUI.aspx?refid=xx.xx))

41. Bangko Sentral ng Pilipinas - Balance of Payments Report, Q4 2024
· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The central bank reports a 2024 average of PHP xx.xx per USD. Dividing the failed PHP xx.xx procurement budget by this rate gives an approximately USD xx.xx comparison ceiling, not realized equipment revenue. ([bsp.gov.ph](https://www.bsp.gov.ph/Media_And_Research/Balance%20of%20Payments%20Report/2024/BOP_4qtr2024.pdf))
· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The central bank reports a 2024 average of PHP xx.xx per USD. Dividing the failed PHP xx.xx procurement budget by this rate gives an approximately USD xx.xx comparison ceiling, not realized equipment revenue. ([bsp.gov.ph](https://www.bsp.gov.ph/Media_And_Research/Balance%20of%20Payments%20Report/2024/BOP_4qtr2024.pdf))

15.5. Middle East

Table 219. Middle East Ultra Fine Grinding Mill Market, by Country growth contribution, 2025-2032

Category	2025 value (USD Million)	2032 value (USD Million)	Added value (USD Million)	2025 share (%)	2032 share (%)	Change (pp)	Growth share (%)	CAGR (%)
Israel	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Qatar	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Saudi Arabia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Turkey	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Unallocated / remaining scope	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United Arab Emirates	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Scope total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 220. Middle East Ultra Fine Grinding Mill Market Size, by Region, 2017-2040 (USD Million)

Region	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Israel	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Qatar	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Saudi Arabia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Turkey	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United Arab Emirates	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Others	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 221. Middle East Ultra Fine Grinding Mill Market Size, by Supply Scope, 2017-2040 (USD Million)

Supply Scope	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Integrated Milling Packages	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Standalone Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 222. Middle East Ultra Fine Grinding Mill Market Size, by Mill Technology, 2017-2040 (USD Million)

Mill Technology	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Cutting Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Disc and Colloid Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Gas-Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mechanical Impact Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Media Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Roller Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wet-Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 223. Middle East Ultra Fine Grinding Mill Market Size, by Media Mills, 2017-2040 (USD Million)

Media Mills	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Rotary and Planetary Ball Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Stirred Media Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Vibratory Media Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 224. Middle East Ultra Fine Grinding Mill Market Size, by Gas-Jet Mills, 2017-2040 (USD Million)

Gas-Jet Mills	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Loop Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Opposed-Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Spiral Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Target Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 225. Middle East Ultra Fine Grinding Mill Market Size, by Processed Material, 2017-2040 (USD Million)

Processed Material	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Biomass and Natural Ingredients	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Carbonaceous Materials	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Formulations and Composites	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Industrial Minerals	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Inorganic Chemicals, Ceramics, and Glass	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Metal Ores and Concentrates	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Metals and Alloys	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Organic Chemicals	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Polymers and Elastomers	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 226. Middle East Ultra Fine Grinding Mill Market Size, by Buyer Industry, 2017-2040 (USD Million)

Buyer Industry	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Chemical and Fuel Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Electrical and Electronic Product Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Food, Beverage, and Feed Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Glass, Ceramics, and Construction Materials Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Materials Recovery and Recycling	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Metals and Fabricated Metal Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mining and Mineral Processing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Pharmaceutical Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Power and Heat Generation	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Research, Education, and Testing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Rubber and Plastics Product Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wood, Pulp, and Paper Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Others	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 227. Middle East Ultra Fine Grinding Mill Market Size, by Deployment Scale, 2017-2040 (USD Million)

Deployment Scale	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Industrial Production	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Laboratory	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Pilot	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 228. Middle East Ultra Fine Grinding Mill Market Size, by Sales Channel, 2017-2040 (USD Million)

Sales Channel	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Agent-Mediated Sales	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Independent Reseller Sales	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Manufacturer-Direct Sales	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 229. Middle East Ultra Fine Grinding Mill Market Size, by Processing State, 2017-2040 (USD Million)

Processing State	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Dry Grinding	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wet and Dry Grinding	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wet Grinding	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 230. Middle East Ultra Fine Grinding Mill Market Size, by Operating Mode, 2017-2040 (USD Million)

Operating Mode	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Batch	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Batch and Continuous	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Continuous	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Sources & Evidence

1. Mach for mixing/kneading/crushing/grinding etc imports by country | 2024
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Turkey USD xx.xx and Saudi Arabia USD xx.xx are broad machinery purchasing inputs, not observed qualifying-market numerators.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Turkey USD xx.xx and Saudi Arabia USD xx.xx are broad machinery purchasing inputs, not observed qualifying-market numerators.
2. Crushing/grinding machines for earth/ stone/ore imports by country | 2024
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Saudi Arabia and Turkey have separately reported mineral machinery imports, supporting national rather than bloc-wide purchasing inputs.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Saudi Arabia and Turkey have separately reported mineral machinery imports, supporting national rather than bloc-wide purchasing inputs.

3. Mach for mixing/kneading/crushing/grinding etc imports by country | 2023
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: 2023 HS xx.xx imports of USD xx.xx anchor the UAE's lagged purchasing input before modeled timing and re-export adjustments.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: 2023 HS xx.xx imports of USD xx.xx anchor the UAE's lagged purchasing input before modeled timing and re-export adjustments.
4. Crushing/grinding machines for earth/ stone/ore imports by country | 2023
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: UAE 2023 mineral machinery imports were USD xx.xx, used only through an explicit mixed-period and re-export bridge.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: UAE 2023 mineral machinery imports were USD xx.xx, used only through an explicit mixed-period and re-export bridge.
5. World Manufacturing Production and Trade, Quarter IV 2025
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Country-level manufacturing heterogeneity constrains the forecast; no single regional output rate is converted into machinery demand.
6. Hosokawa Micron - FY2025 Financial Results Presentation, November 25, 2025 (Japanese)
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; material attribution modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; material attribution modeled.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; establishment attribution modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; establishment attribution modeled.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; buyer attribution assumed.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; buyer attribution assumed.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; qualifying power attribution unverified.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; qualifying power attribution unverified.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; institutional attribution assumed.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; institutional attribution assumed.

7. Metso Receives Order for Grinding Mills to a Copper Project in Africa
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Approximately EUR xx.xx 2024 HIGmill order includes auxiliaries and services; a package-scale anchor, not recognized annual revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Approximately EUR xx.xx 2024 HIGmill order includes auxiliaries and services; a package-scale anchor, not recognized annual revenue.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The copper-project award establishes an ore/concentrate commercial purchasing context.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The copper-project award establishes an ore/concentrate commercial purchasing context.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The award concerns an African mining project; it does not disclose the global mining-buyer share.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The award concerns an African mining project; it does not disclose the global mining-buyer share.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Large industrial equipment procurement supports the production-scale category premise.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Large industrial equipment procurement supports the production-scale category premise.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The August xx.xx 2024 announcement records an approximately EUR xx.xx HIGmill order including auxiliaries and services. It anchors package-level commercial materiality, not a mill unit price or 2025 recognized revenue. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The August xx.xx 2024 announcement records an approximately EUR xx.xx HIGmill order including auxiliaries and services. It anchors package-level commercial materiality, not a mill unit price or 2025 recognized revenue. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The stirred-package order supports the Media Mills value-weight model and continuing commercial-demand premise, with order-to-revenue timing unresolved. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The stirred-package order supports the Media Mills value-weight model and continuing commercial-demand premise, with order-to-revenue timing unresolved. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
8. HIGmill Plant - Metso
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Standalone marketing terminology does not establish the study's Standalone Mills equipment scope.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Standalone marketing terminology does not establish the study's Standalone Mills equipment scope.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: HIGmill Plant includes pre-engineered auxiliary modules, supporting classification as an equipment package.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: HIGmill Plant includes pre-engineered auxiliary modules, supporting classification as an equipment package.

9. IsaMill - About, Technology Partnership and Engineering
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Delivery alternatives permit mill-only supply or additional auxiliary equipment; actual equipment scope determines attribution.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Delivery alternatives permit mill-only supply or additional auxiliary equipment; actual equipment scope determines attribution.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Modular auxiliary-inclusive and turnkey alternatives support differentiated package scope, without proving a global adoption percentage.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Modular auxiliary-inclusive and turnkey alternatives support differentiated package scope, without proving a global adoption percentage.
10. Commission Processing - NIPPON COKE & ENGINEERING CO., LTD.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Own commercial processing portfolio identifies glass, ceramics and inorganic materials; establishes material mapping, not equipment revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own commercial processing portfolio identifies glass, ceramics and inorganic materials; establishes material mapping, not equipment revenue.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Organic pigments are named commercial processing materials.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Organic pigments are named commercial processing materials.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Metal powders are named commercial processing materials.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Metal powders are named commercial processing materials.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Carbon is identified in the operator's commercial grinding portfolio.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Carbon is identified in the operator's commercial grinding portfolio.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Thermosetting resin supports a polymer-material category premise.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Thermosetting resin supports a polymer-material category premise.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Ink-related grinding establishes a commercial reference but does not resolve whole-formulation versus constituent duty.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Ink-related grinding establishes a commercial reference but does not resolve whole-formulation versus constituent duty.

11. Micronization / Grinding - A. Ebbecke Verfahrenstechnik AG
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Commercial contract-grinding coverage includes natural materials and food ingredients; processing fees are excluded from equipment value.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Commercial contract-grinding coverage includes natural materials and food ingredients; processing fees are excluded from equipment value.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Plastic granulates and resins establish material coverage, not downstream customers' equipment ownership.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Plastic granulates and resins establish material coverage, not downstream customers' equipment ownership.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operator-side food-processing reference supports establishment attribution rather than automatically assigning equipment to its customers.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operator-side food-processing reference supports establishment attribution rather than automatically assigning equipment to its customers.
12. Manufacturing Capabilities - Asbury Advanced Materials
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Own manufacturing disclosure identifies carbon-material grinding and micronization; supports the material-duty premise only.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own manufacturing disclosure identifies carbon-material grinding and micronization; supports the material-duty premise only.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Custom formulations and dispersions are commercial outputs, but joint whole-formulation milling remains unmeasured.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Custom formulations and dispersions are commercial outputs, but joint whole-formulation milling remains unmeasured.
13. Pyrum Innovations AG - Interim Group Report January 1 to June 30, 2025
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The purchaser's 2025 report records a grinding-plant installation associated with recovered carbon black; no downstream material revenue is counted.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The purchaser's 2025 report records a grinding-plant installation associated with recovered carbon black; no downstream material revenue is counted.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The report establishes an actual recovery-business equipment context, while the exact attributable mill expenditure remains undisclosed.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The report establishes an actual recovery-business equipment context, while the exact attributable mill expenditure remains undisclosed.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The disclosed commercial-site grinding installation supports Industrial Production classification.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The disclosed commercial-site grinding installation supports Industrial Production classification.

14. NRRI Advances Efficient Grinding Technology on the Iron Range
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The institution distinguishes a planned bench-scale purchase from its loaned pilot equipment; not a completed-sale census.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The institution distinguishes a planned bench-scale purchase from its loaned pilot equipment; not a completed-sale census.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The May xx.xx 2024 account identifies a loaned pilot stirred mill; unpaid placement is not counted as equipment-sale revenue.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The May xx.xx 2024 account identifies a loaned pilot stirred mill; unpaid placement is not counted as equipment-sale revenue.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operating research institute is distinct from its mining clients, supporting buyer/material separation.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operating research institute is distinct from its mining clients, supporting buyer/material separation.
15. Planetary Ball Mill PM 100 - RETSCH
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The PM xx.xx is marketed as a benchtop instrument, supporting the small-laboratory pool classification without establishing sales weight.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The PM xx.xx is marketed as a benchtop instrument, supporting the small-laboratory pool classification without establishing sales weight.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The individual-instrument offering supports a narrower equipment-supply alternative; package incidence remains modeled.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The individual-instrument offering supports a narrower equipment-supply alternative; package incidence remains modeled.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: PM xx.xx is a marketed benchtop planetary platform, supporting laboratory-category mapping rather than shipment or price weights. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: PM xx.xx is a marketed benchtop planetary platform, supporting laboratory-category mapping rather than shipment or price weights. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The product page advertises both dry and wet capability. Actual dual-state purchase inclusion remains an explicit model assumption. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The product page advertises both dry and wet capability. Actual dual-state purchase inclusion remains an explicit model assumption. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))

16. Jet Mill - Contract History CW2408170, CanadaBuys
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: A May xx.xx 2026 laboratory jet-mill award totals CAD xx.xx; a dated procurement check, not a 2025 shipment or global average price.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: A May xx.xx 2026 laboratory jet-mill award totals CAD xx.xx; a dated procurement check, not a 2025 shipment or global average price.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The record distinguishes Natural Resources Canada as buying organization from PSPC as contracting organization, supporting establishment attribution.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The record distinguishes Natural Resources Canada as buying organization from PSPC as contracting organization, supporting establishment attribution.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The jet-mill award totals CAD xx.xx and is dated May xx.xx 2026. It is a nearby-period laboratory purchasing comparator, not a 2025 recognized sale, and supplies neither a gas-jet subtype nor a definitive channel role. ([canadabuys.canada.ca](https://canadabuys.canada.ca/en/tender-opportunities/contract-history/cw2408170-xx.xx))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The jet-mill award totals CAD xx.xx and is dated May xx.xx 2026. It is a nearby-period laboratory purchasing comparator, not a 2025 recognized sale, and supplies neither a gas-jet subtype nor a definitive channel role. ([canadabuys.canada.ca](https://canadabuys.canada.ca/en/tender-opportunities/contract-history/cw2408170-xx.xx))
17. MFC Production Equipment - FiberLean
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The manufacturer's commercial offering targets pulp, paper and related establishments; it is not a measured industry sales share.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The manufacturer's commercial offering targets pulp, paper and related establishments; it is not a measured industry sales share.
18. Pulverizing Equipment - Coperion
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The broader portfolio names power-generation applications and separately lists ultrafine equipment; this limits, rather than verifies, the assumed qualifying power-buyer allocation.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The broader portfolio names power-generation applications and separately lists ultrafine equipment; this limits, rather than verifies, the assumed qualifying power-buyer allocation.
19. LG Energy Solution Releases 2025 Financial Results - January 29, 2026
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own 2025 revenue decline and dated 2026 capital-expenditure reduction target constrain battery-related equipment-adoption assumptions.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Existing-asset reuse strategy qualifies a direct downstream-demand-to-new-carbon-material-mill investment inference.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Buyer investment restraint constrains the relative application multiplier; upstream chemical attribution remains separately assumed.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own battery-manufacturer financial and investment plans provide a counter-test, not an ultrafine equipment purchasing total.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The January 2026 emphasis on reduced new investment qualifies automatic growth in broader equipment-package adoption.

20. UNSD Classification Detail - ISIC Rev.4, Class 3830: Materials Recovery
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The official classification distinguishes secondary-material recovery from manufacture of new final products; it supplies no equipment sales weight.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The official classification distinguishes secondary-material recovery from manufacture of new final products; it supplies no equipment sales weight.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Recovered-input use alone does not classify the equipment operator as a recovery establishment rather than a product manufacturer.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Recovered-input use alone does not classify the equipment operator as a recovery establishment rather than a product manufacturer.
21. Ultrafin Mill: Super Masscolloider, Masuko MKCA6-5J CE - University of Ljubljana
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The university inventories a laboratory ultrafine mill within wood science; the institutional operator is not a wood-products manufacturer.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The university inventories a laboratory ultrafine mill within wood science; the institutional operator is not a wood-products manufacturer.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The institutional inventory expressly identifies laboratory equipment, supporting deployment classification without establishing a purchase-year value.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The institutional inventory expressly identifies laboratory equipment, supporting deployment classification without establishing a purchase-year value.
22. Contract Manufacturing of Pharmaceuticals - YUKI GOSEI KOGYO CO., LTD.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operator distinguishes production jet mills from smaller equipment, supporting industrial deployment at a pharmaceutical contract manufacturer.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operator distinguishes production jet mills from smaller equipment, supporting industrial deployment at a pharmaceutical contract manufacturer.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The actual pharmaceutical manufacturing operator is distinct from customers outsourcing production; processing-service receipts remain excluded.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The actual pharmaceutical manufacturing operator is distinct from customers outsourcing production; processing-service receipts remain excluded.

23. Record year for Metso stirred mills as mining industry opts for energy-efficient comminution technology

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Metso reports more than twenty Vertimill sales in 2025 and approximately xx.xx cumulative stirred-mill deliveries. Broader application coverage prevents treating these as ultrafine-only annual shipments; they constrain the modeled stirred/mining allocation and forecast premise.
([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Metso reports more than twenty Vertimill sales in 2025 and approximately xx.xx cumulative stirred-mill deliveries. Broader application coverage prevents treating these as ultrafine-only annual shipments; they constrain the modeled stirred/mining allocation and forecast premise.
([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The disclosed stirred-equipment activity supports material Media Mills participation, not the final modeled parent share.
([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The disclosed stirred-equipment activity supports material Media Mills participation, not the final modeled parent share.
([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))

24. Bühler strengthens its market position

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Bühler reports xx.xx% Grinding & Dispersing order growth in 2025 against a xx.xx% decline in broader Advanced Materials orders. This is a mixed commercial leading indicator, not observed market-share growth.
([buhlergroup.com](https://www.buhlergroup.com/global/en/media/media-releases/b%C3%BChler-strengthens-its-marketposition.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Bühler reports xx.xx% Grinding & Dispersing order growth in 2025 against a xx.xx% decline in broader Advanced Materials orders. This is a mixed commercial leading indicator, not observed market-share growth.
([buhlergroup.com](https://www.buhlergroup.com/global/en/media/media-releases/b%C3%BChler-strengthens-its-marketposition.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The disclosed battery-related and other application orders constrain differentiated Media Mills forecast assumptions without converting orders directly to annual equipment revenue.
([buhlergroup.com](https://www.buhlergroup.com/global/en/media/media-releases/b%C3%BChler-strengthens-its-marketposition.html))

25. Management Greetings | HOSOKAWAMICRON CORPORATION

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Hosokawa reports FY2025 net sales of JPY xx.xx, down xx.xx%, and orders down xx.xx%. The diversified-company result challenges uniform purchasing acceleration and constrains, rather than directly measures, technology-mix assumptions.
([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/ir/management_policy/management_greetings.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Hosokawa reports FY2025 net sales of JPY xx.xx, down xx.xx%, and orders down xx.xx%. The diversified-company result challenges uniform purchasing acceleration and constrains, rather than directly measures, technology-mix assumptions.
([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/ir/management_policy/management_greetings.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The same broader financial contraction is counterevidence to assuming uniform Media Mills growth across suppliers; no corporate revenue is assigned directly to the category.
([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/ir/management_policy/management_greetings.html))

26. Details of micromeritics | HOSOKAWAMICRON CORPORATION

- Evidence informing base-year allocation inputs; displayed values and growth are calculated: Hosokawa identifies its AS spiral offering, supporting subtype mapping rather than a sales weight. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))
- Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Hosokawa identifies its AS spiral offering, supporting subtype mapping rather than a sales weight. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))
- Evidence informing base-year allocation inputs; displayed values and growth are calculated: The AFG/TFG counterjet offerings support the retained Opposed-Jet commercial mapping. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))
- Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The AFG/TFG counterjet offerings support the retained Opposed-Jet commercial mapping. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))
- Evidence informing base-year allocation inputs; displayed values and growth are calculated: The manufacturer identifies Innovomizer as a mechanical ultrafine offering; ordinary impact equipment is not automatically included. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))
- Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The manufacturer identifies Innovomizer as a mechanical ultrafine offering; ordinary impact equipment is not automatically included. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

27. Grinding Equipment Manufacturer Supplier Factory, Grinding System | Longly

- Evidence informing base-year allocation inputs; displayed values and growth are calculated: LONGLY discloses current annual capacity above 2,000 equipment units and commercial wet-grinding offerings. Capacity is bridged through explicitly assumed timing, utilization and eligible-product factors; it is not reported 2025 stirred-mill shipments. ([longlymill.com](https://www.longlymill.com/))
- Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: LONGLY discloses current annual capacity above 2,000 equipment units and commercial wet-grinding offerings. Capacity is bridged through explicitly assumed timing, utilization and eligible-product factors; it is not reported 2025 stirred-mill shipments. ([longlymill.com](https://www.longlymill.com/))

28. Ultra-Fine Grinding - Hosokawa Micron Malaysia

- Evidence informing base-year allocation inputs; displayed values and growth are calculated: The inspected ultrafine portfolio identifies AWM-F table-roller equipment, supporting the qualifying Roller Mills boundary, not its assumed counts or prices. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))
- Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The inspected ultrafine portfolio identifies AWM-F table-roller equipment, supporting the qualifying Roller Mills boundary, not its assumed counts or prices. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))
- Evidence informing base-year allocation inputs; displayed values and growth are calculated: Super Orion is a marketed rotary ball-mill constituent of the combined rotary/planetary category. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))
- Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Super Orion is a marketed rotary ball-mill constituent of the combined rotary/planetary category. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))
- Evidence informing base-year allocation inputs; displayed values and growth are calculated: MJT is explicitly listed as a target-type offering, supporting precedence of the named platform over overlapping generic jet terminology. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))
- Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: MJT is explicitly listed as a target-type offering, supporting precedence of the named platform over overlapping generic jet terminology. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

29. Loop Jet Mill - Consistency. Compliance. Engineered.

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The current named Loop Jet Mill listing establishes an offered commercial platform. It supports forecast category continuity, but does not disclose subtype revenue or prove 2025 sales. ([jetmillmfg.com](https://www.jetmillmfg.com/loop-jet-mill/))

30. SWECO Vibratory Grinding and Particle Size Reduction Equipment

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: SWECO markets Vibro-Energy grinding equipment with separate wet and wet/dry offerings. This supports commercial category and configuration mapping, not the modeled frequency of purchases. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: SWECO markets Vibro-Energy grinding equipment with separate wet and wet/dry offerings. This supports commercial category and configuration mapping, not the modeled frequency of purchases. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Named wet/dry models establish dual-state availability; they do not establish the exact supplied configuration or a market-wide value share. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Named wet/dry models establish dual-state availability; they do not establish the exact supplied configuration or a market-wide value share. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))

31. Fine-cutting mill with rotating classifying feature - the sensational new development!

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The September xx.xx 2014 own-product announcement establishes a pre-base-year SecoMy S cutting offering described for ultrafine commercial applications. It is category evidence, not annual equipment revenue. ([grinding.netzsch.com](https://grinding.netzsch.com/en/news/2014/fine-cutting-mill-with-rotating-classifying-feature-the-sensational-new-development))

32. NETZSCH SecoMy S - Precision Cutting Redefined!

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The August 2026 SecoMy S brochure confirms continuing commercial ultrafine-cutting positioning and system-supply availability. It supports category persistence, not the assumed forecast spending share. ([grinding.netzsch.com](https://grinding.netzsch.com/_Resources/Persistent/xx.xx/e/xx.xx/b/8e4b5adcfc16fcc2d83974f8080d614cce1a2c01/NETZSCH_Fine_Cutting_Mill_SecoMy_S_e.pdf))

33. Wet Milling and Dispersing Device - Star Burst - Sugino Corp.

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: SUGINO's Star Burst portfolio identifies wet-jet equipment across research and production purchasing contexts. Only milling-attributable supply is included; adjacent droplet-only or dispersion activity is not automatically counted. ([suginocorp.com](https://www.suginocorp.com/star-burst/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: SUGINO's Star Burst portfolio identifies wet-jet equipment across research and production purchasing contexts. Only milling-attributable supply is included; adjacent droplet-only or dispersion activity is not automatically counted. ([suginocorp.com](https://www.suginocorp.com/star-burst/))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The wet-jet offering supports wet-state classification within the joint value model, not the total Wet Grinding share. ([suginocorp.com](https://www.suginocorp.com/star-burst/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The wet-jet offering supports wet-state classification within the joint value model, not the total Wet Grinding share. ([suginocorp.com](https://www.suginocorp.com/star-burst/))

34. IBU-tec | Mills - Milling Technology for Dry and Wet Grinding
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operator table separately lists two dry opposed-jet units. This is an installed-inventory observation, not a shipment or revenue ratio. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operator table separately lists two dry opposed-jet units. This is an installed-inventory observation, not a shipment or revenue ratio. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Three wet agitator-bead units are separately inventoried, supporting state-specific commercial classification without using their count as a market weight. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Three wet agitator-bead units are separately inventoried, supporting state-specific commercial classification without using their count as a market weight. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
35. Comminution - NTNU
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: NTNU separately records wet/dry capability for stirred and planetary equipment; the inventory is not a representative value-share dataset. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: NTNU separately records wet/dry capability for stirred and planetary equipment; the inventory is not a representative value-share dataset. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The planetary equipment is recorded as batch, supporting a laboratory batch context without assuming all laboratories are batch-only. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The planetary equipment is recorded as batch, supporting a laboratory batch context without assuming all laboratories are batch-only. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The laboratory jet rig is recorded as continuous, independently challenging equivalence between continuous mode and industrial scale. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The laboratory jet rig is recorded as continuous, independently challenging equivalence between continuous mode and industrial scale. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
36. Dry Batch Or Continuous Laboratory Mills - Union Process
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Union Process identifies SD-xx.xx as one laboratory offering for both batch and continuous service. Configuration-specific purchase inclusion and revenue are undisclosed. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Union Process identifies SD-xx.xx as one laboratory offering for both batch and continuous service. Configuration-specific purchase inclusion and revenue are undisclosed. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The same named offering advertises wet/dry capability, supporting a dual-state category premise rather than an observed adoption percentage. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The same named offering advertises wet/dry capability, supporting a dual-state category premise rather than an observed adoption percentage. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))

37. Retsch Contact & Services - Contact Partners Worldwide

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: RETSCH describes a network including daughter companies. Manufacturer affiliation, rather than contact location, informs direct-route attribution. ([retsch.com](https://www.retsch.com/contact-services/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: RETSCH describes a network including daughter companies. Manufacturer affiliation, rather than contact location, informs direct-route attribution. ([retsch.com](https://www.retsch.com/contact-services/))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The network also includes trained distributors, establishing a resale-access premise but not distributor ownership roles or annual sales weights. ([retsch.com](https://www.retsch.com/contact-services/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The network also includes trained distributors, establishing a resale-access premise but not distributor ownership roles or annual sales weights. ([retsch.com](https://www.retsch.com/contact-services/))

38. HOSOKAWA ALPINE Aktiengesellschaft - Conditions of Sale 371_00 EN

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Hosokawa requires company confirmation of representatives' transactions and makes contractual scope authoritative. The terms support agency-role attribution, not the assumed agent percentage. ([hosokawa-alpine.com](https://www.hosokawa-alpine.com/fileadmin/allgemein/Legal/AGB/AGB_Verkaufsbedingungen_en_371_00.pdf))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Hosokawa requires company confirmation of representatives' transactions and makes contractual scope authoritative. The terms support agency-role attribution, not the assumed agent percentage. ([hosokawa-alpine.com](https://www.hosokawa-alpine.com/fileadmin/allgemein/Legal/AGB/AGB_Verkaufsbedingungen_en_371_00.pdf))

39. UNSD - ISIC Rev.5, Class 4610: Wholesale on a Fee or Contract Basis

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: ISIC Rev.xx.xx class xx.xx defines fee/commission intermediation without ownership, supporting a non-title-taking agency numerator distinct from goods supplied on own account. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: ISIC Rev.xx.xx class xx.xx defines fee/commission intermediation without ownership, supporting a non-title-taking agency numerator distinct from goods supplied on own account. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Own-account wholesale is excluded from the agency class, supporting the reseller/agent partition without supplying ultrafine-mill channel shares. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own-account wholesale is excluded from the agency class, supporting the reseller/agent partition without supplying ultrafine-mill channel shares. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))

40. ITDI-PB-2024-057 - Supply, Delivery, Installation and Commissioning of Ultra-fine Friction Grinder

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The 2024 friction-grinder procurement had a PHP xx.xx budget and failed with no bidder. It establishes a configured-package spending ceiling and commercial category, not a sale or a shipment count. ([notices.philgeps.gov.ph](https://notices.philgeps.gov.ph/GEPSNONPILOT/Tender/PrintableBidNoticeAbstractUI.aspx?refid=xx.xx))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The 2024 friction-grinder procurement had a PHP xx.xx budget and failed with no bidder. It establishes a configured-package spending ceiling and commercial category, not a sale or a shipment count. ([notices.philgeps.gov.ph](https://notices.philgeps.gov.ph/GEPSNONPILOT/Tender/PrintableBidNoticeAbstractUI.aspx?refid=xx.xx))

41. Bangko Sentral ng Pilipinas - Balance of Payments Report, Q4 2024

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The central bank reports a 2024 average of PHP xx.xx per USD. Dividing the failed PHP xx.xx procurement budget by this rate gives an approximately USD xx.xx comparison ceiling, not realized equipment revenue. ([bsp.gov.ph](https://www.bsp.gov.ph/Media_And_Research/Balance%20of%20Payments%20Report/2024/BOP_4qtr2024.pdf))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The central bank reports a 2024 average of PHP xx.xx per USD. Dividing the failed PHP xx.xx procurement budget by this rate gives an approximately USD xx.xx comparison ceiling, not realized equipment revenue. ([bsp.gov.ph](https://www.bsp.gov.ph/Media_And_Research/Balance%20of%20Payments%20Report/2024/BOP_4qtr2024.pdf))

15.6. Africa

Table 231. Africa Ultra Fine Grinding Mill Market, by Country growth contribution, 2025-2032

Category	2025 value (USD Million)	2032 value (USD Million)	Added value (USD Million)	2025 share (%)	2032 share (%)	Change (pp)	Growth share (%)	CAGR (%)
Egypt	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Kenya	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Nigeria	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
South Africa	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Unallocated / remaining scope	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Scope total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 232. Africa Ultra Fine Grinding Mill Market Size, by Region, 2017-2040 (USD Million)

Region	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Egypt	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Kenya	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Nigeria	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
South Africa	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Others	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 233. Africa Ultra Fine Grinding Mill Market Size, by Supply Scope, 2017-2040 (USD Million)

Supply Scope	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Integrated Milling Packages	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Standalone Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 234. Africa Ultra Fine Grinding Mill Market Size, by Mill Technology, 2017-2040 (USD Million)

Mill Technology	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Cutting Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Disc and Colloid Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Gas-Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mechanical Impact Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Media Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Roller Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wet-Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 235. Africa Ultra Fine Grinding Mill Market Size, by Media Mills, 2017-2040 (USD Million)

Media Mills	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Rotary and Planetary Ball Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Stirred Media Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Vibratory Media Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 236. Africa Ultra Fine Grinding Mill Market Size, by Gas-Jet Mills, 2017-2040 (USD Million)

Gas-Jet Mills	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Loop Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Opposed-Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Spiral Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Target Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 237. Africa Ultra Fine Grinding Mill Market Size, by Processed Material, 2017-2040 (USD Million)

Processed Material	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Biomass and Natural Ingredients	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Carbonaceous Materials	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Formulations and Composites	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Industrial Minerals	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Inorganic Chemicals, Ceramics, and Glass	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Metal Ores and Concentrates	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Metals and Alloys	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Organic Chemicals	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Polymers and Elastomers	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 238. Africa Ultra Fine Grinding Mill Market Size, by Buyer Industry, 2017-2040 (USD Million)

Buyer Industry	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Chemical and Fuel Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Electrical and Electronic Product Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Food, Beverage, and Feed Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Glass, Ceramics, and Construction Materials Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Materials Recovery and Recycling	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Metals and Fabricated Metal Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mining and Mineral Processing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Pharmaceutical Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Power and Heat Generation	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Research, Education, and Testing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Rubber and Plastics Product Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wood, Pulp, and Paper Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Others	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 239. Africa Ultra Fine Grinding Mill Market Size, by Deployment Scale, 2017-2040 (USD Million)

Deployment Scale	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Industrial Production	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Laboratory	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Pilot	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 240. Africa Ultra Fine Grinding Mill Market Size, by Sales Channel, 2017-2040 (USD Million)

Sales Channel	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Agent-Mediated Sales	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Independent Reseller Sales	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Manufacturer-Direct Sales	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 241. Africa Ultra Fine Grinding Mill Market Size, by Processing State, 2017-2040 (USD Million)

Processing State	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Dry Grinding	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wet and Dry Grinding	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wet Grinding	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 242. Africa Ultra Fine Grinding Mill Market Size, by Operating Mode, 2017-2040 (USD Million)

Operating Mode	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Batch	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Batch and Continuous	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Continuous	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Sources & Evidence

1. Mach for mixing/kneading/crushing/grinding etc imports by country | 2024
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: South Africa USD xx.xx and Egypt USD xx.xx, together with additional African reporters, anchor the purchasing baskets.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: South Africa USD xx.xx and Egypt USD xx.xx, together with additional African reporters, anchor the purchasing baskets.
2. Crushing/grinding machines for earth/ stone/ore imports by country | 2024
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: African reporter observations include major destinations outside the mandatory-country inventory, constraining a substantial noncatalog demand pool.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: African reporter observations include major destinations outside the mandatory-country inventory, constraining a substantial noncatalog demand pool.
3. World Manufacturing Production and Trade, Quarter IV 2025
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: African output observations include national counterexamples, supporting differentiated rather than uniform purchasing assumptions.

4. Metso receives order for grinding mills to a copper project in Africa
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The EUR xx.xx August 2024 HIGmill equipment/auxiliary/services order establishes a commercial package in Africa but identifies neither country nor annual revenue recognition. It constrains attribution and is not added to 2025 demand.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The EUR xx.xx August 2024 HIGmill equipment/auxiliary/services order establishes a commercial package in Africa but identifies neither country nor annual revenue recognition. It constrains attribution and is not added to 2025 demand.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Approximately EUR xx.xx 2024 HIGmill order includes auxiliaries and services; a package-scale anchor, not recognized annual revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Approximately EUR xx.xx 2024 HIGmill order includes auxiliaries and services; a package-scale anchor, not recognized annual revenue.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The copper-project award establishes an ore/concentrate commercial purchasing context.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The copper-project award establishes an ore/concentrate commercial purchasing context.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The award concerns an African mining project; it does not disclose the global mining-buyer share.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The award concerns an African mining project; it does not disclose the global mining-buyer share.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Large industrial equipment procurement supports the production-scale category premise.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Large industrial equipment procurement supports the production-scale category premise.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The August xx.xx 2024 announcement records an approximately EUR xx.xx HIGmill order including auxiliaries and services. It anchors package-level commercial materiality, not a mill unit price or 2025 recognized revenue. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The August xx.xx 2024 announcement records an approximately EUR xx.xx HIGmill order including auxiliaries and services. It anchors package-level commercial materiality, not a mill unit price or 2025 recognized revenue. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The stirred-package order supports the Media Mills value-weight model and continuing commercial-demand premise, with order-to-revenue timing unresolved. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The stirred-package order supports the Media Mills value-weight model and continuing commercial-demand premise, with order-to-revenue timing unresolved. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))

5. Hosokawa Micron - FY2025 Financial Results Presentation, November 25, 2025 (Japanese)
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; material attribution modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; material attribution modeled.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; establishment attribution modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; establishment attribution modeled.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; buyer attribution assumed.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; buyer attribution assumed.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; qualifying power attribution unverified.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; qualifying power attribution unverified.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; institutional attribution assumed.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; institutional attribution assumed.
6. HIGmill Plant - Metso
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Standalone marketing terminology does not establish the study's Standalone Mills equipment scope.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Standalone marketing terminology does not establish the study's Standalone Mills equipment scope.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: HIGmill Plant includes pre-engineered auxiliary modules, supporting classification as an equipment package.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: HIGmill Plant includes pre-engineered auxiliary modules, supporting classification as an equipment package.
7. IsaMill - About, Technology Partnership and Engineering
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Delivery alternatives permit mill-only supply or additional auxiliary equipment; actual equipment scope determines attribution.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Delivery alternatives permit mill-only supply or additional auxiliary equipment; actual equipment scope determines attribution.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Modular auxiliary-inclusive and turnkey alternatives support differentiated package scope, without proving a global adoption percentage.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Modular auxiliary-inclusive and turnkey alternatives support differentiated package scope, without proving a global adoption percentage.

8. Commission Processing - NIPPON COKE & ENGINEERING CO., LTD.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Own commercial processing portfolio identifies glass, ceramics and inorganic materials; establishes material mapping, not equipment revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own commercial processing portfolio identifies glass, ceramics and inorganic materials; establishes material mapping, not equipment revenue.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Organic pigments are named commercial processing materials.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Organic pigments are named commercial processing materials.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Metal powders are named commercial processing materials.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Metal powders are named commercial processing materials.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Carbon is identified in the operator's commercial grinding portfolio.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Carbon is identified in the operator's commercial grinding portfolio.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Thermosetting resin supports a polymer-material category premise.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Thermosetting resin supports a polymer-material category premise.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Ink-related grinding establishes a commercial reference but does not resolve whole-formulation versus constituent duty.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Ink-related grinding establishes a commercial reference but does not resolve whole-formulation versus constituent duty.
9. Micronization / Grinding - A. Ebbecke Verfahrenstechnik AG
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Commercial contract-grinding coverage includes natural materials and food ingredients; processing fees are excluded from equipment value.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Commercial contract-grinding coverage includes natural materials and food ingredients; processing fees are excluded from equipment value.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Plastic granulates and resins establish material coverage, not downstream customers' equipment ownership.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Plastic granulates and resins establish material coverage, not downstream customers' equipment ownership.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operator-side food-processing reference supports establishment attribution rather than automatically assigning equipment to its customers.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operator-side food-processing reference supports establishment attribution rather than automatically assigning equipment to its customers.

10. Manufacturing Capabilities - Asbury Advanced Materials
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Own manufacturing disclosure identifies carbon-material grinding and micronization; supports the material-duty premise only.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own manufacturing disclosure identifies carbon-material grinding and micronization; supports the material-duty premise only.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Custom formulations and dispersions are commercial outputs, but joint whole-formulation milling remains unmeasured.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Custom formulations and dispersions are commercial outputs, but joint whole-formulation milling remains unmeasured.
11. Pyrum Innovations AG - Interim Group Report January 1 to June 30, 2025
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The purchaser's 2025 report records a grinding-plant installation associated with recovered carbon black; no downstream material revenue is counted.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The purchaser's 2025 report records a grinding-plant installation associated with recovered carbon black; no downstream material revenue is counted.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The report establishes an actual recovery-business equipment context, while the exact attributable mill expenditure remains undisclosed.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The report establishes an actual recovery-business equipment context, while the exact attributable mill expenditure remains undisclosed.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The disclosed commercial-site grinding installation supports Industrial Production classification.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The disclosed commercial-site grinding installation supports Industrial Production classification.
12. NRRI Advances Efficient Grinding Technology on the Iron Range
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The institution distinguishes a planned bench-scale purchase from its loaned pilot equipment; not a completed-sale census.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The institution distinguishes a planned bench-scale purchase from its loaned pilot equipment; not a completed-sale census.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The May xx.xx 2024 account identifies a loaned pilot stirred mill; unpaid placement is not counted as equipment-sale revenue.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The May xx.xx 2024 account identifies a loaned pilot stirred mill; unpaid placement is not counted as equipment-sale revenue.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operating research institute is distinct from its mining clients, supporting buyer/material separation.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operating research institute is distinct from its mining clients, supporting buyer/material separation.

13. Planetary Ball Mill PM 100 - RETSCH
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The PM xx.xx is marketed as a benchtop instrument, supporting the small-laboratory pool classification without establishing sales weight.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The PM xx.xx is marketed as a benchtop instrument, supporting the small-laboratory pool classification without establishing sales weight.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The individual-instrument offering supports a narrower equipment-supply alternative; package incidence remains modeled.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The individual-instrument offering supports a narrower equipment-supply alternative; package incidence remains modeled.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: PM xx.xx is a marketed benchtop planetary platform, supporting laboratory-category mapping rather than shipment or price weights. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: PM xx.xx is a marketed benchtop planetary platform, supporting laboratory-category mapping rather than shipment or price weights. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The product page advertises both dry and wet capability. Actual dual-state purchase inclusion remains an explicit model assumption. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The product page advertises both dry and wet capability. Actual dual-state purchase inclusion remains an explicit model assumption. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))
14. Jet Mill - Contract History CW2408170, CanadaBuys
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: A May xx.xx 2026 laboratory jet-mill award totals CAD xx.xx; a dated procurement check, not a 2025 shipment or global average price.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: A May xx.xx 2026 laboratory jet-mill award totals CAD xx.xx; a dated procurement check, not a 2025 shipment or global average price.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The record distinguishes Natural Resources Canada as buying organization from PSPC as contracting organization, supporting establishment attribution.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The record distinguishes Natural Resources Canada as buying organization from PSPC as contracting organization, supporting establishment attribution.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The jet-mill award totals CAD xx.xx and is dated May xx.xx 2026. It is a nearby-period laboratory purchasing comparator, not a 2025 recognized sale, and supplies neither a gas-jet subtype nor a definitive channel role. ([canadabuys.canada.ca](https://canadabuys.canada.ca/en/tender-opportunities/contract-history/cw2408170-xx.xx))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The jet-mill award totals CAD xx.xx and is dated May xx.xx 2026. It is a nearby-period laboratory purchasing comparator, not a 2025 recognized sale, and supplies neither a gas-jet subtype nor a definitive channel role. ([canadabuys.canada.ca](https://canadabuys.canada.ca/en/tender-opportunities/contract-history/cw2408170-xx.xx))

15. MFC Production Equipment - FiberLean
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The manufacturer's commercial offering targets pulp, paper and related establishments; it is not a measured industry sales share.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The manufacturer's commercial offering targets pulp, paper and related establishments; it is not a measured industry sales share.
16. Pulverizing Equipment - Coperion
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The broader portfolio names power-generation applications and separately lists ultrafine equipment; this limits, rather than verifies, the assumed qualifying power-buyer allocation.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The broader portfolio names power-generation applications and separately lists ultrafine equipment; this limits, rather than verifies, the assumed qualifying power-buyer allocation.
17. LG Energy Solution Releases 2025 Financial Results - January 29, 2026
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own 2025 revenue decline and dated 2026 capital-expenditure reduction target constrain battery-related equipment-adoption assumptions.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Existing-asset reuse strategy qualifies a direct downstream-demand-to-new-carbon-material-mill investment inference.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Buyer investment restraint constrains the relative application multiplier; upstream chemical attribution remains separately assumed.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own battery-manufacturer financial and investment plans provide a counter-test, not an ultrafine equipment purchasing total.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The January 2026 emphasis on reduced new investment qualifies automatic growth in broader equipment-package adoption.
18. UNSD Classification Detail - ISIC Rev.4, Class 3830: Materials Recovery
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The official classification distinguishes secondary-material recovery from manufacture of new final products; it supplies no equipment sales weight.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The official classification distinguishes secondary-material recovery from manufacture of new final products; it supplies no equipment sales weight.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Recovered-input use alone does not classify the equipment operator as a recovery establishment rather than a product manufacturer.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Recovered-input use alone does not classify the equipment operator as a recovery establishment rather than a product manufacturer.

19. Ultrafin Mill: Super Masscolloider, Masuko MKCA6-5J CE - University of Ljubljana
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The university inventories a laboratory ultrafine mill within wood science; the institutional operator is not a wood-products manufacturer.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The university inventories a laboratory ultrafine mill within wood science; the institutional operator is not a wood-products manufacturer.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The institutional inventory expressly identifies laboratory equipment, supporting deployment classification without establishing a purchase-year value.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The institutional inventory expressly identifies laboratory equipment, supporting deployment classification without establishing a purchase-year value.
20. Contract Manufacturing of Pharmaceuticals - YUKI GOSEI KOGYO CO., LTD.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operator distinguishes production jet mills from smaller equipment, supporting industrial deployment at a pharmaceutical contract manufacturer.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operator distinguishes production jet mills from smaller equipment, supporting industrial deployment at a pharmaceutical contract manufacturer.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The actual pharmaceutical manufacturing operator is distinct from customers outsourcing production; processing-service receipts remain excluded.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The actual pharmaceutical manufacturing operator is distinct from customers outsourcing production; processing-service receipts remain excluded.
21. Record year for Metso stirred mills as mining industry opts for energy-efficient comminution technology
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Metso reports more than twenty Vertimill sales in 2025 and approximately xx.xx cumulative stirred-mill deliveries. Broader application coverage prevents treating these as ultrafine-only annual shipments; they constrain the modeled stirred/mining allocation and forecast premise. ([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Metso reports more than twenty Vertimill sales in 2025 and approximately xx.xx cumulative stirred-mill deliveries. Broader application coverage prevents treating these as ultrafine-only annual shipments; they constrain the modeled stirred/mining allocation and forecast premise. ([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The disclosed stirred-equipment activity supports material Media Mills participation, not the final modeled parent share. ([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The disclosed stirred-equipment activity supports material Media Mills participation, not the final modeled parent share. ([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))

22. Bühler strengthens its market position

- Evidence informing base-year allocation inputs; displayed values and growth are calculated: Bühler reports xx.xx% Grinding & Dispersing order growth in 2025 against a xx.xx% decline in broader Advanced Materials orders. This is a mixed commercial leading indicator, not observed market-share growth. ([buhlergroup.com](https://www.buhlergroup.com/global/en/media/media-releases/b%C3%BChler-strengthens-its-marketposition.html))
- Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Bühler reports xx.xx% Grinding & Dispersing order growth in 2025 against a xx.xx% decline in broader Advanced Materials orders. This is a mixed commercial leading indicator, not observed market-share growth. ([buhlergroup.com](https://www.buhlergroup.com/global/en/media/media-releases/b%C3%BChler-strengthens-its-marketposition.html))
- Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The disclosed battery-related and other application orders constrain differentiated Media Mills forecast assumptions without converting orders directly to annual equipment revenue. ([buhlergroup.com](https://www.buhlergroup.com/global/en/media/media-releases/b%C3%BChler-strengthens-its-marketposition.html))

23. Management Greetings | HOSOKAWAMICRON CORPORATION

- Evidence informing base-year allocation inputs; displayed values and growth are calculated: Hosokawa reports FY2025 net sales of JPY xx.xx, down xx.xx%, and orders down xx.xx%. The diversified-company result challenges uniform purchasing acceleration and constrains, rather than directly measures, technology-mix assumptions. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/ir/management_policy/management_greetings.html))
- Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Hosokawa reports FY2025 net sales of JPY xx.xx, down xx.xx%, and orders down xx.xx%. The diversified-company result challenges uniform purchasing acceleration and constrains, rather than directly measures, technology-mix assumptions. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/ir/management_policy/management_greetings.html))
- Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The same broader financial contraction is counterevidence to assuming uniform Media Mills growth across suppliers; no corporate revenue is assigned directly to the category. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/ir/management_policy/management_greetings.html))

24. Details of micromeritics | HOSOKAWAMICRON CORPORATION

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Hosokawa identifies its AS spiral offering, supporting subtype mapping rather than a sales weight. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Hosokawa identifies its AS spiral offering, supporting subtype mapping rather than a sales weight. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The AFG/TFG counterjet offerings support the retained Opposed-Jet commercial mapping. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The AFG/TFG counterjet offerings support the retained Opposed-Jet commercial mapping. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The manufacturer identifies Innovomizer as a mechanical ultrafine offering; ordinary impact equipment is not automatically included. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The manufacturer identifies Innovomizer as a mechanical ultrafine offering; ordinary impact equipment is not automatically included. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

25. Grinding Equipment Manufacturer Supplier Factory, Grinding System | Longly

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: LONGLY discloses current annual capacity above 2,000 equipment units and commercial wet-grinding offerings. Capacity is bridged through explicitly assumed timing, utilization and eligible-product factors; it is not reported 2025 stirred-mill shipments. ([longlymill.com](https://www.longlymill.com/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: LONGLY discloses current annual capacity above 2,000 equipment units and commercial wet-grinding offerings. Capacity is bridged through explicitly assumed timing, utilization and eligible-product factors; it is not reported 2025 stirred-mill shipments. ([longlymill.com](https://www.longlymill.com/))

26. Ultra-Fine Grinding - Hosokawa Micron Malaysia

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The inspected ultrafine portfolio identifies AWM-F table-roller equipment, supporting the qualifying Roller Mills boundary, not its assumed counts or prices. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The inspected ultrafine portfolio identifies AWM-F table-roller equipment, supporting the qualifying Roller Mills boundary, not its assumed counts or prices. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Super Orion is a marketed rotary ball-mill constituent of the combined rotary/planetary category. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Super Orion is a marketed rotary ball-mill constituent of the combined rotary/planetary category. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: MJT is explicitly listed as a target-type offering, supporting precedence of the named platform over overlapping generic jet terminology. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: MJT is explicitly listed as a target-type offering, supporting precedence of the named platform over overlapping generic jet terminology. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

27. Loop Jet Mill - Consistency. Compliance. Engineered.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The current named Loop Jet Mill listing establishes an offered commercial platform. It supports forecast category continuity, but does not disclose subtype revenue or prove 2025 sales. ([jetmillmfg.com](https://www.jetmillmfg.com/loop-jet-mill/))
28. SWECO Vibratory Grinding and Particle Size Reduction Equipment
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: SWECO markets Vibro-Energy grinding equipment with separate wet and wet/dry offerings. This supports commercial category and configuration mapping, not the modeled frequency of purchases. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: SWECO markets Vibro-Energy grinding equipment with separate wet and wet/dry offerings. This supports commercial category and configuration mapping, not the modeled frequency of purchases. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Named wet/dry models establish dual-state availability; they do not establish the exact supplied configuration or a market-wide value share. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Named wet/dry models establish dual-state availability; they do not establish the exact supplied configuration or a market-wide value share. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))
29. Fine-cutting mill with rotating classifying feature - the sensational new development!
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The September xx.xx 2014 own-product announcement establishes a pre-base-year SecoMy S cutting offering described for ultrafine commercial applications. It is category evidence, not annual equipment revenue. ([grinding.netzsch.com](https://grinding.netzsch.com/en/news/2014/fine-cutting-mill-with-rotating-classifying-feature-the-sensational-new-development))
30. NETZSCH SecoMy S - Precision Cutting Redefined!
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The August 2026 SecoMy S brochure confirms continuing commercial ultrafine-cutting positioning and system-supply availability. It supports category persistence, not the assumed forecast spending share. ([grinding.netzsch.com](https://grinding.netzsch.com/_Resources/Persistent/xx.xx/e/xx.xx/b/8e4b5adcfc16fcc2d83974f8080d614cce1a2c01/NETZSCH_Fine_Cutting_Mill_SecoMy_S_e.pdf))
31. Wet Milling and Dispersing Device - Star Burst - Sugino Corp.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: SUGINO's Star Burst portfolio identifies wet-jet equipment across research and production purchasing contexts. Only milling-attributable supply is included; adjacent droplet-only or dispersion activity is not automatically counted. ([suginocorp.com](https://www.suginocorp.com/star-burst/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: SUGINO's Star Burst portfolio identifies wet-jet equipment across research and production purchasing contexts. Only milling-attributable supply is included; adjacent droplet-only or dispersion activity is not automatically counted. ([suginocorp.com](https://www.suginocorp.com/star-burst/))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The wet-jet offering supports wet-state classification within the joint value model, not the total Wet Grinding share. ([suginocorp.com](https://www.suginocorp.com/star-burst/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The wet-jet offering supports wet-state classification within the joint value model, not the total Wet Grinding share. ([suginocorp.com](https://www.suginocorp.com/star-burst/))

32. IBU-tec | Mills - Milling Technology for Dry and Wet Grinding
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operator table separately lists two dry opposed-jet units. This is an installed-inventory observation, not a shipment or revenue ratio. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operator table separately lists two dry opposed-jet units. This is an installed-inventory observation, not a shipment or revenue ratio. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Three wet agitator-bead units are separately inventoried, supporting state-specific commercial classification without using their count as a market weight. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Three wet agitator-bead units are separately inventoried, supporting state-specific commercial classification without using their count as a market weight. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
33. Comminution - NTNU
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: NTNU separately records wet/dry capability for stirred and planetary equipment; the inventory is not a representative value-share dataset. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: NTNU separately records wet/dry capability for stirred and planetary equipment; the inventory is not a representative value-share dataset. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The planetary equipment is recorded as batch, supporting a laboratory batch context without assuming all laboratories are batch-only. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The planetary equipment is recorded as batch, supporting a laboratory batch context without assuming all laboratories are batch-only. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The laboratory jet rig is recorded as continuous, independently challenging equivalence between continuous mode and industrial scale. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The laboratory jet rig is recorded as continuous, independently challenging equivalence between continuous mode and industrial scale. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
34. Dry Batch Or Continuous Laboratory Mills - Union Process
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Union Process identifies SD-xx.xx as one laboratory offering for both batch and continuous service. Configuration-specific purchase inclusion and revenue are undisclosed. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Union Process identifies SD-xx.xx as one laboratory offering for both batch and continuous service. Configuration-specific purchase inclusion and revenue are undisclosed. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The same named offering advertises wet/dry capability, supporting a dual-state category premise rather than an observed adoption percentage. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The same named offering advertises wet/dry capability, supporting a dual-state category premise rather than an observed adoption percentage. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))

35. Retsch Contact & Services - Contact Partners Worldwide

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: RETSCH describes a network including daughter companies. Manufacturer affiliation, rather than contact location, informs direct-route attribution. ([retsch.com](https://www.retsch.com/contact-services/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: RETSCH describes a network including daughter companies. Manufacturer affiliation, rather than contact location, informs direct-route attribution. ([retsch.com](https://www.retsch.com/contact-services/))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The network also includes trained distributors, establishing a resale-access premise but not distributor ownership roles or annual sales weights. ([retsch.com](https://www.retsch.com/contact-services/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The network also includes trained distributors, establishing a resale-access premise but not distributor ownership roles or annual sales weights. ([retsch.com](https://www.retsch.com/contact-services/))

36. HOSOKAWA ALPINE Aktiengesellschaft - Conditions of Sale 371_00 EN

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Hosokawa requires company confirmation of representatives' transactions and makes contractual scope authoritative. The terms support agency-role attribution, not the assumed agent percentage. ([hosokawa-alpine.com](https://www.hosokawa-alpine.com/fileadmin/allgemein/Legal/AGB/AGB_Verkaufsbedingungen_en_371_00.pdf))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Hosokawa requires company confirmation of representatives' transactions and makes contractual scope authoritative. The terms support agency-role attribution, not the assumed agent percentage. ([hosokawa-alpine.com](https://www.hosokawa-alpine.com/fileadmin/allgemein/Legal/AGB/AGB_Verkaufsbedingungen_en_371_00.pdf))

37. UNSD - ISIC Rev.5, Class 4610: Wholesale on a Fee or Contract Basis

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: ISIC Rev.xx.xx class xx.xx defines fee/commission intermediation without ownership, supporting a non-title-taking agency numerator distinct from goods supplied on own account. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: ISIC Rev.xx.xx class xx.xx defines fee/commission intermediation without ownership, supporting a non-title-taking agency numerator distinct from goods supplied on own account. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Own-account wholesale is excluded from the agency class, supporting the reseller/agent partition without supplying ultrafine-mill channel shares. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own-account wholesale is excluded from the agency class, supporting the reseller/agent partition without supplying ultrafine-mill channel shares. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))

38. ITDI-PB-2024-057 - Supply, Delivery, Installation and Commissioning of Ultra-fine Friction Grinder

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The 2024 friction-grinder procurement had a PHP xx.xx budget and failed with no bidder. It establishes a configured-package spending ceiling and commercial category, not a sale or a shipment count. ([notices.philgeps.gov.ph](https://notices.philgeps.gov.ph/GEPSNONPILOT/Tender/PrintableBidNoticeAbstractUI.aspx?refid=xx.xx))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The 2024 friction-grinder procurement had a PHP xx.xx budget and failed with no bidder. It establishes a configured-package spending ceiling and commercial category, not a sale or a shipment count. ([notices.philgeps.gov.ph](https://notices.philgeps.gov.ph/GEPSNONPILOT/Tender/PrintableBidNoticeAbstractUI.aspx?refid=xx.xx))

39. Bangko Sentral ng Pilipinas - Balance of Payments Report, Q4 2024

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The central bank reports a 2024 average of PHP xx.xx per USD. Dividing the failed PHP xx.xx procurement budget by this rate gives an approximately USD xx.xx comparison ceiling, not realized equipment revenue. ([bsp.gov.ph](https://www.bsp.gov.ph/Media_And_Research/Balance%20of%20Payments%20Report/2024/BOP_4qtr2024.pdf))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The central bank reports a 2024 average of PHP xx.xx per USD. Dividing the failed PHP xx.xx procurement budget by this rate gives an approximately USD xx.xx comparison ceiling, not realized equipment revenue. ([bsp.gov.ph](https://www.bsp.gov.ph/Media_And_Research/Balance%20of%20Payments%20Report/2024/BOP_4qtr2024.pdf))

16. Ultra Fine Grinding Mill Market, by Group

Americas coverage requires separating USMCA origin eligibility from broader continental distribution. ▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪ ▪▪▪▪▪▪▪ ▪▪▪▪▪▪ ▪▪▪ ▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪ ▪▪▪ ▪▪▪▪▪▪▪▪ ▪ ▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪ ▪▪▪ ▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪ ▪ ▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪ ▪▪ ▪▪▪▪▪▪▪▪▪▪▪▪▪ Suppliers should obtain the relevant origin substantiation rather than extend North American preference assumptions to Chile, Brazil, or other American destinations.

Europe, Middle East & Africa is useful as an account-management territory, but not as one equipment-acceptance jurisdiction. ▪ ▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪ ▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪▪ ▪ ▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪ ▪▪ ▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪ ▪▪▪▪ ▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪ ▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪▪▪ Geographic reach alone does not establish those commitments.

ASEAN provides shared trade-information infrastructure without replacing national procedures. ▪▪▪ ▪▪▪▪▪ ▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪ ▪▪▪ ▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪▪ ▪▪ ▪▪▪▪▪▪ ▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪ ▪▪▪ ▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪▪ ▪ ▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪ ▪▪▪ ▪▪▪▪▪▪▪▪ ▪▪▪ ▪▪▪ ▪ ▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪ ▪▪▪ ▪▪▪▪▪ ▪▪▪▪▪▪▪▪ ▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪▪▪ A local channel partner is useful only where its mandate actually covers the required administration and support; direct contracting remains an alternative when the purchaser can retain those obligations.

▪▪▪ ▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪ ▪▪▪▪▪▪▪ ▪ ▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪ ▪▪▪ ▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪ ▪▪▪ ▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪ ▪▪▪ ▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪ ▪▪▪ ▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪ ▪▪▪ ▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪ ▪▪▪▪▪▪ ▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪ ▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪ Routing a Saudi-bound mill through the United Arab Emirates therefore does not, by itself, establish Saudi product acceptance. Regional consolidation is conditional on assigning the final-destination documentation responsibilities.

Australasia should not be treated as an automatically transferable equipment pool. ▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪ ▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪ ▪▪▪ ▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪ ▪▪ ▪▪▪ ▪▪▪▪▪▪▪▪▪ ▪▪▪▪ ▪▪▪▪▪▪▪▪ ▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪ ▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪▪ ▪ ▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪ ▪▪▪ ▪▪▪ ▪▪▪▪▪▪▪ ▪▪▪▪▪▪ ▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪ ▪▪▪ ▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪ ▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪ ▪▪▪ ▪▪▪▪▪▪▪▪▪▪ ▪▪▪ ▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪ Separate country supply is the defensible alternative until those conditions are resolved.

▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪ ▪▪ ▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪ ▪▪▪ ▪▪▪ ▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪▪ ▪▪ ▪▪▪▪▪▪▪ ▪▪▪ ▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪▪▪ ▪▪ ▪▪▪▪▪▪▪

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The European Union provides a shared machinery framework rather than automatic buyer approval. ■■■ ■■■■■■■■■ ■■■■■■■■■■ ■■■■■■■■■ ■■■■■■■■ ■■■■■■■■■ ■■ ■■■■■■■■ ■■■ ■■■■■■ ■■■■■■■■■ ■■■■■■■■■ ■■■■■■■■■■■■■ ■■■ ■■■■■■■■■■ ■■■■■■■■■■ ■■■■■■■■■■ ■■■■■■■ ■■■■■■■■■ ■■■■■■■■ ■■■■■■■ ■■■■■■■ ■■■■■■■■■ ■■■ ■■■■■■■■■■ ■■■■■■■■■■■■■■■■ ■■■■■■ ■■■ ■■■■■■■■■ ■■■■■■■■■■■■■■■ ■■■■■■ ■■■■■■■■■■■■ A voluntary-standard claim should not substitute for the relevant legal obligations or the purchaser's acceptance.

■■■■■ ■■■■■■■■■■■ ■■■■ ■■■ ■■■■■■■■■ ■■■■■■■■ ■■■■■■■■■■■ ■■ ■■■■ ■■■■■■■■■■■■ ■■■ ■■■ ■■■■ ■■■■■■■■■■■■■■■■■ ■■■■■■■■ ■■■■■■■ ■■■■■■■■■■■ ■■■■■ ■■■■■■■■■■ ■■■■■■■■ ■■■■■■■■■■ ■■ ■■■■ ■■■■■■■■■■■■ For a proposed common remote-support agreement covering customers in China, India, and Brazil, suppliers should verify country-specific data permissions and performance obligations before standardizing the contract. Shared commercial administration may be practical, but political-group membership does not establish equipment qualification or permission to transfer customer information.

G7 critical-minerals policy is a project-screening signal, not a milling-equipment purchase commitment. The June 2025 action plan supports investment, processing, recycling, and responsible supply chains, including cooperation beyond the G7. ■■■■■■■■■ ■■■■■■■■ ■■■■■■■ ■■ ■■■■■■■■ ■■■■■■■ ■■■■■■■■ ■■ ■■■■■ ■■■■■■■■■■■■ ■■■■■■■ ■■■ ■■■■■■■■ ■■■■■■■■■■■ ■■ ■■■■■■■■■■■■ ■■■■■■■ ■■■■■■■■ ■■■ ■■■■■■■■■■ ■■■■■■■■■■■■■ ■ ■■■■■■■■ ■■■■■■■■■■■■ ■■ ■■■ ■■■■■■■■■■■■ ■■■■ ■■■ ■■■■■■■■■ ■■ ■■■■■■■■■■ ■■■■■■■■■■■ ■■■■■■■■■■ ■■■ ■■■ ■■■■■■■ ■■■■■■■ ■■■■ ■■■ ■■■■■■■■■ ■■■■■ ■■■■ ■■■■ ■■ ■■■■■■■■■■

NATO is a conditional institutional procurement channel, not a civil-equipment market-access passport. ■■■■■■■■ ■■■■■■■■ ■■■■■■■■ ■■■■■■■■ ■■■■■■■■■■■ ■■■■■■■■■■ ■■■■■■■ ■■■■■ ■■■■■■■■ ■■■■■■■■■■■■■ ■■■ ■■■■■■■■■■■ ■■■■■■■■■■■■■ ■■■■■■■■ ■■■■■■■■■ ■■■■■■■ ■■■■■■■ ■■■■■ ■■■■■ ■■■■■ ■■■■■ ■ ■■■■■■■■■■■■ ■■■■■■■■■■■ ■ ■■■■■■■■■ ■■■■■■■■■■ ■■■■■■■■■■■ ■■■ ■■■■■■■■■■■■■ Registration is not evidence of milling demand, an award, or acceptance for ordinary industrial sales in Canada or other NATO constituents.

■■■■■ ■■■■■■■ ■■■■■■■■ ■■■■■■■■■■■■■■ ■■■ ■■■ ■■■■■■■■■■■■■■ Their value is explaining different commercial relationships and access conditions; a destination appearing in several groups remains one destination for transaction-level diligence.

Figure 27. Global Ultra Fine Grinding Mill Market Size, by Group, 2025 vs 2026 vs 2032

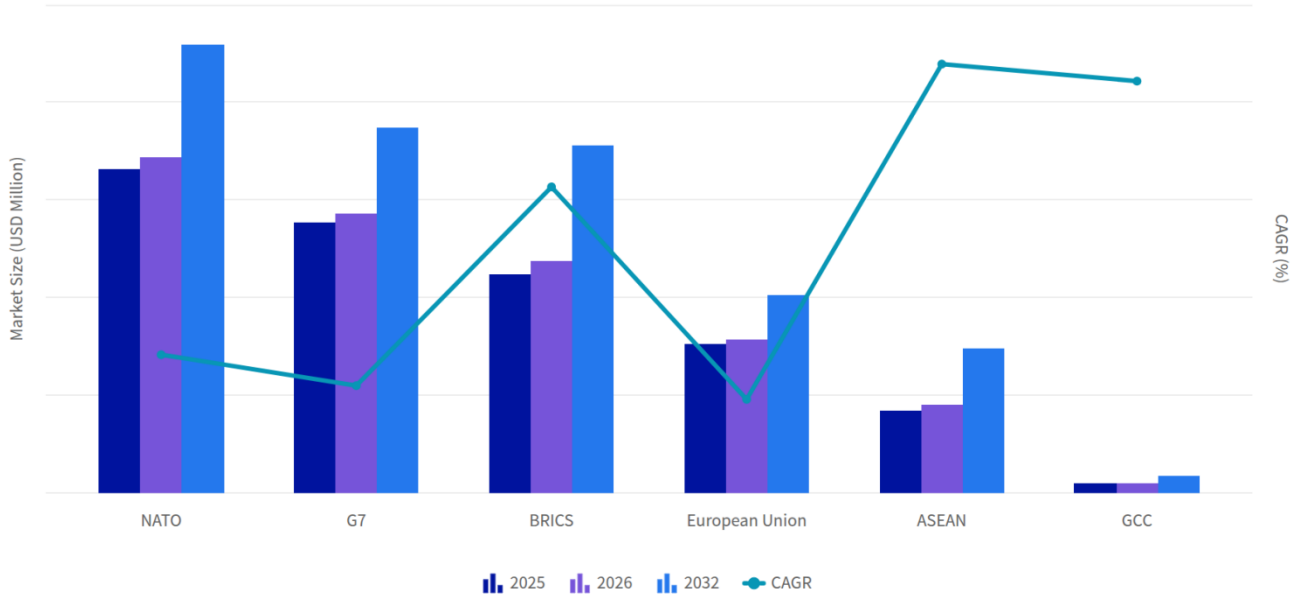


Table 243. Global Ultra Fine Grinding Mill Market Size, by Group, 2017-2040 (USD Million)

Group	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
ASEAN	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
BRICS	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
European Union	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
G7	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
GCC	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
NATO	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx

Sources & Evidence

1. Metso Receives Order for Grinding Mills to a Copper Project in Africa

   · The Finnish supplier's African award demonstrates a cross-regional commercial commitment, not uniform EMEA product acceptance or local service allocation. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))

2. Machinery - European Commission

   · The European Commission identifies January xx.xx 2027, as the Machinery Regulation's general mandatory application date and distinguishes mandatory essential requirements from voluntary harmonized standards. ([single-market-economy.ec.europa.eu](https://single-market-economy.ec.europa.eu/sectors/mechanical-engineering/machinery_en))

3. FAQs - European Free Trade Association

   · The EEA relationships of Norway and Iceland provide a shared internal-market context without establishing a common EFTA customs union or a supplier's Nordic service commitments. ([efta.int](https://www.efta.int/about-efta/faqs))

4. Technical regulations - SASO
   · Saudi Arabia's separately published machinery regulation supports distinguishing national acceptance from a supplier's broader EMEA commercial reach. ([saso.gov.sa](https://www.saso.gov.sa/en/Laws-And-Regulations/technical_regulations/Pages/default.aspx))
5. USMCA DayOne
   · USMCA preferential claims require certification that goods qualify as originating, with supporting data and importer care concerning documentation accuracy. Reseller location alone does not establish qualification. ([trade.gov](https://www.trade.gov/usmca-dayone-xx.xx))
6. Procedures and documentary requirements - ASEAN Trade Repository
   · The ASEAN Trade Repository organizes documentary, licensing, and customs-formality information by member state. Its shared information role does not replace national requirements. ([atr.asean.org](https://atr.asean.org/read/procedures-and-documentary-requirements/xx.xx))
7. Customs Union for GCC States - Federal Authority for Identity, Citizenship, Customs & Port Security
   · UAE customs-union guidance describes first-entry inspection, clearance, and duty collection; it is distinct from a destination's product-registration process. ([icp.gov.ae](https://icp.gov.ae/en/customs-union-for-gcc/))
8. Registration of a product conformity certificate - SASO
   · SASO's product conformity-certificate service targets local manufacturers and importers and requires product registration, model information, and applicable documentation. ([saso.gov.sa](https://www.saso.gov.sa/en/eservices/pages/details.aspx?serviceid=xx.xx))
9. Importing motor vehicles, motorcycles, tyres and machinery - DAFF
   · Australian guidance distinguishes new from previously used machinery and assigns import biosecurity responsibilities to the importer. It does not establish acceptance in New Zealand; cross-Tasman transferability remains unresolved. ([agriculture.gov.au](https://www.agriculture.gov.au/import/goods/vehicles-machinery))
10. Joint Declaration of the 15th BRICS Trade Ministers Meeting
    · The May 2025 BRICS trade-ministerial outcomes support cooperation; their data-governance framework preserves national legal frameworks and national authority over data. Application to a proposed milling-support contract is a conditional commercial inference. ([gov.br](https://www.gov.br/mdic/pt-br/centrais-de-conteudo/publicacoes/brics/comercio/ingles/brics_tmm_package_of_outcomes_v21-xx.xx-25_final-version.pdf))
11. G7 Critical Minerals Action Plan
    · The June xx.xx 2025, G7 Critical Minerals Action Plan supports investment, responsible supply, processing, recycling, and cooperation beyond the G7. It is a policy commitment, not a milling-equipment procurement record. ([consilium.europa.eu](https://www.consilium.europa.eu/media/rwkj3dls/minerals-en.pdf))
12. Frequently asked questions - Doing business with NATO - Canada.ca
    · Canadian defense guidance directs prospective suppliers to NSPA business opportunities and source-file registration. This establishes an institutional access route, not a qualifying mill solicitation or award. ([canada.ca](https://www.canada.ca/en/department-national-defence/services/doing-business-with-foreign-defence-markets/frequently-asked-questions-doing-business-with-nato.html))

16.1. NATO

Table 244. NATO Ultra Fine Grinding Mill Market, by Country growth contribution, 2025-2032

Category	2025 value (USD Million)	2032 value (USD Million)	Added value (USD Million)	2025 share (%)	2032 share (%)	Change (pp)	Growth share (%)	CAGR (%)
Albania	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Belgium	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Bulgaria	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx

RESEARCH SAMPLE REPORT

Table 244 - continued

Category	2025 value (USD Million)	2032 value (USD Million)	Added value (USD Million)	2025 share (%)	2032 share (%)	Change (pp)	Growth share (%)	CAGR (%)
Canada	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Croatia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Czech Republic	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Denmark	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Estonia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Finland	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
France	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Germany	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Greece	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Hungary	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Iceland	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Italy	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Latvia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Lithuania	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Luxembourg	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Montenegro	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Netherlands	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
North Macedonia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Norway	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Poland	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Portugal	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Romania	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Slovakia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Slovenia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Spain	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Sweden	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Turkey	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United Kingdom	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United States	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Scope total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 245. NATO Ultra Fine Grinding Mill Market Size, by Group, 2017-2040 (USD Million)

Group	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Albania	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Belgium	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Bulgaria	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Canada	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Croatia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Czech Republic	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Denmark	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Estonia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Finland	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
France	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Germany	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Greece	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Hungary	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Iceland	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Italy	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Latvia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Lithuania	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Luxembourg	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Montenegro	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Netherlands	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
North Macedonia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Norway	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Poland	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Portugal	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Romania	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Slovakia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Slovenia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Spain	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Sweden	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Turkey	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United Kingdom	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United States	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx

Table 246. NATO Ultra Fine Grinding Mill Market Size, by Supply Scope, 2017-2040 (USD Million)

Supply Scope	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Integrated Milling Packages	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Standalone Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 247. NATO Ultra Fine Grinding Mill Market Size, by Mill Technology, 2017-2040 (USD Million)

Mill Technology	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Cutting Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Disc and Colloid Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Gas-Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mechanical Impact Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Media Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Roller Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wet-Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 248. NATO Ultra Fine Grinding Mill Market Size, by Media Mills, 2017-2040 (USD Million)

Media Mills	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Rotary and Planetary Ball Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Stirred Media Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Vibratory Media Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 249. NATO Ultra Fine Grinding Mill Market Size, by Gas-Jet Mills, 2017-2040 (USD Million)

Gas-Jet Mills	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Loop Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Opposed-Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Spiral Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Target Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 250. NATO Ultra Fine Grinding Mill Market Size, by Processed Material, 2017-2040 (USD Million)

Processed Material	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Biomass and Natural Ingredients	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Carbonaceous Materials	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Formulations and Composites	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Industrial Minerals	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Inorganic Chemicals, Ceramics, and Glass	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Metal Ores and Concentrates	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Metals and Alloys	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Organic Chemicals	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Polymers and Elastomers	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 251. NATO Ultra Fine Grinding Mill Market Size, by Buyer Industry, 2017-2040 (USD Million)

Buyer Industry	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Chemical and Fuel Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Electrical and Electronic Product Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Food, Beverage, and Feed Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Glass, Ceramics, and Construction Materials Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Materials Recovery and Recycling	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Metals and Fabricated Metal Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mining and Mineral Processing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Pharmaceutical Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Power and Heat Generation	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Research, Education, and Testing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Rubber and Plastics Product Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wood, Pulp, and Paper Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Others	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 252. NATO Ultra Fine Grinding Mill Market Size, by Deployment Scale, 2017-2040 (USD Million)

Deployment Scale	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Industrial Production	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Laboratory	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Pilot	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 253. NATO Ultra Fine Grinding Mill Market Size, by Sales Channel, 2017-2040 (USD Million)

Sales Channel	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Agent-Mediated Sales	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Independent Reseller Sales	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Manufacturer-Direct Sales	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 254. NATO Ultra Fine Grinding Mill Market Size, by Processing State, 2017-2040 (USD Million)

Processing State	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Dry Grinding	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wet and Dry Grinding	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wet Grinding	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 255. NATO Ultra Fine Grinding Mill Market Size, by Operating Mode, 2017-2040 (USD Million)

Operating Mode	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Batch	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Batch and Continuous	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Continuous	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Sources & Evidence

1. Business Unit Grinding & Dispersing - NETZSCH

   · Evidence informing base-year allocation inputs; displayed values and growth are calculated: Documented U.S. production and local commercial operations support an explicit, uncertain domestic-supply bridge rather than treating imports as the entire numerator.

   · Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Documented U.S. production and local commercial operations support an explicit, uncertain domestic-supply bridge rather than treating imports as the entire numerator.

2. Methodology - UNIDO Industrial Analytics Platform
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The methodology notes that U.S. trade coverage includes Puerto Rico, reinforcing that the national purchasing proxy must not be renormalized to the xx.xx-state inventory.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The methodology notes that U.S. trade coverage includes Puerto Rico, reinforcing that the national purchasing proxy must not be renormalized to the xx.xx-state inventory.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The methodology identifies Monaco within French trade coverage; the customs input is an imperfect national demand proxy rather than a directly observed country numerator.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The methodology identifies Monaco within French trade coverage; the customs input is an imperfect national demand proxy rather than a directly observed country numerator.
3. Hosokawa Micron - FY2025 Financial Results Presentation, November 25, 2025 (Japanese)
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; material attribution modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; material attribution modeled.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; establishment attribution modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; establishment attribution modeled.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; buyer attribution assumed.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; buyer attribution assumed.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; qualifying power attribution unverified.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; qualifying power attribution unverified.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; institutional attribution assumed.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; institutional attribution assumed.

4. Metso Receives Order for Grinding Mills to a Copper Project in Africa
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Approximately EUR xx.xx 2024 HIGmill order includes auxiliaries and services; a package-scale anchor, not recognized annual revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Approximately EUR xx.xx 2024 HIGmill order includes auxiliaries and services; a package-scale anchor, not recognized annual revenue.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The copper-project award establishes an ore/concentrate commercial purchasing context.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The copper-project award establishes an ore/concentrate commercial purchasing context.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The award concerns an African mining project; it does not disclose the global mining-buyer share.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The award concerns an African mining project; it does not disclose the global mining-buyer share.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Large industrial equipment procurement supports the production-scale category premise.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Large industrial equipment procurement supports the production-scale category premise.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The August xx.xx 2024 announcement records an approximately EUR xx.xx HIGmill order including auxiliaries and services. It anchors package-level commercial materiality, not a mill unit price or 2025 recognized revenue. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The August xx.xx 2024 announcement records an approximately EUR xx.xx HIGmill order including auxiliaries and services. It anchors package-level commercial materiality, not a mill unit price or 2025 recognized revenue. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The stirred-package order supports the Media Mills value-weight model and continuing commercial-demand premise, with order-to-revenue timing unresolved. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The stirred-package order supports the Media Mills value-weight model and continuing commercial-demand premise, with order-to-revenue timing unresolved. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
5. HIGmill Plant - Metso
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Standalone marketing terminology does not establish the study's Standalone Mills equipment scope.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Standalone marketing terminology does not establish the study's Standalone Mills equipment scope.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: HIGmill Plant includes pre-engineered auxiliary modules, supporting classification as an equipment package.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: HIGmill Plant includes pre-engineered auxiliary modules, supporting classification as an equipment package.

6. IsaMill - About, Technology Partnership and Engineering
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Delivery alternatives permit mill-only supply or additional auxiliary equipment; actual equipment scope determines attribution.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Delivery alternatives permit mill-only supply or additional auxiliary equipment; actual equipment scope determines attribution.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Modular auxiliary-inclusive and turnkey alternatives support differentiated package scope, without proving a global adoption percentage.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Modular auxiliary-inclusive and turnkey alternatives support differentiated package scope, without proving a global adoption percentage.
7. Commission Processing - NIPPON COKE & ENGINEERING CO., LTD.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Own commercial processing portfolio identifies glass, ceramics and inorganic materials; establishes material mapping, not equipment revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own commercial processing portfolio identifies glass, ceramics and inorganic materials; establishes material mapping, not equipment revenue.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Organic pigments are named commercial processing materials.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Organic pigments are named commercial processing materials.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Metal powders are named commercial processing materials.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Metal powders are named commercial processing materials.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Carbon is identified in the operator's commercial grinding portfolio.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Carbon is identified in the operator's commercial grinding portfolio.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Thermosetting resin supports a polymer-material category premise.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Thermosetting resin supports a polymer-material category premise.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Ink-related grinding establishes a commercial reference but does not resolve whole-formulation versus constituent duty.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Ink-related grinding establishes a commercial reference but does not resolve whole-formulation versus constituent duty.

8. Micronization / Grinding - A. Ebbecke Verfahrenstechnik AG
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Commercial contract-grinding coverage includes natural materials and food ingredients; processing fees are excluded from equipment value.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Commercial contract-grinding coverage includes natural materials and food ingredients; processing fees are excluded from equipment value.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Plastic granulates and resins establish material coverage, not downstream customers' equipment ownership.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Plastic granulates and resins establish material coverage, not downstream customers' equipment ownership.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operator-side food-processing reference supports establishment attribution rather than automatically assigning equipment to its customers.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operator-side food-processing reference supports establishment attribution rather than automatically assigning equipment to its customers.
9. Manufacturing Capabilities - Asbury Advanced Materials
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Own manufacturing disclosure identifies carbon-material grinding and micronization; supports the material-duty premise only.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own manufacturing disclosure identifies carbon-material grinding and micronization; supports the material-duty premise only.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Custom formulations and dispersions are commercial outputs, but joint whole-formulation milling remains unmeasured.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Custom formulations and dispersions are commercial outputs, but joint whole-formulation milling remains unmeasured.
10. Pyrum Innovations AG - Interim Group Report January 1 to June 30, 2025
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The purchaser's 2025 report records a grinding-plant installation associated with recovered carbon black; no downstream material revenue is counted.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The purchaser's 2025 report records a grinding-plant installation associated with recovered carbon black; no downstream material revenue is counted.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The report establishes an actual recovery-business equipment context, while the exact attributable mill expenditure remains undisclosed.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The report establishes an actual recovery-business equipment context, while the exact attributable mill expenditure remains undisclosed.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The disclosed commercial-site grinding installation supports Industrial Production classification.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The disclosed commercial-site grinding installation supports Industrial Production classification.

11. NRRI Advances Efficient Grinding Technology on the Iron Range
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The institution distinguishes a planned bench-scale purchase from its loaned pilot equipment; not a completed-sale census.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The institution distinguishes a planned bench-scale purchase from its loaned pilot equipment; not a completed-sale census.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The May xx.xx 2024 account identifies a loaned pilot stirred mill; unpaid placement is not counted as equipment-sale revenue.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The May xx.xx 2024 account identifies a loaned pilot stirred mill; unpaid placement is not counted as equipment-sale revenue.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operating research institute is distinct from its mining clients, supporting buyer/material separation.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operating research institute is distinct from its mining clients, supporting buyer/material separation.
12. Planetary Ball Mill PM 100 - RETSCH
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The PM xx.xx is marketed as a benchtop instrument, supporting the small-laboratory pool classification without establishing sales weight.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The PM xx.xx is marketed as a benchtop instrument, supporting the small-laboratory pool classification without establishing sales weight.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The individual-instrument offering supports a narrower equipment-supply alternative; package incidence remains modeled.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The individual-instrument offering supports a narrower equipment-supply alternative; package incidence remains modeled.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: PM xx.xx is a marketed benchtop planetary platform, supporting laboratory-category mapping rather than shipment or price weights. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: PM xx.xx is a marketed benchtop planetary platform, supporting laboratory-category mapping rather than shipment or price weights. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The product page advertises both dry and wet capability. Actual dual-state purchase inclusion remains an explicit model assumption. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The product page advertises both dry and wet capability. Actual dual-state purchase inclusion remains an explicit model assumption. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))

13. Jet Mill - Contract History CW2408170, CanadaBuys
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: A May xx.xx 2026 laboratory jet-mill award totals CAD xx.xx; a dated procurement check, not a 2025 shipment or global average price.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: A May xx.xx 2026 laboratory jet-mill award totals CAD xx.xx; a dated procurement check, not a 2025 shipment or global average price.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The record distinguishes Natural Resources Canada as buying organization from PSPC as contracting organization, supporting establishment attribution.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The record distinguishes Natural Resources Canada as buying organization from PSPC as contracting organization, supporting establishment attribution.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The jet-mill award totals CAD xx.xx and is dated May xx.xx 2026. It is a nearby-period laboratory purchasing comparator, not a 2025 recognized sale, and supplies neither a gas-jet subtype nor a definitive channel role. ([canadabuys.canada.ca](https://canadabuys.canada.ca/en/tender-opportunities/contract-history/cw2408170-xx.xx))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The jet-mill award totals CAD xx.xx and is dated May xx.xx 2026. It is a nearby-period laboratory purchasing comparator, not a 2025 recognized sale, and supplies neither a gas-jet subtype nor a definitive channel role. ([canadabuys.canada.ca](https://canadabuys.canada.ca/en/tender-opportunities/contract-history/cw2408170-xx.xx))
14. MFC Production Equipment - FiberLean
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The manufacturer's commercial offering targets pulp, paper and related establishments; it is not a measured industry sales share.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The manufacturer's commercial offering targets pulp, paper and related establishments; it is not a measured industry sales share.
15. Pulverizing Equipment - Coperion
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The broader portfolio names power-generation applications and separately lists ultrafine equipment; this limits, rather than verifies, the assumed qualifying power-buyer allocation.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The broader portfolio names power-generation applications and separately lists ultrafine equipment; this limits, rather than verifies, the assumed qualifying power-buyer allocation.
16. LG Energy Solution Releases 2025 Financial Results - January 29, 2026
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own 2025 revenue decline and dated 2026 capital-expenditure reduction target constrain battery-related equipment-adoption assumptions.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Existing-asset reuse strategy qualifies a direct downstream-demand-to-new-carbon-material-mill investment inference.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Buyer investment restraint constrains the relative application multiplier; upstream chemical attribution remains separately assumed.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own battery-manufacturer financial and investment plans provide a counter-test, not an ultrafine equipment purchasing total.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The January 2026 emphasis on reduced new investment qualifies automatic growth in broader equipment-package adoption.

17. UNSD Classification Detail - ISIC Rev.4, Class 3830: Materials Recovery
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The official classification distinguishes secondary-material recovery from manufacture of new final products; it supplies no equipment sales weight.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The official classification distinguishes secondary-material recovery from manufacture of new final products; it supplies no equipment sales weight.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Recovered-input use alone does not classify the equipment operator as a recovery establishment rather than a product manufacturer.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Recovered-input use alone does not classify the equipment operator as a recovery establishment rather than a product manufacturer.
18. Ultrafin Mill: Super Masscolloider, Masuko MKCA6-5J CE - University of Ljubljana
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The university inventories a laboratory ultrafine mill within wood science; the institutional operator is not a wood-products manufacturer.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The university inventories a laboratory ultrafine mill within wood science; the institutional operator is not a wood-products manufacturer.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The institutional inventory expressly identifies laboratory equipment, supporting deployment classification without establishing a purchase-year value.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The institutional inventory expressly identifies laboratory equipment, supporting deployment classification without establishing a purchase-year value.
19. Contract Manufacturing of Pharmaceuticals - YUKI GOSEI KOGYO CO., LTD.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operator distinguishes production jet mills from smaller equipment, supporting industrial deployment at a pharmaceutical contract manufacturer.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operator distinguishes production jet mills from smaller equipment, supporting industrial deployment at a pharmaceutical contract manufacturer.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The actual pharmaceutical manufacturing operator is distinct from customers outsourcing production; processing-service receipts remain excluded.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The actual pharmaceutical manufacturing operator is distinct from customers outsourcing production; processing-service receipts remain excluded.

20. Record year for Metso stirred mills as mining industry opts for energy-efficient comminution technology

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Metso reports more than twenty Vertimill sales in 2025 and approximately xx.xx cumulative stirred-mill deliveries. Broader application coverage prevents treating these as ultrafine-only annual shipments; they constrain the modeled stirred/mining allocation and forecast premise.
([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Metso reports more than twenty Vertimill sales in 2025 and approximately xx.xx cumulative stirred-mill deliveries. Broader application coverage prevents treating these as ultrafine-only annual shipments; they constrain the modeled stirred/mining allocation and forecast premise.
([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The disclosed stirred-equipment activity supports material Media Mills participation, not the final modeled parent share.
([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The disclosed stirred-equipment activity supports material Media Mills participation, not the final modeled parent share.
([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))

21. Bühler strengthens its market position

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Bühler reports xx.xx% Grinding & Dispersing order growth in 2025 against a xx.xx% decline in broader Advanced Materials orders. This is a mixed commercial leading indicator, not observed market-share growth.
([buhlergroup.com](https://www.buhlergroup.com/global/en/media/media-releases/b%C3%BChler-strengthens-its-marketposition.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Bühler reports xx.xx% Grinding & Dispersing order growth in 2025 against a xx.xx% decline in broader Advanced Materials orders. This is a mixed commercial leading indicator, not observed market-share growth.
([buhlergroup.com](https://www.buhlergroup.com/global/en/media/media-releases/b%C3%BChler-strengthens-its-marketposition.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The disclosed battery-related and other application orders constrain differentiated Media Mills forecast assumptions without converting orders directly to annual equipment revenue.
([buhlergroup.com](https://www.buhlergroup.com/global/en/media/media-releases/b%C3%BChler-strengthens-its-marketposition.html))

22. Management Greetings | HOSOKAWAMICRON CORPORATION

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Hosokawa reports FY2025 net sales of JPY xx.xx, down xx.xx%, and orders down xx.xx%. The diversified-company result challenges uniform purchasing acceleration and constrains, rather than directly measures, technology-mix assumptions.
([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/ir/management_policy/management_greetings.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Hosokawa reports FY2025 net sales of JPY xx.xx, down xx.xx%, and orders down xx.xx%. The diversified-company result challenges uniform purchasing acceleration and constrains, rather than directly measures, technology-mix assumptions.
([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/ir/management_policy/management_greetings.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The same broader financial contraction is counterevidence to assuming uniform Media Mills growth across suppliers; no corporate revenue is assigned directly to the category.
([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/ir/management_policy/management_greetings.html))

23. Details of micromeritics | HOSOKAWAMICRON CORPORATION

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Hosokawa identifies its AS spiral offering, supporting subtype mapping rather than a sales weight. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Hosokawa identifies its AS spiral offering, supporting subtype mapping rather than a sales weight. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The AFG/TFG counterjet offerings support the retained Opposed-Jet commercial mapping. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The AFG/TFG counterjet offerings support the retained Opposed-Jet commercial mapping. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The manufacturer identifies Innovomizer as a mechanical ultrafine offering; ordinary impact equipment is not automatically included. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The manufacturer identifies Innovomizer as a mechanical ultrafine offering; ordinary impact equipment is not automatically included. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

24. Grinding Equipment Manufacturer Supplier Factory, Grinding System | Longly

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: LONGLY discloses current annual capacity above 2,000 equipment units and commercial wet-grinding offerings. Capacity is bridged through explicitly assumed timing, utilization and eligible-product factors; it is not reported 2025 stirred-mill shipments. ([longlymill.com](https://www.longlymill.com/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: LONGLY discloses current annual capacity above 2,000 equipment units and commercial wet-grinding offerings. Capacity is bridged through explicitly assumed timing, utilization and eligible-product factors; it is not reported 2025 stirred-mill shipments. ([longlymill.com](https://www.longlymill.com/))

25. Ultra-Fine Grinding - Hosokawa Micron Malaysia

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The inspected ultrafine portfolio identifies AWM-F table-roller equipment, supporting the qualifying Roller Mills boundary, not its assumed counts or prices. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The inspected ultrafine portfolio identifies AWM-F table-roller equipment, supporting the qualifying Roller Mills boundary, not its assumed counts or prices. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Super Orion is a marketed rotary ball-mill constituent of the combined rotary/planetary category. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Super Orion is a marketed rotary ball-mill constituent of the combined rotary/planetary category. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: MJT is explicitly listed as a target-type offering, supporting precedence of the named platform over overlapping generic jet terminology. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: MJT is explicitly listed as a target-type offering, supporting precedence of the named platform over overlapping generic jet terminology. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

26. Loop Jet Mill - Consistency. Compliance. Engineered.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The current named Loop Jet Mill listing establishes an offered commercial platform. It supports forecast category continuity, but does not disclose subtype revenue or prove 2025 sales. ([jetmillmfg.com](https://www.jetmillmfg.com/loop-jet-mill/))
27. SWECO Vibratory Grinding and Particle Size Reduction Equipment
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: SWECO markets Vibro-Energy grinding equipment with separate wet and wet/dry offerings. This supports commercial category and configuration mapping, not the modeled frequency of purchases. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: SWECO markets Vibro-Energy grinding equipment with separate wet and wet/dry offerings. This supports commercial category and configuration mapping, not the modeled frequency of purchases. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Named wet/dry models establish dual-state availability; they do not establish the exact supplied configuration or a market-wide value share. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Named wet/dry models establish dual-state availability; they do not establish the exact supplied configuration or a market-wide value share. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))
28. Fine-cutting mill with rotating classifying feature - the sensational new development!
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The September xx.xx 2014 own-product announcement establishes a pre-base-year SecoMy S cutting offering described for ultrafine commercial applications. It is category evidence, not annual equipment revenue. ([grinding.netzsch.com](https://grinding.netzsch.com/en/news/2014/fine-cutting-mill-with-rotating-classifying-feature-the-sensational-new-development))
29. NETZSCH SecoMy S - Precision Cutting Redefined!
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The August 2026 SecoMy S brochure confirms continuing commercial ultrafine-cutting positioning and system-supply availability. It supports category persistence, not the assumed forecast spending share. ([grinding.netzsch.com](https://grinding.netzsch.com/_Resources/Persistent/xx.xx/e/xx.xx/b/8e4b5adcfc16fcc2d83974f8080d614cce1a2c01/NETZSCH_Fine_Cutting_Mill_SecoMy_S_e.pdf))
30. Wet Milling and Dispersing Device - Star Burst - Sugino Corp.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: SUGINO's Star Burst portfolio identifies wet-jet equipment across research and production purchasing contexts. Only milling-attributable supply is included; adjacent droplet-only or dispersion activity is not automatically counted. ([suginocorp.com](https://www.suginocorp.com/star-burst/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: SUGINO's Star Burst portfolio identifies wet-jet equipment across research and production purchasing contexts. Only milling-attributable supply is included; adjacent droplet-only or dispersion activity is not automatically counted. ([suginocorp.com](https://www.suginocorp.com/star-burst/))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The wet-jet offering supports wet-state classification within the joint value model, not the total Wet Grinding share. ([suginocorp.com](https://www.suginocorp.com/star-burst/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The wet-jet offering supports wet-state classification within the joint value model, not the total Wet Grinding share. ([suginocorp.com](https://www.suginocorp.com/star-burst/))

31. IBU-tec | Mills - Milling Technology for Dry and Wet Grinding

- Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operator table separately lists two dry opposed-jet units. This is an installed-inventory observation, not a shipment or revenue ratio. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
- Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operator table separately lists two dry opposed-jet units. This is an installed-inventory observation, not a shipment or revenue ratio. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
- Evidence informing base-year allocation inputs; displayed values and growth are calculated: Three wet agitator-bead units are separately inventoried, supporting state-specific commercial classification without using their count as a market weight. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
- Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Three wet agitator-bead units are separately inventoried, supporting state-specific commercial classification without using their count as a market weight. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))

32. Comminution - NTNU

- Evidence informing base-year allocation inputs; displayed values and growth are calculated: NTNU separately records wet/dry capability for stirred and planetary equipment; the inventory is not a representative value-share dataset. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
- Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: NTNU separately records wet/dry capability for stirred and planetary equipment; the inventory is not a representative value-share dataset. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
- Evidence informing base-year allocation inputs; displayed values and growth are calculated: The planetary equipment is recorded as batch, supporting a laboratory batch context without assuming all laboratories are batch-only. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
- Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The planetary equipment is recorded as batch, supporting a laboratory batch context without assuming all laboratories are batch-only. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
- Evidence informing base-year allocation inputs; displayed values and growth are calculated: The laboratory jet rig is recorded as continuous, independently challenging equivalence between continuous mode and industrial scale. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
- Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The laboratory jet rig is recorded as continuous, independently challenging equivalence between continuous mode and industrial scale. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))

33. Dry Batch Or Continuous Laboratory Mills - Union Process

- Evidence informing base-year allocation inputs; displayed values and growth are calculated: Union Process identifies SD-xx.xx as one laboratory offering for both batch and continuous service. Configuration-specific purchase inclusion and revenue are undisclosed. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))
- Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Union Process identifies SD-xx.xx as one laboratory offering for both batch and continuous service. Configuration-specific purchase inclusion and revenue are undisclosed. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))
- Evidence informing base-year allocation inputs; displayed values and growth are calculated: The same named offering advertises wet/dry capability, supporting a dual-state category premise rather than an observed adoption percentage. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))
- Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The same named offering advertises wet/dry capability, supporting a dual-state category premise rather than an observed adoption percentage. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))

34. Retsch Contact & Services - Contact Partners Worldwide

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: RETSCH describes a network including daughter companies. Manufacturer affiliation, rather than contact location, informs direct-route attribution. ([retsch.com](https://www.retsch.com/contact-services/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: RETSCH describes a network including daughter companies. Manufacturer affiliation, rather than contact location, informs direct-route attribution. ([retsch.com](https://www.retsch.com/contact-services/))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The network also includes trained distributors, establishing a resale-access premise but not distributor ownership roles or annual sales weights. ([retsch.com](https://www.retsch.com/contact-services/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The network also includes trained distributors, establishing a resale-access premise but not distributor ownership roles or annual sales weights. ([retsch.com](https://www.retsch.com/contact-services/))

35. HOSOKAWA ALPINE Aktiengesellschaft - Conditions of Sale 371_00 EN

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Hosokawa requires company confirmation of representatives' transactions and makes contractual scope authoritative. The terms support agency-role attribution, not the assumed agent percentage. ([hosokawa-alpine.com](https://www.hosokawa-alpine.com/fileadmin/allgemein/Legal/AGB/AGB_Verkaufsbedingungen_en_371_00.pdf))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Hosokawa requires company confirmation of representatives' transactions and makes contractual scope authoritative. The terms support agency-role attribution, not the assumed agent percentage. ([hosokawa-alpine.com](https://www.hosokawa-alpine.com/fileadmin/allgemein/Legal/AGB/AGB_Verkaufsbedingungen_en_371_00.pdf))

36. UNSD - ISIC Rev.5, Class 4610: Wholesale on a Fee or Contract Basis

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: ISIC Rev.xx.xx class xx.xx defines fee/commission intermediation without ownership, supporting a non-title-taking agency numerator distinct from goods supplied on own account. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: ISIC Rev.xx.xx class xx.xx defines fee/commission intermediation without ownership, supporting a non-title-taking agency numerator distinct from goods supplied on own account. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Own-account wholesale is excluded from the agency class, supporting the reseller/agent partition without supplying ultrafine-mill channel shares. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own-account wholesale is excluded from the agency class, supporting the reseller/agent partition without supplying ultrafine-mill channel shares. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))

37. ITDI-PB-2024-057 - Supply, Delivery, Installation and Commissioning of Ultra-fine Friction Grinder

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The 2024 friction-grinder procurement had a PHP xx.xx budget and failed with no bidder. It establishes a configured-package spending ceiling and commercial category, not a sale or a shipment count. ([notices.philgeps.gov.ph](https://notices.philgeps.gov.ph/GEPSNONPILOT/Tender/PrintableBidNoticeAbstractUI.aspx?refid=xx.xx))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The 2024 friction-grinder procurement had a PHP xx.xx budget and failed with no bidder. It establishes a configured-package spending ceiling and commercial category, not a sale or a shipment count. ([notices.philgeps.gov.ph](https://notices.philgeps.gov.ph/GEPSNONPILOT/Tender/PrintableBidNoticeAbstractUI.aspx?refid=xx.xx))

38. Bangko Sentral ng Pilipinas - Balance of Payments Report, Q4 2024

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The central bank reports a 2024 average of PHP xx.xx per USD. Dividing the failed PHP xx.xx procurement budget by this rate gives an approximately USD xx.xx comparison ceiling, not realized equipment revenue. ([bsp.gov.ph](https://www.bsp.gov.ph/Media_And_Research/Balance%20of%20Payments%20Report/2024/BOP_4qtr2024.pdf))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The central bank reports a 2024 average of PHP xx.xx per USD. Dividing the failed PHP xx.xx procurement budget by this rate gives an approximately USD xx.xx comparison ceiling, not realized equipment revenue. ([bsp.gov.ph](https://www.bsp.gov.ph/Media_And_Research/Balance%20of%20Payments%20Report/2024/BOP_4qtr2024.pdf))

16.2. G7

Table 256. G7 Ultra Fine Grinding Mill Market, by Country growth contribution, 2025-2032

Category	2025 value (USD Million)	2032 value (USD Million)	Added value (USD Million)	2025 share (%)	2032 share (%)	Change (pp)	Growth share (%)	CAGR (%)
Canada	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
France	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Germany	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Italy	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Japan	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United Kingdom	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United States	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Scope total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 257. G7 Ultra Fine Grinding Mill Market Size, by Group, 2017-2040 (USD Million)

Group	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Canada	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
France	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Germany	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Italy	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Japan	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United Kingdom	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United States	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx

Table 258. G7 Ultra Fine Grinding Mill Market Size, by Supply Scope, 2017-2040 (USD Million)

Supply Scope	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Integrated Milling Packages	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Standalone Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 259. G7 Ultra Fine Grinding Mill Market Size, by Mill Technology, 2017-2040 (USD Million)

Mill Technology	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Cutting Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Disc and Colloid Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Gas-Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mechanical Impact Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Media Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Roller Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wet-Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 260. G7 Ultra Fine Grinding Mill Market Size, by Media Mills, 2017-2040 (USD Million)

Media Mills	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Rotary and Planetary Ball Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Stirred Media Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Vibratory Media Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 261. G7 Ultra Fine Grinding Mill Market Size, by Gas-Jet Mills, 2017-2040 (USD Million)

Gas-Jet Mills	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Loop Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Opposed-Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Spiral Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Target Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 262. G7 Ultra Fine Grinding Mill Market Size, by Processed Material, 2017-2040 (USD Million)

Processed Material	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Biomass and Natural Ingredients	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Carbonaceous Materials	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Formulations and Composites	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Industrial Minerals	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Inorganic Chemicals, Ceramics, and Glass	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Metal Ores and Concentrates	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Metals and Alloys	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Organic Chemicals	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Polymers and Elastomers	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 263. G7 Ultra Fine Grinding Mill Market Size, by Buyer Industry, 2017-2040 (USD Million)

Buyer Industry	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Chemical and Fuel Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Electrical and Electronic Product Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Food, Beverage, and Feed Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Glass, Ceramics, and Construction Materials Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Materials Recovery and Recycling	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Metals and Fabricated Metal Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mining and Mineral Processing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Pharmaceutical Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Power and Heat Generation	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Research, Education, and Testing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Rubber and Plastics Product Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wood, Pulp, and Paper Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Others	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 264. G7 Ultra Fine Grinding Mill Market Size, by Deployment Scale, 2017-2040 (USD Million)

Deployment Scale	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Industrial Production	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Laboratory	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Pilot	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 265. G7 Ultra Fine Grinding Mill Market Size, by Sales Channel, 2017-2040 (USD Million)

Sales Channel	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Agent-Mediated Sales	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Independent Reseller Sales	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Manufacturer-Direct Sales	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 266. G7 Ultra Fine Grinding Mill Market Size, by Processing State, 2017-2040 (USD Million)

Processing State	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Dry Grinding	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wet and Dry Grinding	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wet Grinding	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 267. G7 Ultra Fine Grinding Mill Market Size, by Operating Mode, 2017-2040 (USD Million)

Operating Mode	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Batch	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Batch and Continuous	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Continuous	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Sources & Evidence

1. Business Unit Grinding & Dispersing - NETZSCH

   · Evidence informing base-year allocation inputs; displayed values and growth are calculated: Documented U.S. production and local commercial operations support an explicit, uncertain domestic-supply bridge rather than treating imports as the entire numerator.

   · Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Documented U.S. production and local commercial operations support an explicit, uncertain domestic-supply bridge rather than treating imports as the entire numerator.

2. Methodology - UNIDO Industrial Analytics Platform
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The methodology notes that U.S. trade coverage includes Puerto Rico, reinforcing that the national purchasing proxy must not be renormalized to the xx.xx-state inventory.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The methodology notes that U.S. trade coverage includes Puerto Rico, reinforcing that the national purchasing proxy must not be renormalized to the xx.xx-state inventory.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The methodology identifies Monaco within French trade coverage; the customs input is an imperfect national demand proxy rather than a directly observed country numerator.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The methodology identifies Monaco within French trade coverage; the customs input is an imperfect national demand proxy rather than a directly observed country numerator.
3. Hosokawa Micron - FY2025 Financial Results Presentation, November 25, 2025 (Japanese)
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; material attribution modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; material attribution modeled.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; establishment attribution modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; establishment attribution modeled.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; buyer attribution assumed.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; buyer attribution assumed.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; qualifying power attribution unverified.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; qualifying power attribution unverified.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; institutional attribution assumed.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; institutional attribution assumed.

4. Metso Receives Order for Grinding Mills to a Copper Project in Africa
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Approximately EUR xx.xx 2024 HIGmill order includes auxiliaries and services; a package-scale anchor, not recognized annual revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Approximately EUR xx.xx 2024 HIGmill order includes auxiliaries and services; a package-scale anchor, not recognized annual revenue.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The copper-project award establishes an ore/concentrate commercial purchasing context.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The copper-project award establishes an ore/concentrate commercial purchasing context.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The award concerns an African mining project; it does not disclose the global mining-buyer share.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The award concerns an African mining project; it does not disclose the global mining-buyer share.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Large industrial equipment procurement supports the production-scale category premise.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Large industrial equipment procurement supports the production-scale category premise.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The August xx.xx 2024 announcement records an approximately EUR xx.xx HIGmill order including auxiliaries and services. It anchors package-level commercial materiality, not a mill unit price or 2025 recognized revenue. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The August xx.xx 2024 announcement records an approximately EUR xx.xx HIGmill order including auxiliaries and services. It anchors package-level commercial materiality, not a mill unit price or 2025 recognized revenue. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The stirred-package order supports the Media Mills value-weight model and continuing commercial-demand premise, with order-to-revenue timing unresolved. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The stirred-package order supports the Media Mills value-weight model and continuing commercial-demand premise, with order-to-revenue timing unresolved. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
5. HIGmill Plant - Metso
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Standalone marketing terminology does not establish the study's Standalone Mills equipment scope.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Standalone marketing terminology does not establish the study's Standalone Mills equipment scope.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: HIGmill Plant includes pre-engineered auxiliary modules, supporting classification as an equipment package.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: HIGmill Plant includes pre-engineered auxiliary modules, supporting classification as an equipment package.

6. IsaMill - About, Technology Partnership and Engineering
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Delivery alternatives permit mill-only supply or additional auxiliary equipment; actual equipment scope determines attribution.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Delivery alternatives permit mill-only supply or additional auxiliary equipment; actual equipment scope determines attribution.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Modular auxiliary-inclusive and turnkey alternatives support differentiated package scope, without proving a global adoption percentage.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Modular auxiliary-inclusive and turnkey alternatives support differentiated package scope, without proving a global adoption percentage.
7. Commission Processing - NIPPON COKE & ENGINEERING CO., LTD.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Own commercial processing portfolio identifies glass, ceramics and inorganic materials; establishes material mapping, not equipment revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own commercial processing portfolio identifies glass, ceramics and inorganic materials; establishes material mapping, not equipment revenue.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Organic pigments are named commercial processing materials.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Organic pigments are named commercial processing materials.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Metal powders are named commercial processing materials.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Metal powders are named commercial processing materials.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Carbon is identified in the operator's commercial grinding portfolio.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Carbon is identified in the operator's commercial grinding portfolio.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Thermosetting resin supports a polymer-material category premise.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Thermosetting resin supports a polymer-material category premise.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Ink-related grinding establishes a commercial reference but does not resolve whole-formulation versus constituent duty.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Ink-related grinding establishes a commercial reference but does not resolve whole-formulation versus constituent duty.

8. Micronization / Grinding - A. Ebbecke Verfahrenstechnik AG
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Commercial contract-grinding coverage includes natural materials and food ingredients; processing fees are excluded from equipment value.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Commercial contract-grinding coverage includes natural materials and food ingredients; processing fees are excluded from equipment value.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Plastic granulates and resins establish material coverage, not downstream customers' equipment ownership.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Plastic granulates and resins establish material coverage, not downstream customers' equipment ownership.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operator-side food-processing reference supports establishment attribution rather than automatically assigning equipment to its customers.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operator-side food-processing reference supports establishment attribution rather than automatically assigning equipment to its customers.
9. Manufacturing Capabilities - Asbury Advanced Materials
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Own manufacturing disclosure identifies carbon-material grinding and micronization; supports the material-duty premise only.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own manufacturing disclosure identifies carbon-material grinding and micronization; supports the material-duty premise only.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Custom formulations and dispersions are commercial outputs, but joint whole-formulation milling remains unmeasured.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Custom formulations and dispersions are commercial outputs, but joint whole-formulation milling remains unmeasured.
10. Pyrum Innovations AG - Interim Group Report January 1 to June 30, 2025
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The purchaser's 2025 report records a grinding-plant installation associated with recovered carbon black; no downstream material revenue is counted.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The purchaser's 2025 report records a grinding-plant installation associated with recovered carbon black; no downstream material revenue is counted.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The report establishes an actual recovery-business equipment context, while the exact attributable mill expenditure remains undisclosed.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The report establishes an actual recovery-business equipment context, while the exact attributable mill expenditure remains undisclosed.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The disclosed commercial-site grinding installation supports Industrial Production classification.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The disclosed commercial-site grinding installation supports Industrial Production classification.

11. NRRI Advances Efficient Grinding Technology on the Iron Range
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The institution distinguishes a planned bench-scale purchase from its loaned pilot equipment; not a completed-sale census.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The institution distinguishes a planned bench-scale purchase from its loaned pilot equipment; not a completed-sale census.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The May xx.xx 2024 account identifies a loaned pilot stirred mill; unpaid placement is not counted as equipment-sale revenue.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The May xx.xx 2024 account identifies a loaned pilot stirred mill; unpaid placement is not counted as equipment-sale revenue.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operating research institute is distinct from its mining clients, supporting buyer/material separation.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operating research institute is distinct from its mining clients, supporting buyer/material separation.
12. Planetary Ball Mill PM 100 - RETSCH
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The PM xx.xx is marketed as a benchtop instrument, supporting the small-laboratory pool classification without establishing sales weight.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The PM xx.xx is marketed as a benchtop instrument, supporting the small-laboratory pool classification without establishing sales weight.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The individual-instrument offering supports a narrower equipment-supply alternative; package incidence remains modeled.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The individual-instrument offering supports a narrower equipment-supply alternative; package incidence remains modeled.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: PM xx.xx is a marketed benchtop planetary platform, supporting laboratory-category mapping rather than shipment or price weights. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: PM xx.xx is a marketed benchtop planetary platform, supporting laboratory-category mapping rather than shipment or price weights. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The product page advertises both dry and wet capability. Actual dual-state purchase inclusion remains an explicit model assumption. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The product page advertises both dry and wet capability. Actual dual-state purchase inclusion remains an explicit model assumption. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))

13. Jet Mill - Contract History CW2408170, CanadaBuys
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: A May xx.xx 2026 laboratory jet-mill award totals CAD xx.xx; a dated procurement check, not a 2025 shipment or global average price.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: A May xx.xx 2026 laboratory jet-mill award totals CAD xx.xx; a dated procurement check, not a 2025 shipment or global average price.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The record distinguishes Natural Resources Canada as buying organization from PSPC as contracting organization, supporting establishment attribution.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The record distinguishes Natural Resources Canada as buying organization from PSPC as contracting organization, supporting establishment attribution.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The jet-mill award totals CAD xx.xx and is dated May xx.xx 2026. It is a nearby-period laboratory purchasing comparator, not a 2025 recognized sale, and supplies neither a gas-jet subtype nor a definitive channel role. ([canadabuys.canada.ca](https://canadabuys.canada.ca/en/tender-opportunities/contract-history/cw2408170-xx.xx))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The jet-mill award totals CAD xx.xx and is dated May xx.xx 2026. It is a nearby-period laboratory purchasing comparator, not a 2025 recognized sale, and supplies neither a gas-jet subtype nor a definitive channel role. ([canadabuys.canada.ca](https://canadabuys.canada.ca/en/tender-opportunities/contract-history/cw2408170-xx.xx))
14. MFC Production Equipment - FiberLean
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The manufacturer's commercial offering targets pulp, paper and related establishments; it is not a measured industry sales share.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The manufacturer's commercial offering targets pulp, paper and related establishments; it is not a measured industry sales share.
15. Pulverizing Equipment - Coperion
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The broader portfolio names power-generation applications and separately lists ultrafine equipment; this limits, rather than verifies, the assumed qualifying power-buyer allocation.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The broader portfolio names power-generation applications and separately lists ultrafine equipment; this limits, rather than verifies, the assumed qualifying power-buyer allocation.
16. LG Energy Solution Releases 2025 Financial Results - January 29, 2026
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own 2025 revenue decline and dated 2026 capital-expenditure reduction target constrain battery-related equipment-adoption assumptions.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Existing-asset reuse strategy qualifies a direct downstream-demand-to-new-carbon-material-mill investment inference.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Buyer investment restraint constrains the relative application multiplier; upstream chemical attribution remains separately assumed.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own battery-manufacturer financial and investment plans provide a counter-test, not an ultrafine equipment purchasing total.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The January 2026 emphasis on reduced new investment qualifies automatic growth in broader equipment-package adoption.

17. UNSD Classification Detail - ISIC Rev.4, Class 3830: Materials Recovery
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The official classification distinguishes secondary-material recovery from manufacture of new final products; it supplies no equipment sales weight.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The official classification distinguishes secondary-material recovery from manufacture of new final products; it supplies no equipment sales weight.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Recovered-input use alone does not classify the equipment operator as a recovery establishment rather than a product manufacturer.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Recovered-input use alone does not classify the equipment operator as a recovery establishment rather than a product manufacturer.
18. Ultrafin Mill: Super Masscolloider, Masuko MKCA6-5J CE - University of Ljubljana
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The university inventories a laboratory ultrafine mill within wood science; the institutional operator is not a wood-products manufacturer.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The university inventories a laboratory ultrafine mill within wood science; the institutional operator is not a wood-products manufacturer.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The institutional inventory expressly identifies laboratory equipment, supporting deployment classification without establishing a purchase-year value.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The institutional inventory expressly identifies laboratory equipment, supporting deployment classification without establishing a purchase-year value.
19. Contract Manufacturing of Pharmaceuticals - YUKI GOSEI KOGYO CO., LTD.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operator distinguishes production jet mills from smaller equipment, supporting industrial deployment at a pharmaceutical contract manufacturer.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operator distinguishes production jet mills from smaller equipment, supporting industrial deployment at a pharmaceutical contract manufacturer.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The actual pharmaceutical manufacturing operator is distinct from customers outsourcing production; processing-service receipts remain excluded.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The actual pharmaceutical manufacturing operator is distinct from customers outsourcing production; processing-service receipts remain excluded.

20. Record year for Metso stirred mills as mining industry opts for energy-efficient comminution technology

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Metso reports more than twenty Vertimill sales in 2025 and approximately xx.xx cumulative stirred-mill deliveries. Broader application coverage prevents treating these as ultrafine-only annual shipments; they constrain the modeled stirred/mining allocation and forecast premise.
([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Metso reports more than twenty Vertimill sales in 2025 and approximately xx.xx cumulative stirred-mill deliveries. Broader application coverage prevents treating these as ultrafine-only annual shipments; they constrain the modeled stirred/mining allocation and forecast premise.
([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The disclosed stirred-equipment activity supports material Media Mills participation, not the final modeled parent share.
([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The disclosed stirred-equipment activity supports material Media Mills participation, not the final modeled parent share.
([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))

21. Bühler strengthens its market position

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Bühler reports xx.xx% Grinding & Dispersing order growth in 2025 against a xx.xx% decline in broader Advanced Materials orders. This is a mixed commercial leading indicator, not observed market-share growth.
([buhlergroup.com](https://www.buhlergroup.com/global/en/media/media-releases/b%C3%BChler-strengthens-its-marketposition.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Bühler reports xx.xx% Grinding & Dispersing order growth in 2025 against a xx.xx% decline in broader Advanced Materials orders. This is a mixed commercial leading indicator, not observed market-share growth.
([buhlergroup.com](https://www.buhlergroup.com/global/en/media/media-releases/b%C3%BChler-strengthens-its-marketposition.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The disclosed battery-related and other application orders constrain differentiated Media Mills forecast assumptions without converting orders directly to annual equipment revenue.
([buhlergroup.com](https://www.buhlergroup.com/global/en/media/media-releases/b%C3%BChler-strengthens-its-marketposition.html))

22. Management Greetings | HOSOKAWAMICRON CORPORATION

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Hosokawa reports FY2025 net sales of JPY xx.xx, down xx.xx%, and orders down xx.xx%. The diversified-company result challenges uniform purchasing acceleration and constrains, rather than directly measures, technology-mix assumptions.
([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/ir/management_policy/management_greetings.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Hosokawa reports FY2025 net sales of JPY xx.xx, down xx.xx%, and orders down xx.xx%. The diversified-company result challenges uniform purchasing acceleration and constrains, rather than directly measures, technology-mix assumptions.
([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/ir/management_policy/management_greetings.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The same broader financial contraction is counterevidence to assuming uniform Media Mills growth across suppliers; no corporate revenue is assigned directly to the category.
([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/ir/management_policy/management_greetings.html))

23. Details of micromeritics | HOSOKAWAMICRON CORPORATION

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Hosokawa identifies its AS spiral offering, supporting subtype mapping rather than a sales weight. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Hosokawa identifies its AS spiral offering, supporting subtype mapping rather than a sales weight. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The AFG/TFG counterjet offerings support the retained Opposed-Jet commercial mapping. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The AFG/TFG counterjet offerings support the retained Opposed-Jet commercial mapping. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The manufacturer identifies Innovomizer as a mechanical ultrafine offering; ordinary impact equipment is not automatically included. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The manufacturer identifies Innovomizer as a mechanical ultrafine offering; ordinary impact equipment is not automatically included. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

24. Grinding Equipment Manufacturer Supplier Factory, Grinding System | Longly

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: LONGLY discloses current annual capacity above 2,000 equipment units and commercial wet-grinding offerings. Capacity is bridged through explicitly assumed timing, utilization and eligible-product factors; it is not reported 2025 stirred-mill shipments. ([longlymill.com](https://www.longlymill.com/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: LONGLY discloses current annual capacity above 2,000 equipment units and commercial wet-grinding offerings. Capacity is bridged through explicitly assumed timing, utilization and eligible-product factors; it is not reported 2025 stirred-mill shipments. ([longlymill.com](https://www.longlymill.com/))

25. Ultra-Fine Grinding - Hosokawa Micron Malaysia

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The inspected ultrafine portfolio identifies AWM-F table-roller equipment, supporting the qualifying Roller Mills boundary, not its assumed counts or prices. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The inspected ultrafine portfolio identifies AWM-F table-roller equipment, supporting the qualifying Roller Mills boundary, not its assumed counts or prices. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Super Orion is a marketed rotary ball-mill constituent of the combined rotary/planetary category. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Super Orion is a marketed rotary ball-mill constituent of the combined rotary/planetary category. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: MJT is explicitly listed as a target-type offering, supporting precedence of the named platform over overlapping generic jet terminology. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: MJT is explicitly listed as a target-type offering, supporting precedence of the named platform over overlapping generic jet terminology. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

26. Loop Jet Mill - Consistency. Compliance. Engineered.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The current named Loop Jet Mill listing establishes an offered commercial platform. It supports forecast category continuity, but does not disclose subtype revenue or prove 2025 sales. ([jetmillmfg.com](https://www.jetmillmfg.com/loop-jet-mill/))
27. SWECO Vibratory Grinding and Particle Size Reduction Equipment
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: SWECO markets Vibro-Energy grinding equipment with separate wet and wet/dry offerings. This supports commercial category and configuration mapping, not the modeled frequency of purchases. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: SWECO markets Vibro-Energy grinding equipment with separate wet and wet/dry offerings. This supports commercial category and configuration mapping, not the modeled frequency of purchases. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Named wet/dry models establish dual-state availability; they do not establish the exact supplied configuration or a market-wide value share. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Named wet/dry models establish dual-state availability; they do not establish the exact supplied configuration or a market-wide value share. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))
28. Fine-cutting mill with rotating classifying feature - the sensational new development!
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The September xx.xx 2014 own-product announcement establishes a pre-base-year SecoMy S cutting offering described for ultrafine commercial applications. It is category evidence, not annual equipment revenue. ([grinding.netzsch.com](https://grinding.netzsch.com/en/news/2014/fine-cutting-mill-with-rotating-classifying-feature-the-sensational-new-development))
29. NETZSCH SecoMy S - Precision Cutting Redefined!
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The August 2026 SecoMy S brochure confirms continuing commercial ultrafine-cutting positioning and system-supply availability. It supports category persistence, not the assumed forecast spending share. ([grinding.netzsch.com](https://grinding.netzsch.com/_Resources/Persistent/xx.xx/e/xx.xx/b/8e4b5adcfc16fcc2d83974f8080d614cce1a2c01/NETZSCH_Fine_Cutting_Mill_SecoMy_S_e.pdf))
30. Wet Milling and Dispersing Device - Star Burst - Sugino Corp.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: SUGINO's Star Burst portfolio identifies wet-jet equipment across research and production purchasing contexts. Only milling-attributable supply is included; adjacent droplet-only or dispersion activity is not automatically counted. ([suginocorp.com](https://www.suginocorp.com/star-burst/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: SUGINO's Star Burst portfolio identifies wet-jet equipment across research and production purchasing contexts. Only milling-attributable supply is included; adjacent droplet-only or dispersion activity is not automatically counted. ([suginocorp.com](https://www.suginocorp.com/star-burst/))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The wet-jet offering supports wet-state classification within the joint value model, not the total Wet Grinding share. ([suginocorp.com](https://www.suginocorp.com/star-burst/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The wet-jet offering supports wet-state classification within the joint value model, not the total Wet Grinding share. ([suginocorp.com](https://www.suginocorp.com/star-burst/))

31. IBU-tec | Mills - Milling Technology for Dry and Wet Grinding

- Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operator table separately lists two dry opposed-jet units. This is an installed-inventory observation, not a shipment or revenue ratio. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
- Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operator table separately lists two dry opposed-jet units. This is an installed-inventory observation, not a shipment or revenue ratio. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
- Evidence informing base-year allocation inputs; displayed values and growth are calculated: Three wet agitator-bead units are separately inventoried, supporting state-specific commercial classification without using their count as a market weight. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
- Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Three wet agitator-bead units are separately inventoried, supporting state-specific commercial classification without using their count as a market weight. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))

32. Comminution - NTNU

- Evidence informing base-year allocation inputs; displayed values and growth are calculated: NTNU separately records wet/dry capability for stirred and planetary equipment; the inventory is not a representative value-share dataset. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
- Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: NTNU separately records wet/dry capability for stirred and planetary equipment; the inventory is not a representative value-share dataset. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
- Evidence informing base-year allocation inputs; displayed values and growth are calculated: The planetary equipment is recorded as batch, supporting a laboratory batch context without assuming all laboratories are batch-only. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
- Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The planetary equipment is recorded as batch, supporting a laboratory batch context without assuming all laboratories are batch-only. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
- Evidence informing base-year allocation inputs; displayed values and growth are calculated: The laboratory jet rig is recorded as continuous, independently challenging equivalence between continuous mode and industrial scale. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
- Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The laboratory jet rig is recorded as continuous, independently challenging equivalence between continuous mode and industrial scale. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))

33. Dry Batch Or Continuous Laboratory Mills - Union Process

- Evidence informing base-year allocation inputs; displayed values and growth are calculated: Union Process identifies SD-xx.xx as one laboratory offering for both batch and continuous service. Configuration-specific purchase inclusion and revenue are undisclosed. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))
- Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Union Process identifies SD-xx.xx as one laboratory offering for both batch and continuous service. Configuration-specific purchase inclusion and revenue are undisclosed. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))
- Evidence informing base-year allocation inputs; displayed values and growth are calculated: The same named offering advertises wet/dry capability, supporting a dual-state category premise rather than an observed adoption percentage. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))
- Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The same named offering advertises wet/dry capability, supporting a dual-state category premise rather than an observed adoption percentage. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))

34. Retsch Contact & Services - Contact Partners Worldwide
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: RETSCH describes a network including daughter companies. Manufacturer affiliation, rather than contact location, informs direct-route attribution. ([retsch.com](https://www.retsch.com/contact-services/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: RETSCH describes a network including daughter companies. Manufacturer affiliation, rather than contact location, informs direct-route attribution. ([retsch.com](https://www.retsch.com/contact-services/))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The network also includes trained distributors, establishing a resale-access premise but not distributor ownership roles or annual sales weights. ([retsch.com](https://www.retsch.com/contact-services/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The network also includes trained distributors, establishing a resale-access premise but not distributor ownership roles or annual sales weights. ([retsch.com](https://www.retsch.com/contact-services/))
35. HOSOKAWA ALPINE Aktiengesellschaft - Conditions of Sale 371_00 EN
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Hosokawa requires company confirmation of representatives' transactions and makes contractual scope authoritative. The terms support agency-role attribution, not the assumed agent percentage. ([hosokawa-alpine.com](https://www.hosokawa-alpine.com/fileadmin/allgemein/Legal/AGB/AGB_Verkaufsbedingungen_en_371_00.pdf))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Hosokawa requires company confirmation of representatives' transactions and makes contractual scope authoritative. The terms support agency-role attribution, not the assumed agent percentage. ([hosokawa-alpine.com](https://www.hosokawa-alpine.com/fileadmin/allgemein/Legal/AGB/AGB_Verkaufsbedingungen_en_371_00.pdf))
36. UNSD - ISIC Rev.5, Class 4610: Wholesale on a Fee or Contract Basis
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: ISIC Rev.xx.xx class xx.xx defines fee/commission intermediation without ownership, supporting a non-title-taking agency numerator distinct from goods supplied on own account. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: ISIC Rev.xx.xx class xx.xx defines fee/commission intermediation without ownership, supporting a non-title-taking agency numerator distinct from goods supplied on own account. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Own-account wholesale is excluded from the agency class, supporting the reseller/agent partition without supplying ultrafine-mill channel shares. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own-account wholesale is excluded from the agency class, supporting the reseller/agent partition without supplying ultrafine-mill channel shares. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))
37. ITDI-PB-2024-057 - Supply, Delivery, Installation and Commissioning of Ultra-fine Friction Grinder
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The 2024 friction-grinder procurement had a PHP xx.xx budget and failed with no bidder. It establishes a configured-package spending ceiling and commercial category, not a sale or a shipment count. ([notices.philgeps.gov.ph](https://notices.philgeps.gov.ph/GEPSNONPILOT/Tender/PrintableBidNoticeAbstractUI.aspx?refid=xx.xx))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The 2024 friction-grinder procurement had a PHP xx.xx budget and failed with no bidder. It establishes a configured-package spending ceiling and commercial category, not a sale or a shipment count. ([notices.philgeps.gov.ph](https://notices.philgeps.gov.ph/GEPSNONPILOT/Tender/PrintableBidNoticeAbstractUI.aspx?refid=xx.xx))

38. Bangko Sentral ng Pilipinas - Balance of Payments Report, Q4 2024
· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The central bank reports a 2024 average of PHP xx.xx per USD. Dividing the failed PHP xx.xx procurement budget by this rate gives an approximately USD xx.xx comparison ceiling, not realized equipment revenue. ([bsp.gov.ph](https://www.bsp.gov.ph/Media_And_Research/Balance%20of%20Payments%20Report/2024/BOP_4qtr2024.pdf))
· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The central bank reports a 2024 average of PHP xx.xx per USD. Dividing the failed PHP xx.xx procurement budget by this rate gives an approximately USD xx.xx comparison ceiling, not realized equipment revenue. ([bsp.gov.ph](https://www.bsp.gov.ph/Media_And_Research/Balance%20of%20Payments%20Report/2024/BOP_4qtr2024.pdf))

16.3. BRICS

Table 268. BRICS Ultra Fine Grinding Mill Market, by Country growth contribution, 2025-2032

Category	2025 value (USD Million)	2032 value (USD Million)	Added value (USD Million)	2025 share (%)	2032 share (%)	Change (pp)	Growth share (%)	CAGR (%)
Brazil	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
China	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
India	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Russia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
South Africa	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Scope total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 269. BRICS Ultra Fine Grinding Mill Market Size, by Group, 2017-2040 (USD Million)

Group	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Brazil	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
China	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
India	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Russia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
South Africa	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx

Table 270. BRICS Ultra Fine Grinding Mill Market Size, by Supply Scope, 2017-2040 (USD Million)

Supply Scope	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Integrated Milling Packages	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Standalone Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 271. BRICS Ultra Fine Grinding Mill Market Size, by Mill Technology, 2017-2040 (USD Million)

Mill Technology	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Cutting Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Disc and Colloid Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Gas-Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mechanical Impact Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Media Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Roller Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wet-Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 272. BRICS Ultra Fine Grinding Mill Market Size, by Media Mills, 2017-2040 (USD Million)

Media Mills	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Rotary and Planetary Ball Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Stirred Media Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Vibratory Media Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 273. BRICS Ultra Fine Grinding Mill Market Size, by Gas-Jet Mills, 2017-2040 (USD Million)

Gas-Jet Mills	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Loop Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Opposed-Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Spiral Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Target Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 274. BRICS Ultra Fine Grinding Mill Market Size, by Processed Material, 2017-2040 (USD Million)

Processed Material	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Biomass and Natural Ingredients	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Carbonaceous Materials	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Formulations and Composites	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Industrial Minerals	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Inorganic Chemicals, Ceramics, and Glass	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Metal Ores and Concentrates	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Metals and Alloys	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Organic Chemicals	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Polymers and Elastomers	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 275. BRICS Ultra Fine Grinding Mill Market Size, by Buyer Industry, 2017-2040 (USD Million)

Buyer Industry	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Chemical and Fuel Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Electrical and Electronic Product Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Food, Beverage, and Feed Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Glass, Ceramics, and Construction Materials Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Materials Recovery and Recycling	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Metals and Fabricated Metal Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mining and Mineral Processing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Pharmaceutical Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Power and Heat Generation	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Research, Education, and Testing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Rubber and Plastics Product Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wood, Pulp, and Paper Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Others	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 276. BRICS Ultra Fine Grinding Mill Market Size, by Deployment Scale, 2017-2040 (USD Million)

Deployment Scale	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Industrial Production	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Laboratory	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Pilot	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 277. BRICS Ultra Fine Grinding Mill Market Size, by Sales Channel, 2017-2040 (USD Million)

Sales Channel	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Agent-Mediated Sales	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Independent Reseller Sales	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Manufacturer-Direct Sales	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 278. BRICS Ultra Fine Grinding Mill Market Size, by Processing State, 2017-2040 (USD Million)

Processing State	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Dry Grinding	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wet and Dry Grinding	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wet Grinding	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 279. BRICS Ultra Fine Grinding Mill Market Size, by Operating Mode, 2017-2040 (USD Million)

Operating Mode	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Batch	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Batch and Continuous	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Continuous	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Sources & Evidence

1. Mach for mixing/kneading/crushing/grinding etc imports by country | 2021

   · Evidence informing base-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports were USD xx.xx. The model applies a qualified timing/access bridge and does not describe this as current trade.

   · Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports were USD xx.xx. The model applies a qualified timing/access bridge and does not describe this as current trade.

2. Crushing/grinding machines for earth/ stone/ore imports by country | 2021

   · Evidence informing base-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports of USD xx.xx provide the second historical purchasing primitive; the 2025 and 2032 allocations remain modeled.

   · Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports of USD xx.xx provide the second historical purchasing primitive; the 2025 and 2032 allocations remain modeled.

3. Business Unit Grinding & Dispersing - NETZSCH
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Brazilian local production and commercial operations qualify reliance on imports alone, without establishing the assumed domestic sales amount.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Brazilian local production and commercial operations qualify reliance on imports alone, without establishing the assumed domestic sales amount.
4. High Energy Planetary Ball Mill - IIT Bombay
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The 2024 solicitation concerns one mill and requires two registration stages. It supports a purchaser-specific access constraint, not an award, national procurement conversion rate or forecast revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The 2024 solicitation concerns one mill and requires two registration stages. It supports a purchaser-specific access constraint, not an award, national procurement conversion rate or forecast revenue.
5. Hosokawa Micron - FY2025 Financial Results Presentation, November 25, 2025 (Japanese)
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; material attribution modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; material attribution modeled.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; establishment attribution modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; establishment attribution modeled.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; buyer attribution assumed.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; buyer attribution assumed.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; qualifying power attribution unverified.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; qualifying power attribution unverified.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; institutional attribution assumed.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; institutional attribution assumed.

6. Metso Receives Order for Grinding Mills to a Copper Project in Africa
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Approximately EUR xx.xx 2024 HIGmill order includes auxiliaries and services; a package-scale anchor, not recognized annual revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Approximately EUR xx.xx 2024 HIGmill order includes auxiliaries and services; a package-scale anchor, not recognized annual revenue.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The copper-project award establishes an ore/concentrate commercial purchasing context.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The copper-project award establishes an ore/concentrate commercial purchasing context.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The award concerns an African mining project; it does not disclose the global mining-buyer share.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The award concerns an African mining project; it does not disclose the global mining-buyer share.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Large industrial equipment procurement supports the production-scale category premise.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Large industrial equipment procurement supports the production-scale category premise.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The August xx.xx 2024 announcement records an approximately EUR xx.xx HIGmill order including auxiliaries and services. It anchors package-level commercial materiality, not a mill unit price or 2025 recognized revenue. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The August xx.xx 2024 announcement records an approximately EUR xx.xx HIGmill order including auxiliaries and services. It anchors package-level commercial materiality, not a mill unit price or 2025 recognized revenue. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The stirred-package order supports the Media Mills value-weight model and continuing commercial-demand premise, with order-to-revenue timing unresolved. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The stirred-package order supports the Media Mills value-weight model and continuing commercial-demand premise, with order-to-revenue timing unresolved. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
7. HIGmill Plant - Metso
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Standalone marketing terminology does not establish the study's Standalone Mills equipment scope.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Standalone marketing terminology does not establish the study's Standalone Mills equipment scope.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: HIGmill Plant includes pre-engineered auxiliary modules, supporting classification as an equipment package.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: HIGmill Plant includes pre-engineered auxiliary modules, supporting classification as an equipment package.

8. IsaMill - About, Technology Partnership and Engineering
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Delivery alternatives permit mill-only supply or additional auxiliary equipment; actual equipment scope determines attribution.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Delivery alternatives permit mill-only supply or additional auxiliary equipment; actual equipment scope determines attribution.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Modular auxiliary-inclusive and turnkey alternatives support differentiated package scope, without proving a global adoption percentage.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Modular auxiliary-inclusive and turnkey alternatives support differentiated package scope, without proving a global adoption percentage.
9. Commission Processing - NIPPON COKE & ENGINEERING CO., LTD.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Own commercial processing portfolio identifies glass, ceramics and inorganic materials; establishes material mapping, not equipment revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own commercial processing portfolio identifies glass, ceramics and inorganic materials; establishes material mapping, not equipment revenue.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Organic pigments are named commercial processing materials.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Organic pigments are named commercial processing materials.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Metal powders are named commercial processing materials.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Metal powders are named commercial processing materials.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Carbon is identified in the operator's commercial grinding portfolio.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Carbon is identified in the operator's commercial grinding portfolio.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Thermosetting resin supports a polymer-material category premise.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Thermosetting resin supports a polymer-material category premise.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Ink-related grinding establishes a commercial reference but does not resolve whole-formulation versus constituent duty.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Ink-related grinding establishes a commercial reference but does not resolve whole-formulation versus constituent duty.

10. Micronization / Grinding - A. Ebbecke Verfahrenstechnik AG
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Commercial contract-grinding coverage includes natural materials and food ingredients; processing fees are excluded from equipment value.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Commercial contract-grinding coverage includes natural materials and food ingredients; processing fees are excluded from equipment value.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Plastic granulates and resins establish material coverage, not downstream customers' equipment ownership.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Plastic granulates and resins establish material coverage, not downstream customers' equipment ownership.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operator-side food-processing reference supports establishment attribution rather than automatically assigning equipment to its customers.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operator-side food-processing reference supports establishment attribution rather than automatically assigning equipment to its customers.
11. Manufacturing Capabilities - Asbury Advanced Materials
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Own manufacturing disclosure identifies carbon-material grinding and micronization; supports the material-duty premise only.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own manufacturing disclosure identifies carbon-material grinding and micronization; supports the material-duty premise only.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Custom formulations and dispersions are commercial outputs, but joint whole-formulation milling remains unmeasured.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Custom formulations and dispersions are commercial outputs, but joint whole-formulation milling remains unmeasured.
12. Pyrum Innovations AG - Interim Group Report January 1 to June 30, 2025
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The purchaser's 2025 report records a grinding-plant installation associated with recovered carbon black; no downstream material revenue is counted.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The purchaser's 2025 report records a grinding-plant installation associated with recovered carbon black; no downstream material revenue is counted.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The report establishes an actual recovery-business equipment context, while the exact attributable mill expenditure remains undisclosed.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The report establishes an actual recovery-business equipment context, while the exact attributable mill expenditure remains undisclosed.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The disclosed commercial-site grinding installation supports Industrial Production classification.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The disclosed commercial-site grinding installation supports Industrial Production classification.

13. NRRI Advances Efficient Grinding Technology on the Iron Range
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The institution distinguishes a planned bench-scale purchase from its loaned pilot equipment; not a completed-sale census.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The institution distinguishes a planned bench-scale purchase from its loaned pilot equipment; not a completed-sale census.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The May xx.xx 2024 account identifies a loaned pilot stirred mill; unpaid placement is not counted as equipment-sale revenue.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The May xx.xx 2024 account identifies a loaned pilot stirred mill; unpaid placement is not counted as equipment-sale revenue.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operating research institute is distinct from its mining clients, supporting buyer/material separation.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operating research institute is distinct from its mining clients, supporting buyer/material separation.
14. Planetary Ball Mill PM 100 - RETSCH
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The PM xx.xx is marketed as a benchtop instrument, supporting the small-laboratory pool classification without establishing sales weight.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The PM xx.xx is marketed as a benchtop instrument, supporting the small-laboratory pool classification without establishing sales weight.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The individual-instrument offering supports a narrower equipment-supply alternative; package incidence remains modeled.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The individual-instrument offering supports a narrower equipment-supply alternative; package incidence remains modeled.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: PM xx.xx is a marketed benchtop planetary platform, supporting laboratory-category mapping rather than shipment or price weights. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: PM xx.xx is a marketed benchtop planetary platform, supporting laboratory-category mapping rather than shipment or price weights. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The product page advertises both dry and wet capability. Actual dual-state purchase inclusion remains an explicit model assumption. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The product page advertises both dry and wet capability. Actual dual-state purchase inclusion remains an explicit model assumption. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))

15. Jet Mill - Contract History CW2408170, CanadaBuys
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: A May xx.xx 2026 laboratory jet-mill award totals CAD xx.xx; a dated procurement check, not a 2025 shipment or global average price.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: A May xx.xx 2026 laboratory jet-mill award totals CAD xx.xx; a dated procurement check, not a 2025 shipment or global average price.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The record distinguishes Natural Resources Canada as buying organization from PSPC as contracting organization, supporting establishment attribution.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The record distinguishes Natural Resources Canada as buying organization from PSPC as contracting organization, supporting establishment attribution.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The jet-mill award totals CAD xx.xx and is dated May xx.xx 2026. It is a nearby-period laboratory purchasing comparator, not a 2025 recognized sale, and supplies neither a gas-jet subtype nor a definitive channel role. ([canadabuys.canada.ca](https://canadabuys.canada.ca/en/tender-opportunities/contract-history/cw2408170-xx.xx))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The jet-mill award totals CAD xx.xx and is dated May xx.xx 2026. It is a nearby-period laboratory purchasing comparator, not a 2025 recognized sale, and supplies neither a gas-jet subtype nor a definitive channel role. ([canadabuys.canada.ca](https://canadabuys.canada.ca/en/tender-opportunities/contract-history/cw2408170-xx.xx))
16. MFC Production Equipment - FiberLean
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The manufacturer's commercial offering targets pulp, paper and related establishments; it is not a measured industry sales share.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The manufacturer's commercial offering targets pulp, paper and related establishments; it is not a measured industry sales share.
17. Pulverizing Equipment - Coperion
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The broader portfolio names power-generation applications and separately lists ultrafine equipment; this limits, rather than verifies, the assumed qualifying power-buyer allocation.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The broader portfolio names power-generation applications and separately lists ultrafine equipment; this limits, rather than verifies, the assumed qualifying power-buyer allocation.
18. LG Energy Solution Releases 2025 Financial Results - January 29, 2026
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own 2025 revenue decline and dated 2026 capital-expenditure reduction target constrain battery-related equipment-adoption assumptions.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Existing-asset reuse strategy qualifies a direct downstream-demand-to-new-carbon-material-mill investment inference.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Buyer investment restraint constrains the relative application multiplier; upstream chemical attribution remains separately assumed.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own battery-manufacturer financial and investment plans provide a counter-test, not an ultrafine equipment purchasing total.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The January 2026 emphasis on reduced new investment qualifies automatic growth in broader equipment-package adoption.

19. UNSD Classification Detail - ISIC Rev.4, Class 3830: Materials Recovery
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The official classification distinguishes secondary-material recovery from manufacture of new final products; it supplies no equipment sales weight.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The official classification distinguishes secondary-material recovery from manufacture of new final products; it supplies no equipment sales weight.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Recovered-input use alone does not classify the equipment operator as a recovery establishment rather than a product manufacturer.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Recovered-input use alone does not classify the equipment operator as a recovery establishment rather than a product manufacturer.
20. Ultrafin Mill: Super Masscolloider, Masuko MKCA6-5J CE - University of Ljubljana
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The university inventories a laboratory ultrafine mill within wood science; the institutional operator is not a wood-products manufacturer.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The university inventories a laboratory ultrafine mill within wood science; the institutional operator is not a wood-products manufacturer.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The institutional inventory expressly identifies laboratory equipment, supporting deployment classification without establishing a purchase-year value.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The institutional inventory expressly identifies laboratory equipment, supporting deployment classification without establishing a purchase-year value.
21. Contract Manufacturing of Pharmaceuticals - YUKI GOSEI KOGYO CO., LTD.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operator distinguishes production jet mills from smaller equipment, supporting industrial deployment at a pharmaceutical contract manufacturer.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operator distinguishes production jet mills from smaller equipment, supporting industrial deployment at a pharmaceutical contract manufacturer.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The actual pharmaceutical manufacturing operator is distinct from customers outsourcing production; processing-service receipts remain excluded.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The actual pharmaceutical manufacturing operator is distinct from customers outsourcing production; processing-service receipts remain excluded.

22. Record year for Metso stirred mills as mining industry opts for energy-efficient comminution technology

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Metso reports more than twenty Vertimill sales in 2025 and approximately xx.xx cumulative stirred-mill deliveries. Broader application coverage prevents treating these as ultrafine-only annual shipments; they constrain the modeled stirred/mining allocation and forecast premise.
([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Metso reports more than twenty Vertimill sales in 2025 and approximately xx.xx cumulative stirred-mill deliveries. Broader application coverage prevents treating these as ultrafine-only annual shipments; they constrain the modeled stirred/mining allocation and forecast premise.
([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The disclosed stirred-equipment activity supports material Media Mills participation, not the final modeled parent share.
([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The disclosed stirred-equipment activity supports material Media Mills participation, not the final modeled parent share.
([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))

23. Bühler strengthens its market position

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Bühler reports xx.xx% Grinding & Dispersing order growth in 2025 against a xx.xx% decline in broader Advanced Materials orders. This is a mixed commercial leading indicator, not observed market-share growth.
([buhlergroup.com](https://www.buhlergroup.com/global/en/media/media-releases/b%C3%BChler-strengthens-its-marketposition.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Bühler reports xx.xx% Grinding & Dispersing order growth in 2025 against a xx.xx% decline in broader Advanced Materials orders. This is a mixed commercial leading indicator, not observed market-share growth.
([buhlergroup.com](https://www.buhlergroup.com/global/en/media/media-releases/b%C3%BChler-strengthens-its-marketposition.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The disclosed battery-related and other application orders constrain differentiated Media Mills forecast assumptions without converting orders directly to annual equipment revenue.
([buhlergroup.com](https://www.buhlergroup.com/global/en/media/media-releases/b%C3%BChler-strengthens-its-marketposition.html))

24. Management Greetings | HOSOKAWAMICRON CORPORATION

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Hosokawa reports FY2025 net sales of JPY xx.xx, down xx.xx%, and orders down xx.xx%. The diversified-company result challenges uniform purchasing acceleration and constrains, rather than directly measures, technology-mix assumptions.
([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/ir/management_policy/management_greetings.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Hosokawa reports FY2025 net sales of JPY xx.xx, down xx.xx%, and orders down xx.xx%. The diversified-company result challenges uniform purchasing acceleration and constrains, rather than directly measures, technology-mix assumptions.
([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/ir/management_policy/management_greetings.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The same broader financial contraction is counterevidence to assuming uniform Media Mills growth across suppliers; no corporate revenue is assigned directly to the category.
([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/ir/management_policy/management_greetings.html))

25. Details of micromeritics | HOSOKAWAMICRON CORPORATION

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Hosokawa identifies its AS spiral offering, supporting subtype mapping rather than a sales weight. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Hosokawa identifies its AS spiral offering, supporting subtype mapping rather than a sales weight. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The AFG/TFG counterjet offerings support the retained Opposed-Jet commercial mapping. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The AFG/TFG counterjet offerings support the retained Opposed-Jet commercial mapping. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The manufacturer identifies Innovomizer as a mechanical ultrafine offering; ordinary impact equipment is not automatically included. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The manufacturer identifies Innovomizer as a mechanical ultrafine offering; ordinary impact equipment is not automatically included. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

26. Grinding Equipment Manufacturer Supplier Factory, Grinding System | Longly

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: LONGLY discloses current annual capacity above 2,000 equipment units and commercial wet-grinding offerings. Capacity is bridged through explicitly assumed timing, utilization and eligible-product factors; it is not reported 2025 stirred-mill shipments. ([longlymill.com](https://www.longlymill.com/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: LONGLY discloses current annual capacity above 2,000 equipment units and commercial wet-grinding offerings. Capacity is bridged through explicitly assumed timing, utilization and eligible-product factors; it is not reported 2025 stirred-mill shipments. ([longlymill.com](https://www.longlymill.com/))

27. Ultra-Fine Grinding - Hosokawa Micron Malaysia

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The inspected ultrafine portfolio identifies AWM-F table-roller equipment, supporting the qualifying Roller Mills boundary, not its assumed counts or prices. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The inspected ultrafine portfolio identifies AWM-F table-roller equipment, supporting the qualifying Roller Mills boundary, not its assumed counts or prices. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Super Orion is a marketed rotary ball-mill constituent of the combined rotary/planetary category. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Super Orion is a marketed rotary ball-mill constituent of the combined rotary/planetary category. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: MJT is explicitly listed as a target-type offering, supporting precedence of the named platform over overlapping generic jet terminology. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: MJT is explicitly listed as a target-type offering, supporting precedence of the named platform over overlapping generic jet terminology. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

28. Loop Jet Mill - Consistency. Compliance. Engineered.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The current named Loop Jet Mill listing establishes an offered commercial platform. It supports forecast category continuity, but does not disclose subtype revenue or prove 2025 sales. ([jetmillmfg.com](https://www.jetmillmfg.com/loop-jet-mill/))
29. SWECO Vibratory Grinding and Particle Size Reduction Equipment
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: SWECO markets Vibro-Energy grinding equipment with separate wet and wet/dry offerings. This supports commercial category and configuration mapping, not the modeled frequency of purchases. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: SWECO markets Vibro-Energy grinding equipment with separate wet and wet/dry offerings. This supports commercial category and configuration mapping, not the modeled frequency of purchases. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Named wet/dry models establish dual-state availability; they do not establish the exact supplied configuration or a market-wide value share. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Named wet/dry models establish dual-state availability; they do not establish the exact supplied configuration or a market-wide value share. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))
30. Fine-cutting mill with rotating classifying feature - the sensational new development!
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The September xx.xx 2014 own-product announcement establishes a pre-base-year SecoMy S cutting offering described for ultrafine commercial applications. It is category evidence, not annual equipment revenue. ([grinding.netzsch.com](https://grinding.netzsch.com/en/news/2014/fine-cutting-mill-with-rotating-classifying-feature-the-sensational-new-development))
31. NETZSCH SecoMy S - Precision Cutting Redefined!
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The August 2026 SecoMy S brochure confirms continuing commercial ultrafine-cutting positioning and system-supply availability. It supports category persistence, not the assumed forecast spending share. ([grinding.netzsch.com](https://grinding.netzsch.com/_Resources/Persistent/xx.xx/e/xx.xx/b/8e4b5adcfc16fcc2d83974f8080d614cce1a2c01/NETZSCH_Fine_Cutting_Mill_SecoMy_S_e.pdf))
32. Wet Milling and Dispersing Device - Star Burst - Sugino Corp.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: SUGINO's Star Burst portfolio identifies wet-jet equipment across research and production purchasing contexts. Only milling-attributable supply is included; adjacent droplet-only or dispersion activity is not automatically counted. ([suginocorp.com](https://www.suginocorp.com/star-burst/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: SUGINO's Star Burst portfolio identifies wet-jet equipment across research and production purchasing contexts. Only milling-attributable supply is included; adjacent droplet-only or dispersion activity is not automatically counted. ([suginocorp.com](https://www.suginocorp.com/star-burst/))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The wet-jet offering supports wet-state classification within the joint value model, not the total Wet Grinding share. ([suginocorp.com](https://www.suginocorp.com/star-burst/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The wet-jet offering supports wet-state classification within the joint value model, not the total Wet Grinding share. ([suginocorp.com](https://www.suginocorp.com/star-burst/))

33. IBU-tec | Mills - Milling Technology for Dry and Wet Grinding
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operator table separately lists two dry opposed-jet units. This is an installed-inventory observation, not a shipment or revenue ratio. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operator table separately lists two dry opposed-jet units. This is an installed-inventory observation, not a shipment or revenue ratio. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Three wet agitator-bead units are separately inventoried, supporting state-specific commercial classification without using their count as a market weight. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Three wet agitator-bead units are separately inventoried, supporting state-specific commercial classification without using their count as a market weight. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
34. Comminution - NTNU
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: NTNU separately records wet/dry capability for stirred and planetary equipment; the inventory is not a representative value-share dataset. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: NTNU separately records wet/dry capability for stirred and planetary equipment; the inventory is not a representative value-share dataset. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The planetary equipment is recorded as batch, supporting a laboratory batch context without assuming all laboratories are batch-only. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The planetary equipment is recorded as batch, supporting a laboratory batch context without assuming all laboratories are batch-only. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The laboratory jet rig is recorded as continuous, independently challenging equivalence between continuous mode and industrial scale. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The laboratory jet rig is recorded as continuous, independently challenging equivalence between continuous mode and industrial scale. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
35. Dry Batch Or Continuous Laboratory Mills - Union Process
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Union Process identifies SD-xx.xx as one laboratory offering for both batch and continuous service. Configuration-specific purchase inclusion and revenue are undisclosed. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Union Process identifies SD-xx.xx as one laboratory offering for both batch and continuous service. Configuration-specific purchase inclusion and revenue are undisclosed. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The same named offering advertises wet/dry capability, supporting a dual-state category premise rather than an observed adoption percentage. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The same named offering advertises wet/dry capability, supporting a dual-state category premise rather than an observed adoption percentage. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))

36. Retsch Contact & Services - Contact Partners Worldwide

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: RETSCH describes a network including daughter companies. Manufacturer affiliation, rather than contact location, informs direct-route attribution. ([retsch.com](https://www.retsch.com/contact-services/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: RETSCH describes a network including daughter companies. Manufacturer affiliation, rather than contact location, informs direct-route attribution. ([retsch.com](https://www.retsch.com/contact-services/))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The network also includes trained distributors, establishing a resale-access premise but not distributor ownership roles or annual sales weights. ([retsch.com](https://www.retsch.com/contact-services/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The network also includes trained distributors, establishing a resale-access premise but not distributor ownership roles or annual sales weights. ([retsch.com](https://www.retsch.com/contact-services/))

37. HOSOKAWA ALPINE Aktiengesellschaft - Conditions of Sale 371_00 EN

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Hosokawa requires company confirmation of representatives' transactions and makes contractual scope authoritative. The terms support agency-role attribution, not the assumed agent percentage. ([hosokawa-alpine.com](https://www.hosokawa-alpine.com/fileadmin/allgemein/Legal/AGB/AGB_Verkaufsbedingungen_en_371_00.pdf))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Hosokawa requires company confirmation of representatives' transactions and makes contractual scope authoritative. The terms support agency-role attribution, not the assumed agent percentage. ([hosokawa-alpine.com](https://www.hosokawa-alpine.com/fileadmin/allgemein/Legal/AGB/AGB_Verkaufsbedingungen_en_371_00.pdf))

38. UNSD - ISIC Rev.5, Class 4610: Wholesale on a Fee or Contract Basis

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: ISIC Rev.xx.xx class xx.xx defines fee/commission intermediation without ownership, supporting a non-title-taking agency numerator distinct from goods supplied on own account. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: ISIC Rev.xx.xx class xx.xx defines fee/commission intermediation without ownership, supporting a non-title-taking agency numerator distinct from goods supplied on own account. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Own-account wholesale is excluded from the agency class, supporting the reseller/agent partition without supplying ultrafine-mill channel shares. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own-account wholesale is excluded from the agency class, supporting the reseller/agent partition without supplying ultrafine-mill channel shares. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))

39. ITDI-PB-2024-057 - Supply, Delivery, Installation and Commissioning of Ultra-fine Friction Grinder

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The 2024 friction-grinder procurement had a PHP xx.xx budget and failed with no bidder. It establishes a configured-package spending ceiling and commercial category, not a sale or a shipment count. ([notices.philgeps.gov.ph](https://notices.philgeps.gov.ph/GEPSNONPILOT/Tender/PrintableBidNoticeAbstractUI.aspx?refid=xx.xx))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The 2024 friction-grinder procurement had a PHP xx.xx budget and failed with no bidder. It establishes a configured-package spending ceiling and commercial category, not a sale or a shipment count. ([notices.philgeps.gov.ph](https://notices.philgeps.gov.ph/GEPSNONPILOT/Tender/PrintableBidNoticeAbstractUI.aspx?refid=xx.xx))

40. Bangko Sentral ng Pilipinas - Balance of Payments Report, Q4 2024

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The central bank reports a 2024 average of PHP xx.xx per USD. Dividing the failed PHP xx.xx procurement budget by this rate gives an approximately USD xx.xx comparison ceiling, not realized equipment revenue. ([bsp.gov.ph](https://www.bsp.gov.ph/Media_And_Research/Balance%20of%20Payments%20Report/2024/BOP_4qtr2024.pdf))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The central bank reports a 2024 average of PHP xx.xx per USD. Dividing the failed PHP xx.xx procurement budget by this rate gives an approximately USD xx.xx comparison ceiling, not realized equipment revenue. ([bsp.gov.ph](https://www.bsp.gov.ph/Media_And_Research/Balance%20of%20Payments%20Report/2024/BOP_4qtr2024.pdf))

16.4. European Union

Table 280. European Union Ultra Fine Grinding Mill Market, by Country growth contribution, 2025-2032

Category	2025 value (USD Million)	2032 value (USD Million)	Added value (USD Million)	2025 share (%)	2032 share (%)	Change (pp)	Growth share (%)	CAGR (%)
Austria	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Belgium	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Bulgaria	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Croatia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Cyprus	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Czech Republic	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Denmark	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Estonia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Finland	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
France	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Germany	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Greece	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Hungary	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Ireland	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Italy	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Latvia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Lithuania	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Luxembourg	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Malta	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Netherlands	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Poland	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Portugal	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Romania	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Slovakia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Slovenia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Spain	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Sweden	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Scope total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 281. European Union Ultra Fine Grinding Mill Market Size, by Group, 2017-2040 (USD Million)

Group	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Austria	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Belgium	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Bulgaria	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Croatia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Cyprus	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Czech Republic	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Denmark	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Estonia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Finland	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
France	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Germany	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Greece	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Hungary	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Ireland	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Italy	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Latvia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Lithuania	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Luxembourg	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Malta	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Netherlands	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Poland	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Portugal	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Romania	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Slovakia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Slovenia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Spain	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Sweden	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx

Table 282. European Union Ultra Fine Grinding Mill Market Size, by Supply Scope, 2017-2040 (USD Million)

Supply Scope	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Integrated Milling Packages	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Standalone Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 283. European Union Ultra Fine Grinding Mill Market Size, by Mill Technology, 2017-2040 (USD Million)

Mill Technology	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Cutting Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Disc and Colloid Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Gas-Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mechanical Impact Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Media Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Roller Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wet-Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 284. European Union Ultra Fine Grinding Mill Market Size, by Media Mills, 2017-2040 (USD Million)

Media Mills	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Rotary and Planetary Ball Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Stirred Media Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Vibratory Media Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 285. European Union Ultra Fine Grinding Mill Market Size, by Gas-Jet Mills, 2017-2040 (USD Million)

Gas-Jet Mills	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Loop Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Opposed-Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Spiral Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Target Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 286. European Union Ultra Fine Grinding Mill Market Size, by Processed Material, 2017-2040 (USD Million)

Processed Material	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Biomass and Natural Ingredients	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Carbonaceous Materials	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Formulations and Composites	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Industrial Minerals	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Inorganic Chemicals, Ceramics, and Glass	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Metal Ores and Concentrates	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Metals and Alloys	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Organic Chemicals	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Polymers and Elastomers	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 287. European Union Ultra Fine Grinding Mill Market Size, by Buyer Industry, 2017-2040 (USD Million)

Buyer Industry	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Chemical and Fuel Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Electrical and Electronic Product Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Food, Beverage, and Feed Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Glass, Ceramics, and Construction Materials Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Materials Recovery and Recycling	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Metals and Fabricated Metal Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mining and Mineral Processing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Pharmaceutical Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Power and Heat Generation	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Research, Education, and Testing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Rubber and Plastics Product Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wood, Pulp, and Paper Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Others	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 288. European Union Ultra Fine Grinding Mill Market Size, by Deployment Scale, 2017-2040 (USD Million)

Deployment Scale	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Industrial Production	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Laboratory	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Pilot	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 289. European Union Ultra Fine Grinding Mill Market Size, by Sales Channel, 2017-2040 (USD Million)

Sales Channel	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Agent-Mediated Sales	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Independent Reseller Sales	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Manufacturer-Direct Sales	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 290. European Union Ultra Fine Grinding Mill Market Size, by Processing State, 2017-2040 (USD Million)

Processing State	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Dry Grinding	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wet and Dry Grinding	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wet Grinding	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 291. European Union Ultra Fine Grinding Mill Market Size, by Operating Mode, 2017-2040 (USD Million)

Operating Mode	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Batch	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Batch and Continuous	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Continuous	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Sources & Evidence

1. Methodology - UNIDO Industrial Analytics Platform
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The methodology identifies Monaco within French trade coverage; the customs input is an imperfect national demand proxy rather than a directly observed country numerator.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The methodology identifies Monaco within French trade coverage; the customs input is an imperfect national demand proxy rather than a directly observed country numerator.

2. Hosokawa Micron - FY2025 Financial Results Presentation, November 25, 2025 (Japanese)
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; material attribution modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; material attribution modeled.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; establishment attribution modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; establishment attribution modeled.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; buyer attribution assumed.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; buyer attribution assumed.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; qualifying power attribution unverified.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; qualifying power attribution unverified.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; institutional attribution assumed.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; institutional attribution assumed.

3. Metso Receives Order for Grinding Mills to a Copper Project in Africa
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Approximately EUR xx.xx 2024 HIGmill order includes auxiliaries and services; a package-scale anchor, not recognized annual revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Approximately EUR xx.xx 2024 HIGmill order includes auxiliaries and services; a package-scale anchor, not recognized annual revenue.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The copper-project award establishes an ore/concentrate commercial purchasing context.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The copper-project award establishes an ore/concentrate commercial purchasing context.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The award concerns an African mining project; it does not disclose the global mining-buyer share.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The award concerns an African mining project; it does not disclose the global mining-buyer share.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Large industrial equipment procurement supports the production-scale category premise.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Large industrial equipment procurement supports the production-scale category premise.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The August xx.xx 2024 announcement records an approximately EUR xx.xx HIGmill order including auxiliaries and services. It anchors package-level commercial materiality, not a mill unit price or 2025 recognized revenue. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The August xx.xx 2024 announcement records an approximately EUR xx.xx HIGmill order including auxiliaries and services. It anchors package-level commercial materiality, not a mill unit price or 2025 recognized revenue. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The stirred-package order supports the Media Mills value-weight model and continuing commercial-demand premise, with order-to-revenue timing unresolved. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The stirred-package order supports the Media Mills value-weight model and continuing commercial-demand premise, with order-to-revenue timing unresolved. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
4. HIGmill Plant - Metso
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Standalone marketing terminology does not establish the study's Standalone Mills equipment scope.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Standalone marketing terminology does not establish the study's Standalone Mills equipment scope.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: HIGmill Plant includes pre-engineered auxiliary modules, supporting classification as an equipment package.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: HIGmill Plant includes pre-engineered auxiliary modules, supporting classification as an equipment package.

5. IsaMill - About, Technology Partnership and Engineering
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Delivery alternatives permit mill-only supply or additional auxiliary equipment; actual equipment scope determines attribution.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Delivery alternatives permit mill-only supply or additional auxiliary equipment; actual equipment scope determines attribution.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Modular auxiliary-inclusive and turnkey alternatives support differentiated package scope, without proving a global adoption percentage.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Modular auxiliary-inclusive and turnkey alternatives support differentiated package scope, without proving a global adoption percentage.
6. Commission Processing - NIPPON COKE & ENGINEERING CO., LTD.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Own commercial processing portfolio identifies glass, ceramics and inorganic materials; establishes material mapping, not equipment revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own commercial processing portfolio identifies glass, ceramics and inorganic materials; establishes material mapping, not equipment revenue.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Organic pigments are named commercial processing materials.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Organic pigments are named commercial processing materials.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Metal powders are named commercial processing materials.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Metal powders are named commercial processing materials.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Carbon is identified in the operator's commercial grinding portfolio.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Carbon is identified in the operator's commercial grinding portfolio.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Thermosetting resin supports a polymer-material category premise.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Thermosetting resin supports a polymer-material category premise.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Ink-related grinding establishes a commercial reference but does not resolve whole-formulation versus constituent duty.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Ink-related grinding establishes a commercial reference but does not resolve whole-formulation versus constituent duty.

7. Micronization / Grinding - A. Ebbecke Verfahrenstechnik AG
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Commercial contract-grinding coverage includes natural materials and food ingredients; processing fees are excluded from equipment value.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Commercial contract-grinding coverage includes natural materials and food ingredients; processing fees are excluded from equipment value.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Plastic granulates and resins establish material coverage, not downstream customers' equipment ownership.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Plastic granulates and resins establish material coverage, not downstream customers' equipment ownership.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operator-side food-processing reference supports establishment attribution rather than automatically assigning equipment to its customers.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operator-side food-processing reference supports establishment attribution rather than automatically assigning equipment to its customers.
8. Manufacturing Capabilities - Asbury Advanced Materials
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Own manufacturing disclosure identifies carbon-material grinding and micronization; supports the material-duty premise only.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own manufacturing disclosure identifies carbon-material grinding and micronization; supports the material-duty premise only.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Custom formulations and dispersions are commercial outputs, but joint whole-formulation milling remains unmeasured.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Custom formulations and dispersions are commercial outputs, but joint whole-formulation milling remains unmeasured.
9. Pyrum Innovations AG - Interim Group Report January 1 to June 30, 2025
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The purchaser's 2025 report records a grinding-plant installation associated with recovered carbon black; no downstream material revenue is counted.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The purchaser's 2025 report records a grinding-plant installation associated with recovered carbon black; no downstream material revenue is counted.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The report establishes an actual recovery-business equipment context, while the exact attributable mill expenditure remains undisclosed.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The report establishes an actual recovery-business equipment context, while the exact attributable mill expenditure remains undisclosed.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The disclosed commercial-site grinding installation supports Industrial Production classification.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The disclosed commercial-site grinding installation supports Industrial Production classification.

10. NRRI Advances Efficient Grinding Technology on the Iron Range
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The institution distinguishes a planned bench-scale purchase from its loaned pilot equipment; not a completed-sale census.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The institution distinguishes a planned bench-scale purchase from its loaned pilot equipment; not a completed-sale census.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The May xx.xx 2024 account identifies a loaned pilot stirred mill; unpaid placement is not counted as equipment-sale revenue.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The May xx.xx 2024 account identifies a loaned pilot stirred mill; unpaid placement is not counted as equipment-sale revenue.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operating research institute is distinct from its mining clients, supporting buyer/material separation.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operating research institute is distinct from its mining clients, supporting buyer/material separation.
11. Planetary Ball Mill PM 100 - RETSCH
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The PM xx.xx is marketed as a benchtop instrument, supporting the small-laboratory pool classification without establishing sales weight.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The PM xx.xx is marketed as a benchtop instrument, supporting the small-laboratory pool classification without establishing sales weight.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The individual-instrument offering supports a narrower equipment-supply alternative; package incidence remains modeled.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The individual-instrument offering supports a narrower equipment-supply alternative; package incidence remains modeled.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: PM xx.xx is a marketed benchtop planetary platform, supporting laboratory-category mapping rather than shipment or price weights. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: PM xx.xx is a marketed benchtop planetary platform, supporting laboratory-category mapping rather than shipment or price weights. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The product page advertises both dry and wet capability. Actual dual-state purchase inclusion remains an explicit model assumption. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The product page advertises both dry and wet capability. Actual dual-state purchase inclusion remains an explicit model assumption. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))

12. Jet Mill - Contract History CW2408170, CanadaBuys
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: A May xx.xx 2026 laboratory jet-mill award totals CAD xx.xx; a dated procurement check, not a 2025 shipment or global average price.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: A May xx.xx 2026 laboratory jet-mill award totals CAD xx.xx; a dated procurement check, not a 2025 shipment or global average price.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The record distinguishes Natural Resources Canada as buying organization from PSPC as contracting organization, supporting establishment attribution.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The record distinguishes Natural Resources Canada as buying organization from PSPC as contracting organization, supporting establishment attribution.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The jet-mill award totals CAD xx.xx and is dated May xx.xx 2026. It is a nearby-period laboratory purchasing comparator, not a 2025 recognized sale, and supplies neither a gas-jet subtype nor a definitive channel role. ([canadabuys.canada.ca](https://canadabuys.canada.ca/en/tender-opportunities/contract-history/cw2408170-xx.xx))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The jet-mill award totals CAD xx.xx and is dated May xx.xx 2026. It is a nearby-period laboratory purchasing comparator, not a 2025 recognized sale, and supplies neither a gas-jet subtype nor a definitive channel role. ([canadabuys.canada.ca](https://canadabuys.canada.ca/en/tender-opportunities/contract-history/cw2408170-xx.xx))
13. MFC Production Equipment - FiberLean
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The manufacturer's commercial offering targets pulp, paper and related establishments; it is not a measured industry sales share.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The manufacturer's commercial offering targets pulp, paper and related establishments; it is not a measured industry sales share.
14. Pulverizing Equipment - Coperion
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The broader portfolio names power-generation applications and separately lists ultrafine equipment; this limits, rather than verifies, the assumed qualifying power-buyer allocation.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The broader portfolio names power-generation applications and separately lists ultrafine equipment; this limits, rather than verifies, the assumed qualifying power-buyer allocation.
15. LG Energy Solution Releases 2025 Financial Results - January 29, 2026
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own 2025 revenue decline and dated 2026 capital-expenditure reduction target constrain battery-related equipment-adoption assumptions.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Existing-asset reuse strategy qualifies a direct downstream-demand-to-new-carbon-material-mill investment inference.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Buyer investment restraint constrains the relative application multiplier; upstream chemical attribution remains separately assumed.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own battery-manufacturer financial and investment plans provide a counter-test, not an ultrafine equipment purchasing total.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The January 2026 emphasis on reduced new investment qualifies automatic growth in broader equipment-package adoption.

16. UNSD Classification Detail - ISIC Rev.4, Class 3830: Materials Recovery
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The official classification distinguishes secondary-material recovery from manufacture of new final products; it supplies no equipment sales weight.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The official classification distinguishes secondary-material recovery from manufacture of new final products; it supplies no equipment sales weight.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Recovered-input use alone does not classify the equipment operator as a recovery establishment rather than a product manufacturer.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Recovered-input use alone does not classify the equipment operator as a recovery establishment rather than a product manufacturer.
17. Ultrafin Mill: Super Masscolloider, Masuko MKCA6-5J CE - University of Ljubljana
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The university inventories a laboratory ultrafine mill within wood science; the institutional operator is not a wood-products manufacturer.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The university inventories a laboratory ultrafine mill within wood science; the institutional operator is not a wood-products manufacturer.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The institutional inventory expressly identifies laboratory equipment, supporting deployment classification without establishing a purchase-year value.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The institutional inventory expressly identifies laboratory equipment, supporting deployment classification without establishing a purchase-year value.
18. Contract Manufacturing of Pharmaceuticals - YUKI GOSEI KOGYO CO., LTD.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operator distinguishes production jet mills from smaller equipment, supporting industrial deployment at a pharmaceutical contract manufacturer.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operator distinguishes production jet mills from smaller equipment, supporting industrial deployment at a pharmaceutical contract manufacturer.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The actual pharmaceutical manufacturing operator is distinct from customers outsourcing production; processing-service receipts remain excluded.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The actual pharmaceutical manufacturing operator is distinct from customers outsourcing production; processing-service receipts remain excluded.

19. Record year for Metso stirred mills as mining industry opts for energy-efficient comminution technology

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Metso reports more than twenty Vertimill sales in 2025 and approximately xx.xx cumulative stirred-mill deliveries. Broader application coverage prevents treating these as ultrafine-only annual shipments; they constrain the modeled stirred/mining allocation and forecast premise.
([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Metso reports more than twenty Vertimill sales in 2025 and approximately xx.xx cumulative stirred-mill deliveries. Broader application coverage prevents treating these as ultrafine-only annual shipments; they constrain the modeled stirred/mining allocation and forecast premise.
([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The disclosed stirred-equipment activity supports material Media Mills participation, not the final modeled parent share.
([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The disclosed stirred-equipment activity supports material Media Mills participation, not the final modeled parent share.
([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))

20. Bühler strengthens its market position

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Bühler reports xx.xx% Grinding & Dispersing order growth in 2025 against a xx.xx% decline in broader Advanced Materials orders. This is a mixed commercial leading indicator, not observed market-share growth.
([buhlergroup.com](https://www.buhlergroup.com/global/en/media/media-releases/b%C3%BChler-strengthens-its-marketposition.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Bühler reports xx.xx% Grinding & Dispersing order growth in 2025 against a xx.xx% decline in broader Advanced Materials orders. This is a mixed commercial leading indicator, not observed market-share growth.
([buhlergroup.com](https://www.buhlergroup.com/global/en/media/media-releases/b%C3%BChler-strengthens-its-marketposition.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The disclosed battery-related and other application orders constrain differentiated Media Mills forecast assumptions without converting orders directly to annual equipment revenue.
([buhlergroup.com](https://www.buhlergroup.com/global/en/media/media-releases/b%C3%BChler-strengthens-its-marketposition.html))

21. Management Greetings | HOSOKAWAMICRON CORPORATION

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Hosokawa reports FY2025 net sales of JPY xx.xx, down xx.xx%, and orders down xx.xx%. The diversified-company result challenges uniform purchasing acceleration and constrains, rather than directly measures, technology-mix assumptions.
([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/ir/management_policy/management_greetings.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Hosokawa reports FY2025 net sales of JPY xx.xx, down xx.xx%, and orders down xx.xx%. The diversified-company result challenges uniform purchasing acceleration and constrains, rather than directly measures, technology-mix assumptions.
([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/ir/management_policy/management_greetings.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The same broader financial contraction is counterevidence to assuming uniform Media Mills growth across suppliers; no corporate revenue is assigned directly to the category.
([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/ir/management_policy/management_greetings.html))

22. Details of micromeritics | HOSOKAWAMICRON CORPORATION

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Hosokawa identifies its AS spiral offering, supporting subtype mapping rather than a sales weight. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Hosokawa identifies its AS spiral offering, supporting subtype mapping rather than a sales weight. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The AFG/TFG counterjet offerings support the retained Opposed-Jet commercial mapping. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The AFG/TFG counterjet offerings support the retained Opposed-Jet commercial mapping. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The manufacturer identifies Innovomizer as a mechanical ultrafine offering; ordinary impact equipment is not automatically included. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The manufacturer identifies Innovomizer as a mechanical ultrafine offering; ordinary impact equipment is not automatically included. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

23. Grinding Equipment Manufacturer Supplier Factory, Grinding System | Longly

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: LONGLY discloses current annual capacity above 2,000 equipment units and commercial wet-grinding offerings. Capacity is bridged through explicitly assumed timing, utilization and eligible-product factors; it is not reported 2025 stirred-mill shipments. ([longlymill.com](https://www.longlymill.com/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: LONGLY discloses current annual capacity above 2,000 equipment units and commercial wet-grinding offerings. Capacity is bridged through explicitly assumed timing, utilization and eligible-product factors; it is not reported 2025 stirred-mill shipments. ([longlymill.com](https://www.longlymill.com/))

24. Ultra-Fine Grinding - Hosokawa Micron Malaysia

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The inspected ultrafine portfolio identifies AWM-F table-roller equipment, supporting the qualifying Roller Mills boundary, not its assumed counts or prices. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The inspected ultrafine portfolio identifies AWM-F table-roller equipment, supporting the qualifying Roller Mills boundary, not its assumed counts or prices. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Super Orion is a marketed rotary ball-mill constituent of the combined rotary/planetary category. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Super Orion is a marketed rotary ball-mill constituent of the combined rotary/planetary category. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: MJT is explicitly listed as a target-type offering, supporting precedence of the named platform over overlapping generic jet terminology. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: MJT is explicitly listed as a target-type offering, supporting precedence of the named platform over overlapping generic jet terminology. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

25. Loop Jet Mill - Consistency. Compliance. Engineered.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The current named Loop Jet Mill listing establishes an offered commercial platform. It supports forecast category continuity, but does not disclose subtype revenue or prove 2025 sales. ([jetmillmfg.com](https://www.jetmillmfg.com/loop-jet-mill/))
26. SWECO Vibratory Grinding and Particle Size Reduction Equipment
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: SWECO markets Vibro-Energy grinding equipment with separate wet and wet/dry offerings. This supports commercial category and configuration mapping, not the modeled frequency of purchases. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: SWECO markets Vibro-Energy grinding equipment with separate wet and wet/dry offerings. This supports commercial category and configuration mapping, not the modeled frequency of purchases. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Named wet/dry models establish dual-state availability; they do not establish the exact supplied configuration or a market-wide value share. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Named wet/dry models establish dual-state availability; they do not establish the exact supplied configuration or a market-wide value share. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))
27. Fine-cutting mill with rotating classifying feature - the sensational new development!
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The September xx.xx 2014 own-product announcement establishes a pre-base-year SecoMy S cutting offering described for ultrafine commercial applications. It is category evidence, not annual equipment revenue. ([grinding.netzsch.com](https://grinding.netzsch.com/en/news/2014/fine-cutting-mill-with-rotating-classifying-feature-the-sensational-new-development))
28. NETZSCH SecoMy S - Precision Cutting Redefined!
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The August 2026 SecoMy S brochure confirms continuing commercial ultrafine-cutting positioning and system-supply availability. It supports category persistence, not the assumed forecast spending share. ([grinding.netzsch.com](https://grinding.netzsch.com/_Resources/Persistent/xx.xx/e/xx.xx/b/8e4b5adcfc16fcc2d83974f8080d614cce1a2c01/NETZSCH_Fine_Cutting_Mill_SecoMy_S_e.pdf))
29. Wet Milling and Dispersing Device - Star Burst - Sugino Corp.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: SUGINO's Star Burst portfolio identifies wet-jet equipment across research and production purchasing contexts. Only milling-attributable supply is included; adjacent droplet-only or dispersion activity is not automatically counted. ([suginocorp.com](https://www.suginocorp.com/star-burst/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: SUGINO's Star Burst portfolio identifies wet-jet equipment across research and production purchasing contexts. Only milling-attributable supply is included; adjacent droplet-only or dispersion activity is not automatically counted. ([suginocorp.com](https://www.suginocorp.com/star-burst/))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The wet-jet offering supports wet-state classification within the joint value model, not the total Wet Grinding share. ([suginocorp.com](https://www.suginocorp.com/star-burst/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The wet-jet offering supports wet-state classification within the joint value model, not the total Wet Grinding share. ([suginocorp.com](https://www.suginocorp.com/star-burst/))

30. IBU-tec | Mills - Milling Technology for Dry and Wet Grinding
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operator table separately lists two dry opposed-jet units. This is an installed-inventory observation, not a shipment or revenue ratio. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operator table separately lists two dry opposed-jet units. This is an installed-inventory observation, not a shipment or revenue ratio. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Three wet agitator-bead units are separately inventoried, supporting state-specific commercial classification without using their count as a market weight. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Three wet agitator-bead units are separately inventoried, supporting state-specific commercial classification without using their count as a market weight. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
31. Comminution - NTNU
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: NTNU separately records wet/dry capability for stirred and planetary equipment; the inventory is not a representative value-share dataset. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: NTNU separately records wet/dry capability for stirred and planetary equipment; the inventory is not a representative value-share dataset. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The planetary equipment is recorded as batch, supporting a laboratory batch context without assuming all laboratories are batch-only. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The planetary equipment is recorded as batch, supporting a laboratory batch context without assuming all laboratories are batch-only. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The laboratory jet rig is recorded as continuous, independently challenging equivalence between continuous mode and industrial scale. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The laboratory jet rig is recorded as continuous, independently challenging equivalence between continuous mode and industrial scale. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
32. Dry Batch Or Continuous Laboratory Mills - Union Process
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Union Process identifies SD-xx.xx as one laboratory offering for both batch and continuous service. Configuration-specific purchase inclusion and revenue are undisclosed. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Union Process identifies SD-xx.xx as one laboratory offering for both batch and continuous service. Configuration-specific purchase inclusion and revenue are undisclosed. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The same named offering advertises wet/dry capability, supporting a dual-state category premise rather than an observed adoption percentage. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The same named offering advertises wet/dry capability, supporting a dual-state category premise rather than an observed adoption percentage. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))

33. Retsch Contact & Services - Contact Partners Worldwide

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: RETSCH describes a network including daughter companies. Manufacturer affiliation, rather than contact location, informs direct-route attribution. ([retsch.com](https://www.retsch.com/contact-services/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: RETSCH describes a network including daughter companies. Manufacturer affiliation, rather than contact location, informs direct-route attribution. ([retsch.com](https://www.retsch.com/contact-services/))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The network also includes trained distributors, establishing a resale-access premise but not distributor ownership roles or annual sales weights. ([retsch.com](https://www.retsch.com/contact-services/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The network also includes trained distributors, establishing a resale-access premise but not distributor ownership roles or annual sales weights. ([retsch.com](https://www.retsch.com/contact-services/))

34. HOSOKAWA ALPINE Aktiengesellschaft - Conditions of Sale 371_00 EN

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Hosokawa requires company confirmation of representatives' transactions and makes contractual scope authoritative. The terms support agency-role attribution, not the assumed agent percentage. ([hosokawa-alpine.com](https://www.hosokawa-alpine.com/fileadmin/allgemein/Legal/AGB/AGB_Verkaufsbedingungen_en_371_00.pdf))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Hosokawa requires company confirmation of representatives' transactions and makes contractual scope authoritative. The terms support agency-role attribution, not the assumed agent percentage. ([hosokawa-alpine.com](https://www.hosokawa-alpine.com/fileadmin/allgemein/Legal/AGB/AGB_Verkaufsbedingungen_en_371_00.pdf))

35. UNSD - ISIC Rev.5, Class 4610: Wholesale on a Fee or Contract Basis

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: ISIC Rev.xx.xx class xx.xx defines fee/commission intermediation without ownership, supporting a non-title-taking agency numerator distinct from goods supplied on own account. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: ISIC Rev.xx.xx class xx.xx defines fee/commission intermediation without ownership, supporting a non-title-taking agency numerator distinct from goods supplied on own account. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Own-account wholesale is excluded from the agency class, supporting the reseller/agent partition without supplying ultrafine-mill channel shares. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own-account wholesale is excluded from the agency class, supporting the reseller/agent partition without supplying ultrafine-mill channel shares. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))

36. ITDI-PB-2024-057 - Supply, Delivery, Installation and Commissioning of Ultra-fine Friction Grinder

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The 2024 friction-grinder procurement had a PHP xx.xx budget and failed with no bidder. It establishes a configured-package spending ceiling and commercial category, not a sale or a shipment count. ([notices.philgeps.gov.ph](https://notices.philgeps.gov.ph/GEPSNONPILOT/Tender/PrintableBidNoticeAbstractUI.aspx?refid=xx.xx))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The 2024 friction-grinder procurement had a PHP xx.xx budget and failed with no bidder. It establishes a configured-package spending ceiling and commercial category, not a sale or a shipment count. ([notices.philgeps.gov.ph](https://notices.philgeps.gov.ph/GEPSNONPILOT/Tender/PrintableBidNoticeAbstractUI.aspx?refid=xx.xx))

37. Bangko Sentral ng Pilipinas - Balance of Payments Report, Q4 2024

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The central bank reports a 2024 average of PHP xx.xx per USD. Dividing the failed PHP xx.xx procurement budget by this rate gives an approximately USD xx.xx comparison ceiling, not realized equipment revenue. ([bsp.gov.ph](https://www.bsp.gov.ph/Media_And_Research/Balance%20of%20Payments%20Report/2024/BOP_4qtr2024.pdf))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The central bank reports a 2024 average of PHP xx.xx per USD. Dividing the failed PHP xx.xx procurement budget by this rate gives an approximately USD xx.xx comparison ceiling, not realized equipment revenue. ([bsp.gov.ph](https://www.bsp.gov.ph/Media_And_Research/Balance%20of%20Payments%20Report/2024/BOP_4qtr2024.pdf))

16.5. ASEAN

Table 292. ASEAN Ultra Fine Grinding Mill Market, by Country growth contribution, 2025-2032

Category	2025 value (USD Million)	2032 value (USD Million)	Added value (USD Million)	2025 share (%)	2032 share (%)	Change (pp)	Growth share (%)	CAGR (%)
Brunei	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Cambodia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Indonesia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Lao People's Democratic Republic	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Malaysia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Myanmar	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Philippines	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Singapore	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Thailand	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Vietnam	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Scope total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 293. ASEAN Ultra Fine Grinding Mill Market Size, by Group, 2017-2040 (USD Million)

Group	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Brunei	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Cambodia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Indonesia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Lao People's Democratic Republic	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Malaysia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Myanmar	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Philippines	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Singapore	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Thailand	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Vietnam	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx

Table 294. ASEAN Ultra Fine Grinding Mill Market Size, by Supply Scope, 2017-2040 (USD Million)

Supply Scope	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Integrated Milling Packages	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Standalone Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 295. ASEAN Ultra Fine Grinding Mill Market Size, by Mill Technology, 2017-2040 (USD Million)

Mill Technology	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Cutting Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Disc and Colloid Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Gas-Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mechanical Impact Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Media Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Roller Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wet-Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 296. ASEAN Ultra Fine Grinding Mill Market Size, by Media Mills, 2017-2040 (USD Million)

Media Mills	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Rotary and Planetary Ball Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Stirred Media Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Vibratory Media Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 297. ASEAN Ultra Fine Grinding Mill Market Size, by Gas-Jet Mills, 2017-2040 (USD Million)

Gas-Jet Mills	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Loop Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Opposed-Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Spiral Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Target Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 298. ASEAN Ultra Fine Grinding Mill Market Size, by Processed Material, 2017-2040 (USD Million)

Processed Material	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Biomass and Natural Ingredients	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Carbonaceous Materials	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Formulations and Composites	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Industrial Minerals	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Inorganic Chemicals, Ceramics, and Glass	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Metal Ores and Concentrates	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Metals and Alloys	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Organic Chemicals	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Polymers and Elastomers	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 299. ASEAN Ultra Fine Grinding Mill Market Size, by Buyer Industry, 2017-2040 (USD Million)

Buyer Industry	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Chemical and Fuel Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Electrical and Electronic Product Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Food, Beverage, and Feed Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Glass, Ceramics, and Construction Materials Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Materials Recovery and Recycling	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Metals and Fabricated Metal Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mining and Mineral Processing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Pharmaceutical Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Power and Heat Generation	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Research, Education, and Testing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Rubber and Plastics Product Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wood, Pulp, and Paper Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Others	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 300. ASEAN Ultra Fine Grinding Mill Market Size, by Deployment Scale, 2017-2040 (USD Million)

Deployment Scale	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Industrial Production	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Laboratory	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Pilot	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 301. ASEAN Ultra Fine Grinding Mill Market Size, by Sales Channel, 2017-2040 (USD Million)

Sales Channel	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Agent-Mediated Sales	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Independent Reseller Sales	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Manufacturer-Direct Sales	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 302. ASEAN Ultra Fine Grinding Mill Market Size, by Processing State, 2017-2040 (USD Million)

Processing State	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Dry Grinding	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wet and Dry Grinding	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wet Grinding	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 303. ASEAN Ultra Fine Grinding Mill Market Size, by Operating Mode, 2017-2040 (USD Million)

Operating Mode	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Batch	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Batch and Continuous	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Continuous	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Sources & Evidence

1. Mach for mixing/kneading/crushing/grinding etc imports by country | 2023
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Vietnam's USD xx.xx 2023 imports supply the lagged broad machinery input, not observed 2025 mill receipts.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Vietnam's USD xx.xx 2023 imports supply the lagged broad machinery input, not observed 2025 mill receipts.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Lao PDR's USD xx.xx 2023 imports provide a lagged broad machinery anchor.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Lao PDR's USD xx.xx 2023 imports provide a lagged broad machinery anchor.
2. Crushing/grinding machines for earth/ stone/ore imports by country | 2023
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Vietnam's 2023 mineral machinery imports of USD xx.xx provide the lagged secondary purchasing input.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Vietnam's 2023 mineral machinery imports of USD xx.xx provide the lagged secondary purchasing input.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Lao PDR's USD xx.xx 2023 mineral machinery imports anchor its mineral-oriented purchasing component.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Lao PDR's USD xx.xx 2023 mineral machinery imports anchor its mineral-oriented purchasing component.

3. Hosokawa Micron - FY2025 Financial Results Presentation, November 25, 2025 (Japanese)
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; material attribution modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; material attribution modeled.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; establishment attribution modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; establishment attribution modeled.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; buyer attribution assumed.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; buyer attribution assumed.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; qualifying power attribution unverified.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; qualifying power attribution unverified.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; institutional attribution assumed.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; institutional attribution assumed.

4. Metso Receives Order for Grinding Mills to a Copper Project in Africa
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Approximately EUR xx.xx 2024 HIGmill order includes auxiliaries and services; a package-scale anchor, not recognized annual revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Approximately EUR xx.xx 2024 HIGmill order includes auxiliaries and services; a package-scale anchor, not recognized annual revenue.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The copper-project award establishes an ore/concentrate commercial purchasing context.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The copper-project award establishes an ore/concentrate commercial purchasing context.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The award concerns an African mining project; it does not disclose the global mining-buyer share.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The award concerns an African mining project; it does not disclose the global mining-buyer share.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Large industrial equipment procurement supports the production-scale category premise.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Large industrial equipment procurement supports the production-scale category premise.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The August xx.xx 2024 announcement records an approximately EUR xx.xx HIGmill order including auxiliaries and services. It anchors package-level commercial materiality, not a mill unit price or 2025 recognized revenue. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The August xx.xx 2024 announcement records an approximately EUR xx.xx HIGmill order including auxiliaries and services. It anchors package-level commercial materiality, not a mill unit price or 2025 recognized revenue. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The stirred-package order supports the Media Mills value-weight model and continuing commercial-demand premise, with order-to-revenue timing unresolved. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The stirred-package order supports the Media Mills value-weight model and continuing commercial-demand premise, with order-to-revenue timing unresolved. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
5. HIGmill Plant - Metso
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Standalone marketing terminology does not establish the study's Standalone Mills equipment scope.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Standalone marketing terminology does not establish the study's Standalone Mills equipment scope.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: HIGmill Plant includes pre-engineered auxiliary modules, supporting classification as an equipment package.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: HIGmill Plant includes pre-engineered auxiliary modules, supporting classification as an equipment package.

6. IsaMill - About, Technology Partnership and Engineering
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Delivery alternatives permit mill-only supply or additional auxiliary equipment; actual equipment scope determines attribution.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Delivery alternatives permit mill-only supply or additional auxiliary equipment; actual equipment scope determines attribution.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Modular auxiliary-inclusive and turnkey alternatives support differentiated package scope, without proving a global adoption percentage.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Modular auxiliary-inclusive and turnkey alternatives support differentiated package scope, without proving a global adoption percentage.
7. Commission Processing - NIPPON COKE & ENGINEERING CO., LTD.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Own commercial processing portfolio identifies glass, ceramics and inorganic materials; establishes material mapping, not equipment revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own commercial processing portfolio identifies glass, ceramics and inorganic materials; establishes material mapping, not equipment revenue.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Organic pigments are named commercial processing materials.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Organic pigments are named commercial processing materials.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Metal powders are named commercial processing materials.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Metal powders are named commercial processing materials.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Carbon is identified in the operator's commercial grinding portfolio.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Carbon is identified in the operator's commercial grinding portfolio.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Thermosetting resin supports a polymer-material category premise.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Thermosetting resin supports a polymer-material category premise.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Ink-related grinding establishes a commercial reference but does not resolve whole-formulation versus constituent duty.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Ink-related grinding establishes a commercial reference but does not resolve whole-formulation versus constituent duty.

8. Micronization / Grinding - A. Ebbecke Verfahrenstechnik AG
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Commercial contract-grinding coverage includes natural materials and food ingredients; processing fees are excluded from equipment value.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Commercial contract-grinding coverage includes natural materials and food ingredients; processing fees are excluded from equipment value.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Plastic granulates and resins establish material coverage, not downstream customers' equipment ownership.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Plastic granulates and resins establish material coverage, not downstream customers' equipment ownership.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operator-side food-processing reference supports establishment attribution rather than automatically assigning equipment to its customers.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operator-side food-processing reference supports establishment attribution rather than automatically assigning equipment to its customers.
9. Manufacturing Capabilities - Asbury Advanced Materials
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Own manufacturing disclosure identifies carbon-material grinding and micronization; supports the material-duty premise only.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own manufacturing disclosure identifies carbon-material grinding and micronization; supports the material-duty premise only.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Custom formulations and dispersions are commercial outputs, but joint whole-formulation milling remains unmeasured.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Custom formulations and dispersions are commercial outputs, but joint whole-formulation milling remains unmeasured.
10. Pyrum Innovations AG - Interim Group Report January 1 to June 30, 2025
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The purchaser's 2025 report records a grinding-plant installation associated with recovered carbon black; no downstream material revenue is counted.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The purchaser's 2025 report records a grinding-plant installation associated with recovered carbon black; no downstream material revenue is counted.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The report establishes an actual recovery-business equipment context, while the exact attributable mill expenditure remains undisclosed.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The report establishes an actual recovery-business equipment context, while the exact attributable mill expenditure remains undisclosed.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The disclosed commercial-site grinding installation supports Industrial Production classification.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The disclosed commercial-site grinding installation supports Industrial Production classification.

11. NRRI Advances Efficient Grinding Technology on the Iron Range
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The institution distinguishes a planned bench-scale purchase from its loaned pilot equipment; not a completed-sale census.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The institution distinguishes a planned bench-scale purchase from its loaned pilot equipment; not a completed-sale census.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The May xx.xx 2024 account identifies a loaned pilot stirred mill; unpaid placement is not counted as equipment-sale revenue.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The May xx.xx 2024 account identifies a loaned pilot stirred mill; unpaid placement is not counted as equipment-sale revenue.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operating research institute is distinct from its mining clients, supporting buyer/material separation.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operating research institute is distinct from its mining clients, supporting buyer/material separation.
12. Planetary Ball Mill PM 100 - RETSCH
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The PM xx.xx is marketed as a benchtop instrument, supporting the small-laboratory pool classification without establishing sales weight.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The PM xx.xx is marketed as a benchtop instrument, supporting the small-laboratory pool classification without establishing sales weight.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The individual-instrument offering supports a narrower equipment-supply alternative; package incidence remains modeled.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The individual-instrument offering supports a narrower equipment-supply alternative; package incidence remains modeled.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: PM xx.xx is a marketed benchtop planetary platform, supporting laboratory-category mapping rather than shipment or price weights. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: PM xx.xx is a marketed benchtop planetary platform, supporting laboratory-category mapping rather than shipment or price weights. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The product page advertises both dry and wet capability. Actual dual-state purchase inclusion remains an explicit model assumption. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The product page advertises both dry and wet capability. Actual dual-state purchase inclusion remains an explicit model assumption. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))

13. Jet Mill - Contract History CW2408170, CanadaBuys
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: A May xx.xx 2026 laboratory jet-mill award totals CAD xx.xx; a dated procurement check, not a 2025 shipment or global average price.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: A May xx.xx 2026 laboratory jet-mill award totals CAD xx.xx; a dated procurement check, not a 2025 shipment or global average price.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The record distinguishes Natural Resources Canada as buying organization from PSPC as contracting organization, supporting establishment attribution.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The record distinguishes Natural Resources Canada as buying organization from PSPC as contracting organization, supporting establishment attribution.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The jet-mill award totals CAD xx.xx and is dated May xx.xx 2026. It is a nearby-period laboratory purchasing comparator, not a 2025 recognized sale, and supplies neither a gas-jet subtype nor a definitive channel role. ([canadabuys.canada.ca](https://canadabuys.canada.ca/en/tender-opportunities/contract-history/cw2408170-xx.xx))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The jet-mill award totals CAD xx.xx and is dated May xx.xx 2026. It is a nearby-period laboratory purchasing comparator, not a 2025 recognized sale, and supplies neither a gas-jet subtype nor a definitive channel role. ([canadabuys.canada.ca](https://canadabuys.canada.ca/en/tender-opportunities/contract-history/cw2408170-xx.xx))
14. MFC Production Equipment - FiberLean
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The manufacturer's commercial offering targets pulp, paper and related establishments; it is not a measured industry sales share.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The manufacturer's commercial offering targets pulp, paper and related establishments; it is not a measured industry sales share.
15. Pulverizing Equipment - Coperion
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The broader portfolio names power-generation applications and separately lists ultrafine equipment; this limits, rather than verifies, the assumed qualifying power-buyer allocation.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The broader portfolio names power-generation applications and separately lists ultrafine equipment; this limits, rather than verifies, the assumed qualifying power-buyer allocation.
16. LG Energy Solution Releases 2025 Financial Results - January 29, 2026
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own 2025 revenue decline and dated 2026 capital-expenditure reduction target constrain battery-related equipment-adoption assumptions.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Existing-asset reuse strategy qualifies a direct downstream-demand-to-new-carbon-material-mill investment inference.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Buyer investment restraint constrains the relative application multiplier; upstream chemical attribution remains separately assumed.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own battery-manufacturer financial and investment plans provide a counter-test, not an ultrafine equipment purchasing total.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The January 2026 emphasis on reduced new investment qualifies automatic growth in broader equipment-package adoption.

17. UNSD Classification Detail - ISIC Rev.4, Class 3830: Materials Recovery
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The official classification distinguishes secondary-material recovery from manufacture of new final products; it supplies no equipment sales weight.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The official classification distinguishes secondary-material recovery from manufacture of new final products; it supplies no equipment sales weight.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Recovered-input use alone does not classify the equipment operator as a recovery establishment rather than a product manufacturer.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Recovered-input use alone does not classify the equipment operator as a recovery establishment rather than a product manufacturer.
18. Ultrafin Mill: Super Masscolloider, Masuko MKCA6-5J CE - University of Ljubljana
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The university inventories a laboratory ultrafine mill within wood science; the institutional operator is not a wood-products manufacturer.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The university inventories a laboratory ultrafine mill within wood science; the institutional operator is not a wood-products manufacturer.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The institutional inventory expressly identifies laboratory equipment, supporting deployment classification without establishing a purchase-year value.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The institutional inventory expressly identifies laboratory equipment, supporting deployment classification without establishing a purchase-year value.
19. Contract Manufacturing of Pharmaceuticals - YUKI GOSEI KOGYO CO., LTD.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operator distinguishes production jet mills from smaller equipment, supporting industrial deployment at a pharmaceutical contract manufacturer.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operator distinguishes production jet mills from smaller equipment, supporting industrial deployment at a pharmaceutical contract manufacturer.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The actual pharmaceutical manufacturing operator is distinct from customers outsourcing production; processing-service receipts remain excluded.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The actual pharmaceutical manufacturing operator is distinct from customers outsourcing production; processing-service receipts remain excluded.

20. Record year for Metso stirred mills as mining industry opts for energy-efficient comminution technology

- Evidence informing base-year allocation inputs; displayed values and growth are calculated: Metso reports more than twenty Vertimill sales in 2025 and approximately xx.xx cumulative stirred-mill deliveries. Broader application coverage prevents treating these as ultrafine-only annual shipments; they constrain the modeled stirred/mining allocation and forecast premise. ([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))
- Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Metso reports more than twenty Vertimill sales in 2025 and approximately xx.xx cumulative stirred-mill deliveries. Broader application coverage prevents treating these as ultrafine-only annual shipments; they constrain the modeled stirred/mining allocation and forecast premise. ([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))
- Evidence informing base-year allocation inputs; displayed values and growth are calculated: The disclosed stirred-equipment activity supports material Media Mills participation, not the final modeled parent share. ([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))
- Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The disclosed stirred-equipment activity supports material Media Mills participation, not the final modeled parent share. ([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))

21. Bühler strengthens its market position

- Evidence informing base-year allocation inputs; displayed values and growth are calculated: Bühler reports xx.xx% Grinding & Dispersing order growth in 2025 against a xx.xx% decline in broader Advanced Materials orders. This is a mixed commercial leading indicator, not observed market-share growth. ([buhlergroup.com](https://www.buhlergroup.com/global/en/media/media-releases/b%C3%BChler-strengthens-its-marketposition.html))
- Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Bühler reports xx.xx% Grinding & Dispersing order growth in 2025 against a xx.xx% decline in broader Advanced Materials orders. This is a mixed commercial leading indicator, not observed market-share growth. ([buhlergroup.com](https://www.buhlergroup.com/global/en/media/media-releases/b%C3%BChler-strengthens-its-marketposition.html))
- Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The disclosed battery-related and other application orders constrain differentiated Media Mills forecast assumptions without converting orders directly to annual equipment revenue. ([buhlergroup.com](https://www.buhlergroup.com/global/en/media/media-releases/b%C3%BChler-strengthens-its-marketposition.html))

22. Management Greetings | HOSOKAWAMICRON CORPORATION

- Evidence informing base-year allocation inputs; displayed values and growth are calculated: Hosokawa reports FY2025 net sales of JPY xx.xx, down xx.xx%, and orders down xx.xx%. The diversified-company result challenges uniform purchasing acceleration and constrains, rather than directly measures, technology-mix assumptions. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/ir/management_policy/management_greetings.html))
- Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Hosokawa reports FY2025 net sales of JPY xx.xx, down xx.xx%, and orders down xx.xx%. The diversified-company result challenges uniform purchasing acceleration and constrains, rather than directly measures, technology-mix assumptions. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/ir/management_policy/management_greetings.html))
- Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The same broader financial contraction is counterevidence to assuming uniform Media Mills growth across suppliers; no corporate revenue is assigned directly to the category. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/ir/management_policy/management_greetings.html))

23. Details of micromeritics | HOSOKAWAMICRON CORPORATION

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Hosokawa identifies its AS spiral offering, supporting subtype mapping rather than a sales weight. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Hosokawa identifies its AS spiral offering, supporting subtype mapping rather than a sales weight. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The AFG/TFG counterjet offerings support the retained Opposed-Jet commercial mapping. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The AFG/TFG counterjet offerings support the retained Opposed-Jet commercial mapping. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The manufacturer identifies Innovomizer as a mechanical ultrafine offering; ordinary impact equipment is not automatically included. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The manufacturer identifies Innovomizer as a mechanical ultrafine offering; ordinary impact equipment is not automatically included. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

24. Grinding Equipment Manufacturer Supplier Factory, Grinding System | Longly

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: LONGLY discloses current annual capacity above 2,000 equipment units and commercial wet-grinding offerings. Capacity is bridged through explicitly assumed timing, utilization and eligible-product factors; it is not reported 2025 stirred-mill shipments. ([longlymill.com](https://www.longlymill.com/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: LONGLY discloses current annual capacity above 2,000 equipment units and commercial wet-grinding offerings. Capacity is bridged through explicitly assumed timing, utilization and eligible-product factors; it is not reported 2025 stirred-mill shipments. ([longlymill.com](https://www.longlymill.com/))

25. Ultra-Fine Grinding - Hosokawa Micron Malaysia

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The inspected ultrafine portfolio identifies AWM-F table-roller equipment, supporting the qualifying Roller Mills boundary, not its assumed counts or prices. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The inspected ultrafine portfolio identifies AWM-F table-roller equipment, supporting the qualifying Roller Mills boundary, not its assumed counts or prices. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Super Orion is a marketed rotary ball-mill constituent of the combined rotary/planetary category. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Super Orion is a marketed rotary ball-mill constituent of the combined rotary/planetary category. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: MJT is explicitly listed as a target-type offering, supporting precedence of the named platform over overlapping generic jet terminology. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: MJT is explicitly listed as a target-type offering, supporting precedence of the named platform over overlapping generic jet terminology. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

26. Loop Jet Mill - Consistency. Compliance. Engineered.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The current named Loop Jet Mill listing establishes an offered commercial platform. It supports forecast category continuity, but does not disclose subtype revenue or prove 2025 sales. ([jetmillmfg.com](https://www.jetmillmfg.com/loop-jet-mill/))
27. SWECO Vibratory Grinding and Particle Size Reduction Equipment
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: SWECO markets Vibro-Energy grinding equipment with separate wet and wet/dry offerings. This supports commercial category and configuration mapping, not the modeled frequency of purchases. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: SWECO markets Vibro-Energy grinding equipment with separate wet and wet/dry offerings. This supports commercial category and configuration mapping, not the modeled frequency of purchases. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Named wet/dry models establish dual-state availability; they do not establish the exact supplied configuration or a market-wide value share. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Named wet/dry models establish dual-state availability; they do not establish the exact supplied configuration or a market-wide value share. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))
28. Fine-cutting mill with rotating classifying feature - the sensational new development!
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The September xx.xx 2014 own-product announcement establishes a pre-base-year SecoMy S cutting offering described for ultrafine commercial applications. It is category evidence, not annual equipment revenue. ([grinding.netzsch.com](https://grinding.netzsch.com/en/news/2014/fine-cutting-mill-with-rotating-classifying-feature-the-sensational-new-development))
29. NETZSCH SecoMy S - Precision Cutting Redefined!
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The August 2026 SecoMy S brochure confirms continuing commercial ultrafine-cutting positioning and system-supply availability. It supports category persistence, not the assumed forecast spending share. ([grinding.netzsch.com](https://grinding.netzsch.com/_Resources/Persistent/xx.xx/e/xx.xx/b/8e4b5adcfc16fcc2d83974f8080d614cce1a2c01/NETZSCH_Fine_Cutting_Mill_SecoMy_S_e.pdf))
30. Wet Milling and Dispersing Device - Star Burst - Sugino Corp.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: SUGINO's Star Burst portfolio identifies wet-jet equipment across research and production purchasing contexts. Only milling-attributable supply is included; adjacent droplet-only or dispersion activity is not automatically counted. ([suginocorp.com](https://www.suginocorp.com/star-burst/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: SUGINO's Star Burst portfolio identifies wet-jet equipment across research and production purchasing contexts. Only milling-attributable supply is included; adjacent droplet-only or dispersion activity is not automatically counted. ([suginocorp.com](https://www.suginocorp.com/star-burst/))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The wet-jet offering supports wet-state classification within the joint value model, not the total Wet Grinding share. ([suginocorp.com](https://www.suginocorp.com/star-burst/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The wet-jet offering supports wet-state classification within the joint value model, not the total Wet Grinding share. ([suginocorp.com](https://www.suginocorp.com/star-burst/))

31. IBU-tec | Mills - Milling Technology for Dry and Wet Grinding
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operator table separately lists two dry opposed-jet units. This is an installed-inventory observation, not a shipment or revenue ratio. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operator table separately lists two dry opposed-jet units. This is an installed-inventory observation, not a shipment or revenue ratio. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Three wet agitator-bead units are separately inventoried, supporting state-specific commercial classification without using their count as a market weight. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Three wet agitator-bead units are separately inventoried, supporting state-specific commercial classification without using their count as a market weight. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
32. Comminution - NTNU
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: NTNU separately records wet/dry capability for stirred and planetary equipment; the inventory is not a representative value-share dataset. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: NTNU separately records wet/dry capability for stirred and planetary equipment; the inventory is not a representative value-share dataset. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The planetary equipment is recorded as batch, supporting a laboratory batch context without assuming all laboratories are batch-only. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The planetary equipment is recorded as batch, supporting a laboratory batch context without assuming all laboratories are batch-only. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The laboratory jet rig is recorded as continuous, independently challenging equivalence between continuous mode and industrial scale. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The laboratory jet rig is recorded as continuous, independently challenging equivalence between continuous mode and industrial scale. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
33. Dry Batch Or Continuous Laboratory Mills - Union Process
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Union Process identifies SD-xx.xx as one laboratory offering for both batch and continuous service. Configuration-specific purchase inclusion and revenue are undisclosed. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Union Process identifies SD-xx.xx as one laboratory offering for both batch and continuous service. Configuration-specific purchase inclusion and revenue are undisclosed. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The same named offering advertises wet/dry capability, supporting a dual-state category premise rather than an observed adoption percentage. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The same named offering advertises wet/dry capability, supporting a dual-state category premise rather than an observed adoption percentage. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))

34. Retsch Contact & Services - Contact Partners Worldwide

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: RETSCH describes a network including daughter companies. Manufacturer affiliation, rather than contact location, informs direct-route attribution. ([retsch.com](https://www.retsch.com/contact-services/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: RETSCH describes a network including daughter companies. Manufacturer affiliation, rather than contact location, informs direct-route attribution. ([retsch.com](https://www.retsch.com/contact-services/))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The network also includes trained distributors, establishing a resale-access premise but not distributor ownership roles or annual sales weights. ([retsch.com](https://www.retsch.com/contact-services/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The network also includes trained distributors, establishing a resale-access premise but not distributor ownership roles or annual sales weights. ([retsch.com](https://www.retsch.com/contact-services/))

35. HOSOKAWA ALPINE Aktiengesellschaft - Conditions of Sale 371_00 EN

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Hosokawa requires company confirmation of representatives' transactions and makes contractual scope authoritative. The terms support agency-role attribution, not the assumed agent percentage. ([hosokawa-alpine.com](https://www.hosokawa-alpine.com/fileadmin/allgemein/Legal/AGB/AGB_Verkaufsbedingungen_en_371_00.pdf))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Hosokawa requires company confirmation of representatives' transactions and makes contractual scope authoritative. The terms support agency-role attribution, not the assumed agent percentage. ([hosokawa-alpine.com](https://www.hosokawa-alpine.com/fileadmin/allgemein/Legal/AGB/AGB_Verkaufsbedingungen_en_371_00.pdf))

36. UNSD - ISIC Rev.5, Class 4610: Wholesale on a Fee or Contract Basis

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: ISIC Rev.xx.xx class xx.xx defines fee/commission intermediation without ownership, supporting a non-title-taking agency numerator distinct from goods supplied on own account. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: ISIC Rev.xx.xx class xx.xx defines fee/commission intermediation without ownership, supporting a non-title-taking agency numerator distinct from goods supplied on own account. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Own-account wholesale is excluded from the agency class, supporting the reseller/agent partition without supplying ultrafine-mill channel shares. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own-account wholesale is excluded from the agency class, supporting the reseller/agent partition without supplying ultrafine-mill channel shares. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))

37. ITDI-PB-2024-057 - Supply, Delivery, Installation and Commissioning of Ultra-fine Friction Grinder

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The 2024 friction-grinder procurement had a PHP xx.xx budget and failed with no bidder. It establishes a configured-package spending ceiling and commercial category, not a sale or a shipment count. ([notices.philgeps.gov.ph](https://notices.philgeps.gov.ph/GEPSNONPILOT/Tender/PrintableBidNoticeAbstractUI.aspx?refid=xx.xx))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The 2024 friction-grinder procurement had a PHP xx.xx budget and failed with no bidder. It establishes a configured-package spending ceiling and commercial category, not a sale or a shipment count. ([notices.philgeps.gov.ph](https://notices.philgeps.gov.ph/GEPSNONPILOT/Tender/PrintableBidNoticeAbstractUI.aspx?refid=xx.xx))

38. Bangko Sentral ng Pilipinas - Balance of Payments Report, Q4 2024

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The central bank reports a 2024 average of PHP xx.xx per USD. Dividing the failed PHP xx.xx procurement budget by this rate gives an approximately USD xx.xx comparison ceiling, not realized equipment revenue. ([bsp.gov.ph](https://www.bsp.gov.ph/Media_And_Research/Balance%20of%20Payments%20Report/2024/BOP_4qtr2024.pdf))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The central bank reports a 2024 average of PHP xx.xx per USD. Dividing the failed PHP xx.xx procurement budget by this rate gives an approximately USD xx.xx comparison ceiling, not realized equipment revenue. ([bsp.gov.ph](https://www.bsp.gov.ph/Media_And_Research/Balance%20of%20Payments%20Report/2024/BOP_4qtr2024.pdf))

16.6. GCC

Table 304. GCC Ultra Fine Grinding Mill Market, by Country growth contribution, 2025-2032

Category	2025 value (USD Million)	2032 value (USD Million)	Added value (USD Million)	2025 share (%)	2032 share (%)	Change (pp)	Growth share (%)	CAGR (%)
Bahrain	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Kuwait	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Oman	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Qatar	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Saudi Arabia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United Arab Emirates	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Scope total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 305. GCC Ultra Fine Grinding Mill Market Size, by Group, 2017-2040 (USD Million)

Group	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Bahrain	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Kuwait	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Oman	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Qatar	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Saudi Arabia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United Arab Emirates	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx

Table 306. GCC Ultra Fine Grinding Mill Market Size, by Supply Scope, 2017-2040 (USD Million)

Supply Scope	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Integrated Milling Packages	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Standalone Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 307. GCC Ultra Fine Grinding Mill Market Size, by Mill Technology, 2017-2040 (USD Million)

Mill Technology	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Cutting Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Disc and Colloid Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Gas-Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mechanical Impact Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Media Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Roller Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wet-Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 308. GCC Ultra Fine Grinding Mill Market Size, by Media Mills, 2017-2040 (USD Million)

Media Mills	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Rotary and Planetary Ball Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Stirred Media Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Vibratory Media Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 309. GCC Ultra Fine Grinding Mill Market Size, by Gas-Jet Mills, 2017-2040 (USD Million)

Gas-Jet Mills	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Loop Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Opposed-Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Spiral Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Target Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 310. GCC Ultra Fine Grinding Mill Market Size, by Processed Material, 2017-2040 (USD Million)

Processed Material	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Biomass and Natural Ingredients	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Carbonaceous Materials	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Formulations and Composites	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Industrial Minerals	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Inorganic Chemicals, Ceramics, and Glass	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Metal Ores and Concentrates	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Metals and Alloys	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Organic Chemicals	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Polymers and Elastomers	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 311. GCC Ultra Fine Grinding Mill Market Size, by Buyer Industry, 2017-2040 (USD Million)

Buyer Industry	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Chemical and Fuel Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Electrical and Electronic Product Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Food, Beverage, and Feed Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Glass, Ceramics, and Construction Materials Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Materials Recovery and Recycling	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Metals and Fabricated Metal Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mining and Mineral Processing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Pharmaceutical Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Power and Heat Generation	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Research, Education, and Testing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Rubber and Plastics Product Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wood, Pulp, and Paper Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 312. GCC Ultra Fine Grinding Mill Market Size, by Deployment Scale, 2017-2040 (USD Million)

Deployment Scale	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Industrial Production	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Laboratory	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Pilot	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 313. GCC Ultra Fine Grinding Mill Market Size, by Sales Channel, 2017-2040 (USD Million)

Sales Channel	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Agent-Mediated Sales	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Independent Reseller Sales	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Manufacturer-Direct Sales	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 314. GCC Ultra Fine Grinding Mill Market Size, by Processing State, 2017-2040 (USD Million)

Processing State	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Dry Grinding	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wet and Dry Grinding	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wet Grinding	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 315. GCC Ultra Fine Grinding Mill Market Size, by Operating Mode, 2017-2040 (USD Million)

Operating Mode	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Batch	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Batch and Continuous	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Continuous	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Sources & Evidence

1. Mach for mixing/kneading/crushing/grinding etc imports by country | 2023
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: 2023 HS xx.xx imports of USD xx.xx anchor the UAE's lagged purchasing input before modeled timing and re-export adjustments.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: 2023 HS xx.xx imports of USD xx.xx anchor the UAE's lagged purchasing input before modeled timing and re-export adjustments.
2. Crushing/grinding machines for earth/ stone/ore imports by country | 2023
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: UAE 2023 mineral machinery imports were USD xx.xx, used only through an explicit mixed-period and re-export bridge.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: UAE 2023 mineral machinery imports were USD xx.xx, used only through an explicit mixed-period and re-export bridge.

3. Hosokawa Micron - FY2025 Financial Results Presentation, November 25, 2025 (Japanese)
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; material attribution modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; material attribution modeled.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; establishment attribution modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; establishment attribution modeled.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; buyer attribution assumed.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; buyer attribution assumed.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; qualifying power attribution unverified.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; qualifying power attribution unverified.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; institutional attribution assumed.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; institutional attribution assumed.

4. Metso Receives Order for Grinding Mills to a Copper Project in Africa
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Approximately EUR xx.xx 2024 HIGmill order includes auxiliaries and services; a package-scale anchor, not recognized annual revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Approximately EUR xx.xx 2024 HIGmill order includes auxiliaries and services; a package-scale anchor, not recognized annual revenue.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The copper-project award establishes an ore/concentrate commercial purchasing context.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The copper-project award establishes an ore/concentrate commercial purchasing context.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The award concerns an African mining project; it does not disclose the global mining-buyer share.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The award concerns an African mining project; it does not disclose the global mining-buyer share.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Large industrial equipment procurement supports the production-scale category premise.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Large industrial equipment procurement supports the production-scale category premise.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The August xx.xx 2024 announcement records an approximately EUR xx.xx HIGmill order including auxiliaries and services. It anchors package-level commercial materiality, not a mill unit price or 2025 recognized revenue. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The August xx.xx 2024 announcement records an approximately EUR xx.xx HIGmill order including auxiliaries and services. It anchors package-level commercial materiality, not a mill unit price or 2025 recognized revenue. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The stirred-package order supports the Media Mills value-weight model and continuing commercial-demand premise, with order-to-revenue timing unresolved. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The stirred-package order supports the Media Mills value-weight model and continuing commercial-demand premise, with order-to-revenue timing unresolved. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
5. HIGmill Plant - Metso
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Standalone marketing terminology does not establish the study's Standalone Mills equipment scope.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Standalone marketing terminology does not establish the study's Standalone Mills equipment scope.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: HIGmill Plant includes pre-engineered auxiliary modules, supporting classification as an equipment package.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: HIGmill Plant includes pre-engineered auxiliary modules, supporting classification as an equipment package.

6. IsaMill - About, Technology Partnership and Engineering
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Delivery alternatives permit mill-only supply or additional auxiliary equipment; actual equipment scope determines attribution.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Delivery alternatives permit mill-only supply or additional auxiliary equipment; actual equipment scope determines attribution.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Modular auxiliary-inclusive and turnkey alternatives support differentiated package scope, without proving a global adoption percentage.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Modular auxiliary-inclusive and turnkey alternatives support differentiated package scope, without proving a global adoption percentage.
7. Commission Processing - NIPPON COKE & ENGINEERING CO., LTD.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Own commercial processing portfolio identifies glass, ceramics and inorganic materials; establishes material mapping, not equipment revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own commercial processing portfolio identifies glass, ceramics and inorganic materials; establishes material mapping, not equipment revenue.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Organic pigments are named commercial processing materials.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Organic pigments are named commercial processing materials.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Metal powders are named commercial processing materials.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Metal powders are named commercial processing materials.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Carbon is identified in the operator's commercial grinding portfolio.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Carbon is identified in the operator's commercial grinding portfolio.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Thermosetting resin supports a polymer-material category premise.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Thermosetting resin supports a polymer-material category premise.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Ink-related grinding establishes a commercial reference but does not resolve whole-formulation versus constituent duty.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Ink-related grinding establishes a commercial reference but does not resolve whole-formulation versus constituent duty.

8. Micronization / Grinding - A. Ebbecke Verfahrenstechnik AG
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Commercial contract-grinding coverage includes natural materials and food ingredients; processing fees are excluded from equipment value.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Commercial contract-grinding coverage includes natural materials and food ingredients; processing fees are excluded from equipment value.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Plastic granulates and resins establish material coverage, not downstream customers' equipment ownership.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Plastic granulates and resins establish material coverage, not downstream customers' equipment ownership.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operator-side food-processing reference supports establishment attribution rather than automatically assigning equipment to its customers.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operator-side food-processing reference supports establishment attribution rather than automatically assigning equipment to its customers.
9. Manufacturing Capabilities - Asbury Advanced Materials
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Own manufacturing disclosure identifies carbon-material grinding and micronization; supports the material-duty premise only.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own manufacturing disclosure identifies carbon-material grinding and micronization; supports the material-duty premise only.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Custom formulations and dispersions are commercial outputs, but joint whole-formulation milling remains unmeasured.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Custom formulations and dispersions are commercial outputs, but joint whole-formulation milling remains unmeasured.
10. Pyrum Innovations AG - Interim Group Report January 1 to June 30, 2025
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The purchaser's 2025 report records a grinding-plant installation associated with recovered carbon black; no downstream material revenue is counted.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The purchaser's 2025 report records a grinding-plant installation associated with recovered carbon black; no downstream material revenue is counted.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The report establishes an actual recovery-business equipment context, while the exact attributable mill expenditure remains undisclosed.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The report establishes an actual recovery-business equipment context, while the exact attributable mill expenditure remains undisclosed.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The disclosed commercial-site grinding installation supports Industrial Production classification.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The disclosed commercial-site grinding installation supports Industrial Production classification.

11. NRRI Advances Efficient Grinding Technology on the Iron Range
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The institution distinguishes a planned bench-scale purchase from its loaned pilot equipment; not a completed-sale census.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The institution distinguishes a planned bench-scale purchase from its loaned pilot equipment; not a completed-sale census.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The May xx.xx 2024 account identifies a loaned pilot stirred mill; unpaid placement is not counted as equipment-sale revenue.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The May xx.xx 2024 account identifies a loaned pilot stirred mill; unpaid placement is not counted as equipment-sale revenue.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operating research institute is distinct from its mining clients, supporting buyer/material separation.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operating research institute is distinct from its mining clients, supporting buyer/material separation.
12. Planetary Ball Mill PM 100 - RETSCH
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The PM xx.xx is marketed as a benchtop instrument, supporting the small-laboratory pool classification without establishing sales weight.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The PM xx.xx is marketed as a benchtop instrument, supporting the small-laboratory pool classification without establishing sales weight.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The individual-instrument offering supports a narrower equipment-supply alternative; package incidence remains modeled.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The individual-instrument offering supports a narrower equipment-supply alternative; package incidence remains modeled.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: PM xx.xx is a marketed benchtop planetary platform, supporting laboratory-category mapping rather than shipment or price weights. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: PM xx.xx is a marketed benchtop planetary platform, supporting laboratory-category mapping rather than shipment or price weights. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The product page advertises both dry and wet capability. Actual dual-state purchase inclusion remains an explicit model assumption. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The product page advertises both dry and wet capability. Actual dual-state purchase inclusion remains an explicit model assumption. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))

13. Jet Mill - Contract History CW2408170, CanadaBuys
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: A May xx.xx 2026 laboratory jet-mill award totals CAD xx.xx; a dated procurement check, not a 2025 shipment or global average price.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: A May xx.xx 2026 laboratory jet-mill award totals CAD xx.xx; a dated procurement check, not a 2025 shipment or global average price.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The record distinguishes Natural Resources Canada as buying organization from PSPC as contracting organization, supporting establishment attribution.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The record distinguishes Natural Resources Canada as buying organization from PSPC as contracting organization, supporting establishment attribution.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The jet-mill award totals CAD xx.xx and is dated May xx.xx 2026. It is a nearby-period laboratory purchasing comparator, not a 2025 recognized sale, and supplies neither a gas-jet subtype nor a definitive channel role. ([canadabuys.canada.ca](https://canadabuys.canada.ca/en/tender-opportunities/contract-history/cw2408170-xx.xx))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The jet-mill award totals CAD xx.xx and is dated May xx.xx 2026. It is a nearby-period laboratory purchasing comparator, not a 2025 recognized sale, and supplies neither a gas-jet subtype nor a definitive channel role. ([canadabuys.canada.ca](https://canadabuys.canada.ca/en/tender-opportunities/contract-history/cw2408170-xx.xx))
14. MFC Production Equipment - FiberLean
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The manufacturer's commercial offering targets pulp, paper and related establishments; it is not a measured industry sales share.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The manufacturer's commercial offering targets pulp, paper and related establishments; it is not a measured industry sales share.
15. Pulverizing Equipment - Coperion
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The broader portfolio names power-generation applications and separately lists ultrafine equipment; this limits, rather than verifies, the assumed qualifying power-buyer allocation.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The broader portfolio names power-generation applications and separately lists ultrafine equipment; this limits, rather than verifies, the assumed qualifying power-buyer allocation.
16. LG Energy Solution Releases 2025 Financial Results - January 29, 2026
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own 2025 revenue decline and dated 2026 capital-expenditure reduction target constrain battery-related equipment-adoption assumptions.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Existing-asset reuse strategy qualifies a direct downstream-demand-to-new-carbon-material-mill investment inference.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Buyer investment restraint constrains the relative application multiplier; upstream chemical attribution remains separately assumed.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own battery-manufacturer financial and investment plans provide a counter-test, not an ultrafine equipment purchasing total.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The January 2026 emphasis on reduced new investment qualifies automatic growth in broader equipment-package adoption.

17. UNSD Classification Detail - ISIC Rev.4, Class 3830: Materials Recovery
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The official classification distinguishes secondary-material recovery from manufacture of new final products; it supplies no equipment sales weight.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The official classification distinguishes secondary-material recovery from manufacture of new final products; it supplies no equipment sales weight.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Recovered-input use alone does not classify the equipment operator as a recovery establishment rather than a product manufacturer.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Recovered-input use alone does not classify the equipment operator as a recovery establishment rather than a product manufacturer.
18. Ultrafin Mill: Super Masscolloider, Masuko MKCA6-5J CE - University of Ljubljana
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The university inventories a laboratory ultrafine mill within wood science; the institutional operator is not a wood-products manufacturer.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The university inventories a laboratory ultrafine mill within wood science; the institutional operator is not a wood-products manufacturer.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The institutional inventory expressly identifies laboratory equipment, supporting deployment classification without establishing a purchase-year value.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The institutional inventory expressly identifies laboratory equipment, supporting deployment classification without establishing a purchase-year value.
19. Contract Manufacturing of Pharmaceuticals - YUKI GOSEI KOGYO CO., LTD.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operator distinguishes production jet mills from smaller equipment, supporting industrial deployment at a pharmaceutical contract manufacturer.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operator distinguishes production jet mills from smaller equipment, supporting industrial deployment at a pharmaceutical contract manufacturer.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The actual pharmaceutical manufacturing operator is distinct from customers outsourcing production; processing-service receipts remain excluded.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The actual pharmaceutical manufacturing operator is distinct from customers outsourcing production; processing-service receipts remain excluded.

20. Record year for Metso stirred mills as mining industry opts for energy-efficient comminution technology

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Metso reports more than twenty Vertimill sales in 2025 and approximately xx.xx cumulative stirred-mill deliveries. Broader application coverage prevents treating these as ultrafine-only annual shipments; they constrain the modeled stirred/mining allocation and forecast premise.
([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Metso reports more than twenty Vertimill sales in 2025 and approximately xx.xx cumulative stirred-mill deliveries. Broader application coverage prevents treating these as ultrafine-only annual shipments; they constrain the modeled stirred/mining allocation and forecast premise.
([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The disclosed stirred-equipment activity supports material Media Mills participation, not the final modeled parent share.
([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The disclosed stirred-equipment activity supports material Media Mills participation, not the final modeled parent share.
([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))

21. Bühler strengthens its market position

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Bühler reports xx.xx% Grinding & Dispersing order growth in 2025 against a xx.xx% decline in broader Advanced Materials orders. This is a mixed commercial leading indicator, not observed market-share growth.
([buhlergroup.com](https://www.buhlergroup.com/global/en/media/media-releases/b%C3%BChler-strengthens-its-marketposition.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Bühler reports xx.xx% Grinding & Dispersing order growth in 2025 against a xx.xx% decline in broader Advanced Materials orders. This is a mixed commercial leading indicator, not observed market-share growth.
([buhlergroup.com](https://www.buhlergroup.com/global/en/media/media-releases/b%C3%BChler-strengthens-its-marketposition.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The disclosed battery-related and other application orders constrain differentiated Media Mills forecast assumptions without converting orders directly to annual equipment revenue.
([buhlergroup.com](https://www.buhlergroup.com/global/en/media/media-releases/b%C3%BChler-strengthens-its-marketposition.html))

22. Management Greetings | HOSOKAWAMICRON CORPORATION

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Hosokawa reports FY2025 net sales of JPY xx.xx, down xx.xx%, and orders down xx.xx%. The diversified-company result challenges uniform purchasing acceleration and constrains, rather than directly measures, technology-mix assumptions.
([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/ir/management_policy/management_greetings.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Hosokawa reports FY2025 net sales of JPY xx.xx, down xx.xx%, and orders down xx.xx%. The diversified-company result challenges uniform purchasing acceleration and constrains, rather than directly measures, technology-mix assumptions.
([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/ir/management_policy/management_greetings.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The same broader financial contraction is counterevidence to assuming uniform Media Mills growth across suppliers; no corporate revenue is assigned directly to the category.
([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/ir/management_policy/management_greetings.html))

23. Details of micromeritics | HOSOKAWAMICRON CORPORATION

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Hosokawa identifies its AS spiral offering, supporting subtype mapping rather than a sales weight. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Hosokawa identifies its AS spiral offering, supporting subtype mapping rather than a sales weight. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The AFG/TFG counterjet offerings support the retained Opposed-Jet commercial mapping. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The AFG/TFG counterjet offerings support the retained Opposed-Jet commercial mapping. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The manufacturer identifies Innovomizer as a mechanical ultrafine offering; ordinary impact equipment is not automatically included. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The manufacturer identifies Innovomizer as a mechanical ultrafine offering; ordinary impact equipment is not automatically included. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

24. Grinding Equipment Manufacturer Supplier Factory, Grinding System | Longly

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: LONGLY discloses current annual capacity above 2,000 equipment units and commercial wet-grinding offerings. Capacity is bridged through explicitly assumed timing, utilization and eligible-product factors; it is not reported 2025 stirred-mill shipments. ([longlymill.com](https://www.longlymill.com/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: LONGLY discloses current annual capacity above 2,000 equipment units and commercial wet-grinding offerings. Capacity is bridged through explicitly assumed timing, utilization and eligible-product factors; it is not reported 2025 stirred-mill shipments. ([longlymill.com](https://www.longlymill.com/))

25. Ultra-Fine Grinding - Hosokawa Micron Malaysia

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The inspected ultrafine portfolio identifies AWM-F table-roller equipment, supporting the qualifying Roller Mills boundary, not its assumed counts or prices. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The inspected ultrafine portfolio identifies AWM-F table-roller equipment, supporting the qualifying Roller Mills boundary, not its assumed counts or prices. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Super Orion is a marketed rotary ball-mill constituent of the combined rotary/planetary category. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Super Orion is a marketed rotary ball-mill constituent of the combined rotary/planetary category. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: MJT is explicitly listed as a target-type offering, supporting precedence of the named platform over overlapping generic jet terminology. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: MJT is explicitly listed as a target-type offering, supporting precedence of the named platform over overlapping generic jet terminology. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

26. Loop Jet Mill - Consistency. Compliance. Engineered.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The current named Loop Jet Mill listing establishes an offered commercial platform. It supports forecast category continuity, but does not disclose subtype revenue or prove 2025 sales. ([jetmillmfg.com](https://www.jetmillmfg.com/loop-jet-mill/))
27. SWECO Vibratory Grinding and Particle Size Reduction Equipment
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: SWECO markets Vibro-Energy grinding equipment with separate wet and wet/dry offerings. This supports commercial category and configuration mapping, not the modeled frequency of purchases. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: SWECO markets Vibro-Energy grinding equipment with separate wet and wet/dry offerings. This supports commercial category and configuration mapping, not the modeled frequency of purchases. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Named wet/dry models establish dual-state availability; they do not establish the exact supplied configuration or a market-wide value share. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Named wet/dry models establish dual-state availability; they do not establish the exact supplied configuration or a market-wide value share. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))
28. Fine-cutting mill with rotating classifying feature - the sensational new development!
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The September xx.xx 2014 own-product announcement establishes a pre-base-year SecoMy S cutting offering described for ultrafine commercial applications. It is category evidence, not annual equipment revenue. ([grinding.netzsch.com](https://grinding.netzsch.com/en/news/2014/fine-cutting-mill-with-rotating-classifying-feature-the-sensational-new-development))
29. NETZSCH SecoMy S - Precision Cutting Redefined!
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The August 2026 SecoMy S brochure confirms continuing commercial ultrafine-cutting positioning and system-supply availability. It supports category persistence, not the assumed forecast spending share. ([grinding.netzsch.com](https://grinding.netzsch.com/_Resources/Persistent/xx.xx/e/xx.xx/b/8e4b5adcfc16fcc2d83974f8080d614cce1a2c01/NETZSCH_Fine_Cutting_Mill_SecoMy_S_e.pdf))
30. Wet Milling and Dispersing Device - Star Burst - Sugino Corp.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: SUGINO's Star Burst portfolio identifies wet-jet equipment across research and production purchasing contexts. Only milling-attributable supply is included; adjacent droplet-only or dispersion activity is not automatically counted. ([suginocorp.com](https://www.suginocorp.com/star-burst/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: SUGINO's Star Burst portfolio identifies wet-jet equipment across research and production purchasing contexts. Only milling-attributable supply is included; adjacent droplet-only or dispersion activity is not automatically counted. ([suginocorp.com](https://www.suginocorp.com/star-burst/))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The wet-jet offering supports wet-state classification within the joint value model, not the total Wet Grinding share. ([suginocorp.com](https://www.suginocorp.com/star-burst/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The wet-jet offering supports wet-state classification within the joint value model, not the total Wet Grinding share. ([suginocorp.com](https://www.suginocorp.com/star-burst/))

31. IBU-tec | Mills - Milling Technology for Dry and Wet Grinding
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operator table separately lists two dry opposed-jet units. This is an installed-inventory observation, not a shipment or revenue ratio. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operator table separately lists two dry opposed-jet units. This is an installed-inventory observation, not a shipment or revenue ratio. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Three wet agitator-bead units are separately inventoried, supporting state-specific commercial classification without using their count as a market weight. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Three wet agitator-bead units are separately inventoried, supporting state-specific commercial classification without using their count as a market weight. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
32. Comminution - NTNU
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: NTNU separately records wet/dry capability for stirred and planetary equipment; the inventory is not a representative value-share dataset. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: NTNU separately records wet/dry capability for stirred and planetary equipment; the inventory is not a representative value-share dataset. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The planetary equipment is recorded as batch, supporting a laboratory batch context without assuming all laboratories are batch-only. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The planetary equipment is recorded as batch, supporting a laboratory batch context without assuming all laboratories are batch-only. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The laboratory jet rig is recorded as continuous, independently challenging equivalence between continuous mode and industrial scale. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The laboratory jet rig is recorded as continuous, independently challenging equivalence between continuous mode and industrial scale. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
33. Dry Batch Or Continuous Laboratory Mills - Union Process
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Union Process identifies SD-xx.xx as one laboratory offering for both batch and continuous service. Configuration-specific purchase inclusion and revenue are undisclosed. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Union Process identifies SD-xx.xx as one laboratory offering for both batch and continuous service. Configuration-specific purchase inclusion and revenue are undisclosed. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The same named offering advertises wet/dry capability, supporting a dual-state category premise rather than an observed adoption percentage. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The same named offering advertises wet/dry capability, supporting a dual-state category premise rather than an observed adoption percentage. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))

34. Retsch Contact & Services - Contact Partners Worldwide

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: RETSCH describes a network including daughter companies. Manufacturer affiliation, rather than contact location, informs direct-route attribution. ([retsch.com](https://www.retsch.com/contact-services/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: RETSCH describes a network including daughter companies. Manufacturer affiliation, rather than contact location, informs direct-route attribution. ([retsch.com](https://www.retsch.com/contact-services/))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The network also includes trained distributors, establishing a resale-access premise but not distributor ownership roles or annual sales weights. ([retsch.com](https://www.retsch.com/contact-services/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The network also includes trained distributors, establishing a resale-access premise but not distributor ownership roles or annual sales weights. ([retsch.com](https://www.retsch.com/contact-services/))

35. HOSOKAWA ALPINE Aktiengesellschaft - Conditions of Sale 371_00 EN

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Hosokawa requires company confirmation of representatives' transactions and makes contractual scope authoritative. The terms support agency-role attribution, not the assumed agent percentage. ([hosokawa-alpine.com](https://www.hosokawa-alpine.com/fileadmin/allgemein/Legal/AGB/AGB_Verkaufsbedingungen_en_371_00.pdf))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Hosokawa requires company confirmation of representatives' transactions and makes contractual scope authoritative. The terms support agency-role attribution, not the assumed agent percentage. ([hosokawa-alpine.com](https://www.hosokawa-alpine.com/fileadmin/allgemein/Legal/AGB/AGB_Verkaufsbedingungen_en_371_00.pdf))

36. UNSD - ISIC Rev.5, Class 4610: Wholesale on a Fee or Contract Basis

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: ISIC Rev.xx.xx class xx.xx defines fee/commission intermediation without ownership, supporting a non-title-taking agency numerator distinct from goods supplied on own account. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: ISIC Rev.xx.xx class xx.xx defines fee/commission intermediation without ownership, supporting a non-title-taking agency numerator distinct from goods supplied on own account. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Own-account wholesale is excluded from the agency class, supporting the reseller/agent partition without supplying ultrafine-mill channel shares. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own-account wholesale is excluded from the agency class, supporting the reseller/agent partition without supplying ultrafine-mill channel shares. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))

37. ITDI-PB-2024-057 - Supply, Delivery, Installation and Commissioning of Ultra-fine Friction Grinder

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The 2024 friction-grinder procurement had a PHP xx.xx budget and failed with no bidder. It establishes a configured-package spending ceiling and commercial category, not a sale or a shipment count. ([notices.philgeps.gov.ph](https://notices.philgeps.gov.ph/GEPSNONPILOT/Tender/PrintableBidNoticeAbstractUI.aspx?refid=xx.xx))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The 2024 friction-grinder procurement had a PHP xx.xx budget and failed with no bidder. It establishes a configured-package spending ceiling and commercial category, not a sale or a shipment count. ([notices.philgeps.gov.ph](https://notices.philgeps.gov.ph/GEPSNONPILOT/Tender/PrintableBidNoticeAbstractUI.aspx?refid=xx.xx))

38. Bangko Sentral ng Pilipinas - Balance of Payments Report, Q4 2024

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The central bank reports a 2024 average of PHP xx.xx per USD. Dividing the failed PHP xx.xx procurement budget by this rate gives an approximately USD xx.xx comparison ceiling, not realized equipment revenue. ([bsp.gov.ph](https://www.bsp.gov.ph/Media_And_Research/Balance%20of%20Payments%20Report/2024/BOP_4qtr2024.pdf))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The central bank reports a 2024 average of PHP xx.xx per USD. Dividing the failed PHP xx.xx procurement budget by this rate gives an approximately USD xx.xx comparison ceiling, not realized equipment revenue. ([bsp.gov.ph](https://www.bsp.gov.ph/Media_And_Research/Balance%20of%20Payments%20Report/2024/BOP_4qtr2024.pdf))

17. Ultra Fine Grinding Mill Market, by Country

United States purchasers should establish which application-specific equipment obligations govern the transaction. Drug-product rules require equipment appropriate for intended use, while human-food provisions separately address cleanability, maintenance, allergen cross-contact, and contamination. ▪ ▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪ ▪▪ ▪▪▪▪ ▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪ ▪▪▪▪ ▪▪▪ ▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪ ▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪ ▪▪▪ ▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪ ▪▪▪ ▪▪▪▪▪▪▪▪

▪▪▪▪▪▪▪▪ ▪▪▪ ▪▪▪ ▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪ ▪ ▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪ ▪▪▪▪ ▪▪▪ ▪▪▪▪▪▪▪▪▪▪ ▪▪ ▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪ UK guidance permits UKCA or CE marking for machinery in Great Britain, while Northern Ireland has different marking arrangements. Buyers should identify the actual delivery destination before accepting a UK-focused proposal as suitable for a German or Northern Irish purchase.

▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪ ▪▪ ▪▪▪▪▪▪▪▪▪ ▪▪ ▪▪▪ ▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪ ▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪ ▪▪▪ ▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪ For a comparable institutional bid, a supplier must establish the applicable participation route rather than rely on its catalog or distributor appointment. The historical solicitation establishes a purchasing condition, not a subsequent award or an active purchasing requirement elsewhere in India.

Saudi Arabia and the United Arab Emirates illustrate why logistics routing and product acceptance require separate accountability. ▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪ ▪▪▪▪▪ ▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪ ▪▪▪▪▪▪▪▪▪ ▪▪ ▪▪▪▪▪▪▪▪▪▪ ▪▪▪ ▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪ ▪▪▪ ▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪▪▪ A Saudi buyer using a UAE intermediary should identify who will provide the Saudi registration and supporting documentation before shipment commitments are accepted.

Chile offers a documented installed-equipment alternative to immediate replacement. Metso's completed Antofagasta expansion identified HIG mill repair and refurbishment capability. ▪▪ ▪▪▪▪▪▪▪▪ ▪▪▪▪▪ ▪▪▪ ▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪ ▪ ▪▪▪▪▪▪▪ ▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪ ▪ ▪▪▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪ ▪▪▪ ▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪ ▪▪▪ ▪▪▪▪▪▪▪▪▪ ▪ ▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪ ▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪ ▪▪ ▪▪▪▪▪▪▪▪▪▪ ▪▪ ▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪ ▪▪ ▪▪▪▪▪▪▪ ▪▪▪ ▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪

Figure 28. Global Ultra Fine Grinding Mill Market Size, by Country, 2025 vs 2032 (%)

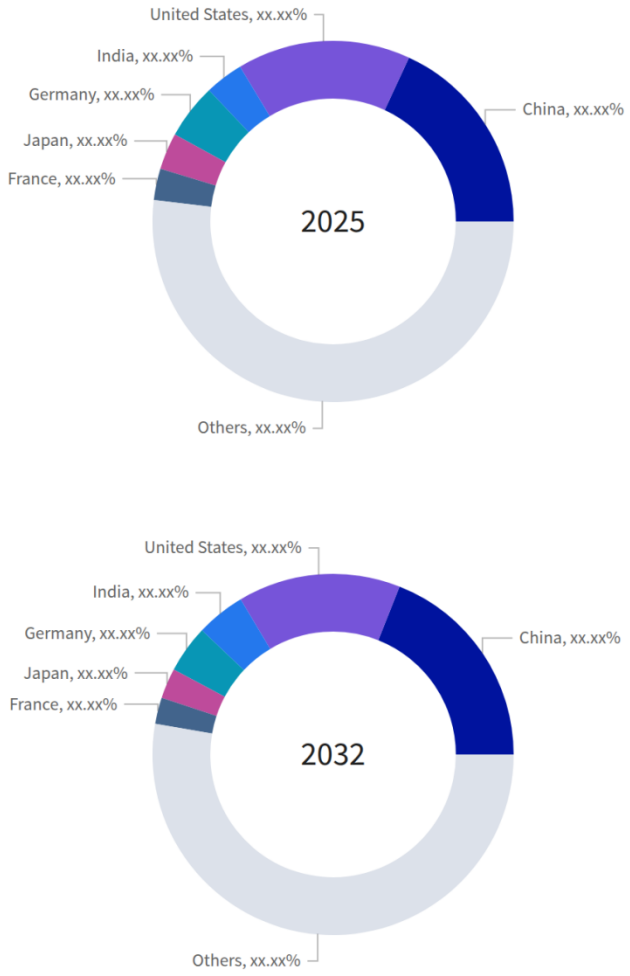


Figure 29. Global Ultra Fine Grinding Mill Market Size, by Country, 2025 vs 2026 vs 2032

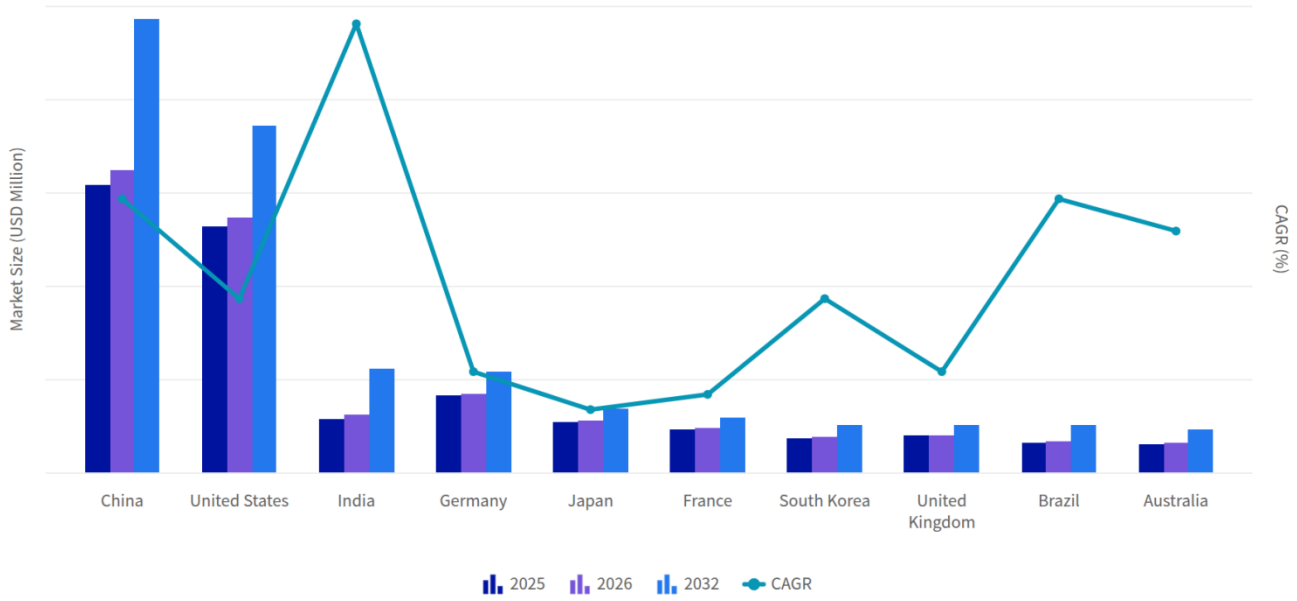


Table 316. Global Ultra Fine Grinding Mill Market, by Country growth contribution, 2025-2032

Category	2025 value (USD Million)	2032 value (USD Million)	Added value (USD Million)	2025 share (%)	2032 share (%)	Change (pp)	Growth share (%)	CAGR (%)
Australia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Brazil	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Canada	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
China	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
France	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Germany	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
India	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Italy	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Japan	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mexico	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Russia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
South Korea	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Spain	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Unallocated / remaining scope	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United Kingdom	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United States	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Scope total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 317. Global Ultra Fine Grinding Mill Market Size, by Country, 2017-2040 (USD Million)

Country	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Australia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Brazil	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Canada	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
China	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
France	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Germany	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
India	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Italy	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Japan	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mexico	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Russia	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
South Korea	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Spain	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United Kingdom	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
United States	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Others	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Sources & Evidence

1. 21 CFR 211.63 - Equipment Design, Size, and Location

   · The drug-product equipment provision supports an intended-use purchasing gate, not approval of a named mill.
   ([ecfr.gov](https://www.ecfr.gov/current/title-xx.xx/chapter-I/subchapter-C/part-xx.xx/subpart-D/section-xx.xx))

2. 21 CFR 117.40 - Equipment and Utensils

   · Human-food equipment obligations establish an application-specific purchasing consideration separate from drug-product equipment requirements.
   ([ecfr.gov](https://www.ecfr.gov/current/title-xx.xx/chapter-I/subchapter-B/part-xx.xx/subpart-B/section-xx.xx))

3. High Energy Planetary Ball Mill - IIT Bombay

   · The solicitation establishes participation requirements at the named Indian institution, not a subsequent award or another purchaser's requirements.
   ([iitb.ac.in](https://www.iitb.ac.in/tenders/high-energy-planetary-ball-mill))

   · Evidence informing base-year allocation inputs; displayed values and growth are calculated: The 2024 solicitation concerns one mill and requires two registration stages. It supports a purchaser-specific access constraint, not an award, national procurement conversion rate or forecast revenue.

   · Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The 2024 solicitation concerns one mill and requires two registration stages. It supports a purchaser-specific access constraint, not an award, national procurement conversion rate or forecast revenue.

4. Machinery - European Commission
   - EU machinery placement requires the applicable EU conformity basis; the framework supports distinguishing a German destination from UK territorial marking arrangements. ([single-market-economy.ec.europa.eu](https://single-market-economy.ec.europa.eu/sectors/mechanical-engineering/machinery_en))
5. Metso's service center expansion in Antofagasta elevates support for Chile's mining industry
   - The named Chilean service capability supports requesting an asset-specific repair proposal, not assuming a reserved slot or guaranteed service outcome. ([metso.com](https://www.metso.com/corporate/media/news/2025/xx.xx/metsos-service-center-expansion-in-antofagasta-elevates-support-for-chiles-mining-industry/))
6. Customs Union for GCC States - Federal Authority for Identity, Citizenship, Customs & Port Security
   - First-entry customs handling supports examining a UAE intermediary's logistics role separately from Saudi registration responsibility. That allocation is a commercial inference requiring contractual confirmation. ([icp.gov.ae](https://icp.gov.ae/en/customs-union-for-gcc/))
7. Registration of a product conformity certificate - SASO
   - The Saudi service establishes identifiable applicant roles and model-specific information requirements, not an automatic transfer of responsibility to a UAE intermediary. ([saso.gov.sa](https://www.saso.gov.sa/en/eservices/pages/details.aspx?serviceid=xx.xx))
8. Product regulations by sector and current approaches to product marking: UKCA and CE regimes
   - UK guidance permits UKCA or CE marking for machinery in Great Britain and identifies different Northern Irish marking arrangements. The actual destination must therefore be specified. ([gov.uk](https://www.gov.uk/government/publications/product-regulations-by-sector-and-current-approaches-to-product-marking-ukca-and-ce-regimes/product-regulations-by-sector-and-current-approaches-to-product-marking-ukca-and-ce-regimes))
9. Mach for mixing/kneading/crushing/grinding etc imports by country | 2021
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports were USD xx.xx. The model applies a qualified timing/access bridge and does not describe this as current trade.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports were USD xx.xx. The model applies a qualified timing/access bridge and does not describe this as current trade.
10. Crushing/grinding machines for earth/ stone/ore imports by country | 2021
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports of USD xx.xx provide the second historical purchasing primitive; the 2025 and 2032 allocations remain modeled.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports of USD xx.xx provide the second historical purchasing primitive; the 2025 and 2032 allocations remain modeled.
11. Business Unit Grinding & Dispersing - NETZSCH
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Documented U.S. production and local commercial operations support an explicit, uncertain domestic-supply bridge rather than treating imports as the entire numerator.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Documented U.S. production and local commercial operations support an explicit, uncertain domestic-supply bridge rather than treating imports as the entire numerator.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Brazilian local production and commercial operations qualify reliance on imports alone, without establishing the assumed domestic sales amount.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Brazilian local production and commercial operations qualify reliance on imports alone, without establishing the assumed domestic sales amount.

12. Methodology - UNIDO Industrial Analytics Platform
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The methodology notes that U.S. trade coverage includes Puerto Rico, reinforcing that the national purchasing proxy must not be renormalized to the xx.xx-state inventory.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The methodology notes that U.S. trade coverage includes Puerto Rico, reinforcing that the national purchasing proxy must not be renormalized to the xx.xx-state inventory.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The methodology identifies Monaco within French trade coverage; the customs input is an imperfect national demand proxy rather than a directly observed country numerator.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The methodology identifies Monaco within French trade coverage; the customs input is an imperfect national demand proxy rather than a directly observed country numerator.

17.1. China

Table 318. China Ultra Fine Grinding Mill Market Size, 2017-2040 (USD Million)

Country	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
China	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 319. China Ultra Fine Grinding Mill Market Size, by Supply Scope, 2017-2040 (USD Million)

Supply Scope	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Integrated Milling Packages	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Standalone Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 320. China Ultra Fine Grinding Mill Market Size, by Mill Technology, 2017-2040 (USD Million)

Mill Technology	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Cutting Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Disc and Colloid Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Gas-Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mechanical Impact Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Media Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Roller Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wet-Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 321. China Ultra Fine Grinding Mill Market Size, by Media Mills, 2017-2040 (USD Million)

Media Mills	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Rotary and Planetary Ball Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Stirred Media Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Vibratory Media Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 322. China Ultra Fine Grinding Mill Market Size, by Gas-Jet Mills, 2017-2040 (USD Million)

Gas-Jet Mills	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Loop Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Opposed-Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Spiral Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Target Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 323. China Ultra Fine Grinding Mill Market Size, by Processed Material, 2017-2040 (USD Million)

Processed Material	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Biomass and Natural Ingredients	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Carbonaceous Materials	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Formulations and Composites	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Industrial Minerals	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Inorganic Chemicals, Ceramics, and Glass	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Metal Ores and Concentrates	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Metals and Alloys	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Organic Chemicals	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Polymers and Elastomers	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 324. China Ultra Fine Grinding Mill Market Size, by Buyer Industry, 2017-2040 (USD Million)

Buyer Industry	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Chemical and Fuel Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Electrical and Electronic Product Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Food, Beverage, and Feed Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Glass, Ceramics, and Construction Materials Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Materials Recovery and Recycling	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Metals and Fabricated Metal Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mining and Mineral Processing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Pharmaceutical Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Power and Heat Generation	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Research, Education, and Testing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Rubber and Plastics Product Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wood, Pulp, and Paper Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Others	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 325. China Ultra Fine Grinding Mill Market Size, by Deployment Scale, 2017-2040 (USD Million)

Deployment Scale	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Industrial Production	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Laboratory	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Pilot	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 326. China Ultra Fine Grinding Mill Market Size, by Sales Channel, 2017-2040 (USD Million)

Sales Channel	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Agent-Mediated Sales	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Independent Reseller Sales	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Manufacturer-Direct Sales	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 327. China Ultra Fine Grinding Mill Market Size, by Processing State, 2017-2040 (USD Million)

Processing State	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Dry Grinding	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wet and Dry Grinding	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wet Grinding	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 328. China Ultra Fine Grinding Mill Market Size, by Operating Mode, 2017-2040 (USD Million)

Operating Mode	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Batch	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Batch and Continuous	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Continuous	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Sources & Evidence

1. Hosokawa Micron - FY2025 Financial Results Presentation, November 25, 2025 (Japanese)
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; material attribution modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; material attribution modeled.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; establishment attribution modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; establishment attribution modeled.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; buyer attribution assumed.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; buyer attribution assumed.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; qualifying power attribution unverified.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; qualifying power attribution unverified.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; institutional attribution assumed.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; institutional attribution assumed.

2. Metso Receives Order for Grinding Mills to a Copper Project in Africa
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Approximately EUR xx.xx 2024 HIGmill order includes auxiliaries and services; a package-scale anchor, not recognized annual revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Approximately EUR xx.xx 2024 HIGmill order includes auxiliaries and services; a package-scale anchor, not recognized annual revenue.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The copper-project award establishes an ore/concentrate commercial purchasing context.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The copper-project award establishes an ore/concentrate commercial purchasing context.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The award concerns an African mining project; it does not disclose the global mining-buyer share.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The award concerns an African mining project; it does not disclose the global mining-buyer share.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Large industrial equipment procurement supports the production-scale category premise.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Large industrial equipment procurement supports the production-scale category premise.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The August xx.xx 2024 announcement records an approximately EUR xx.xx HIGmill order including auxiliaries and services. It anchors package-level commercial materiality, not a mill unit price or 2025 recognized revenue. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The August xx.xx 2024 announcement records an approximately EUR xx.xx HIGmill order including auxiliaries and services. It anchors package-level commercial materiality, not a mill unit price or 2025 recognized revenue. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The stirred-package order supports the Media Mills value-weight model and continuing commercial-demand premise, with order-to-revenue timing unresolved. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The stirred-package order supports the Media Mills value-weight model and continuing commercial-demand premise, with order-to-revenue timing unresolved. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
3. HIGmill Plant - Metso
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Standalone marketing terminology does not establish the study's Standalone Mills equipment scope.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Standalone marketing terminology does not establish the study's Standalone Mills equipment scope.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: HIGmill Plant includes pre-engineered auxiliary modules, supporting classification as an equipment package.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: HIGmill Plant includes pre-engineered auxiliary modules, supporting classification as an equipment package.

4. IsaMill - About, Technology Partnership and Engineering
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Delivery alternatives permit mill-only supply or additional auxiliary equipment; actual equipment scope determines attribution.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Delivery alternatives permit mill-only supply or additional auxiliary equipment; actual equipment scope determines attribution.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Modular auxiliary-inclusive and turnkey alternatives support differentiated package scope, without proving a global adoption percentage.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Modular auxiliary-inclusive and turnkey alternatives support differentiated package scope, without proving a global adoption percentage.
5. Commission Processing - NIPPON COKE & ENGINEERING CO., LTD.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Own commercial processing portfolio identifies glass, ceramics and inorganic materials; establishes material mapping, not equipment revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own commercial processing portfolio identifies glass, ceramics and inorganic materials; establishes material mapping, not equipment revenue.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Organic pigments are named commercial processing materials.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Organic pigments are named commercial processing materials.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Metal powders are named commercial processing materials.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Metal powders are named commercial processing materials.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Carbon is identified in the operator's commercial grinding portfolio.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Carbon is identified in the operator's commercial grinding portfolio.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Thermosetting resin supports a polymer-material category premise.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Thermosetting resin supports a polymer-material category premise.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Ink-related grinding establishes a commercial reference but does not resolve whole-formulation versus constituent duty.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Ink-related grinding establishes a commercial reference but does not resolve whole-formulation versus constituent duty.

6. Micronization / Grinding - A. Ebbecke Verfahrenstechnik AG
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Commercial contract-grinding coverage includes natural materials and food ingredients; processing fees are excluded from equipment value.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Commercial contract-grinding coverage includes natural materials and food ingredients; processing fees are excluded from equipment value.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Plastic granulates and resins establish material coverage, not downstream customers' equipment ownership.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Plastic granulates and resins establish material coverage, not downstream customers' equipment ownership.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operator-side food-processing reference supports establishment attribution rather than automatically assigning equipment to its customers.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operator-side food-processing reference supports establishment attribution rather than automatically assigning equipment to its customers.
7. Manufacturing Capabilities - Asbury Advanced Materials
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Own manufacturing disclosure identifies carbon-material grinding and micronization; supports the material-duty premise only.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own manufacturing disclosure identifies carbon-material grinding and micronization; supports the material-duty premise only.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Custom formulations and dispersions are commercial outputs, but joint whole-formulation milling remains unmeasured.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Custom formulations and dispersions are commercial outputs, but joint whole-formulation milling remains unmeasured.
8. Pyrum Innovations AG - Interim Group Report January 1 to June 30, 2025
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The purchaser's 2025 report records a grinding-plant installation associated with recovered carbon black; no downstream material revenue is counted.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The purchaser's 2025 report records a grinding-plant installation associated with recovered carbon black; no downstream material revenue is counted.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The report establishes an actual recovery-business equipment context, while the exact attributable mill expenditure remains undisclosed.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The report establishes an actual recovery-business equipment context, while the exact attributable mill expenditure remains undisclosed.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The disclosed commercial-site grinding installation supports Industrial Production classification.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The disclosed commercial-site grinding installation supports Industrial Production classification.

9. NRRI Advances Efficient Grinding Technology on the Iron Range
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The institution distinguishes a planned bench-scale purchase from its loaned pilot equipment; not a completed-sale census.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The institution distinguishes a planned bench-scale purchase from its loaned pilot equipment; not a completed-sale census.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The May xx.xx 2024 account identifies a loaned pilot stirred mill; unpaid placement is not counted as equipment-sale revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The May xx.xx 2024 account identifies a loaned pilot stirred mill; unpaid placement is not counted as equipment-sale revenue.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operating research institute is distinct from its mining clients, supporting buyer/material separation.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operating research institute is distinct from its mining clients, supporting buyer/material separation.
10. Planetary Ball Mill PM 100 - RETSCH
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The PM xx.xx is marketed as a benchtop instrument, supporting the small-laboratory pool classification without establishing sales weight.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The PM xx.xx is marketed as a benchtop instrument, supporting the small-laboratory pool classification without establishing sales weight.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The individual-instrument offering supports a narrower equipment-supply alternative; package incidence remains modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The individual-instrument offering supports a narrower equipment-supply alternative; package incidence remains modeled.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: PM xx.xx is a marketed benchtop planetary platform, supporting laboratory-category mapping rather than shipment or price weights. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: PM xx.xx is a marketed benchtop planetary platform, supporting laboratory-category mapping rather than shipment or price weights. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The product page advertises both dry and wet capability. Actual dual-state purchase inclusion remains an explicit model assumption. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The product page advertises both dry and wet capability. Actual dual-state purchase inclusion remains an explicit model assumption. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))

11. Jet Mill - Contract History CW2408170, CanadaBuys
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: A May xx.xx 2026 laboratory jet-mill award totals CAD xx.xx; a dated procurement check, not a 2025 shipment or global average price.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: A May xx.xx 2026 laboratory jet-mill award totals CAD xx.xx; a dated procurement check, not a 2025 shipment or global average price.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The record distinguishes Natural Resources Canada as buying organization from PSPC as contracting organization, supporting establishment attribution.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The record distinguishes Natural Resources Canada as buying organization from PSPC as contracting organization, supporting establishment attribution.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The jet-mill award totals CAD xx.xx and is dated May xx.xx 2026. It is a nearby-period laboratory purchasing comparator, not a 2025 recognized sale, and supplies neither a gas-jet subtype nor a definitive channel role. ([canadabuys.canada.ca](https://canadabuys.canada.ca/en/tender-opportunities/contract-history/cw2408170-xx.xx))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The jet-mill award totals CAD xx.xx and is dated May xx.xx 2026. It is a nearby-period laboratory purchasing comparator, not a 2025 recognized sale, and supplies neither a gas-jet subtype nor a definitive channel role. ([canadabuys.canada.ca](https://canadabuys.canada.ca/en/tender-opportunities/contract-history/cw2408170-xx.xx))
12. MFC Production Equipment - FiberLean
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The manufacturer's commercial offering targets pulp, paper and related establishments; it is not a measured industry sales share.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The manufacturer's commercial offering targets pulp, paper and related establishments; it is not a measured industry sales share.
13. Pulverizing Equipment - Coperion
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The broader portfolio names power-generation applications and separately lists ultrafine equipment; this limits, rather than verifies, the assumed qualifying power-buyer allocation.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The broader portfolio names power-generation applications and separately lists ultrafine equipment; this limits, rather than verifies, the assumed qualifying power-buyer allocation.
14. LG Energy Solution Releases 2025 Financial Results - January 29, 2026
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own 2025 revenue decline and dated 2026 capital-expenditure reduction target constrain battery-related equipment-adoption assumptions.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Existing-asset reuse strategy qualifies a direct downstream-demand-to-new-carbon-material-mill investment inference.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Buyer investment restraint constrains the relative application multiplier; upstream chemical attribution remains separately assumed.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own battery-manufacturer financial and investment plans provide a counter-test, not an ultrafine equipment purchasing total.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The January 2026 emphasis on reduced new investment qualifies automatic growth in broader equipment-package adoption.

15. UNSD Classification Detail - ISIC Rev.4, Class 3830: Materials Recovery
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The official classification distinguishes secondary-material recovery from manufacture of new final products; it supplies no equipment sales weight.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The official classification distinguishes secondary-material recovery from manufacture of new final products; it supplies no equipment sales weight.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Recovered-input use alone does not classify the equipment operator as a recovery establishment rather than a product manufacturer.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Recovered-input use alone does not classify the equipment operator as a recovery establishment rather than a product manufacturer.
16. Ultrafin Mill: Super Masscolloider, Masuko MKCA6-5J CE - University of Ljubljana
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The university inventories a laboratory ultrafine mill within wood science; the institutional operator is not a wood-products manufacturer.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The university inventories a laboratory ultrafine mill within wood science; the institutional operator is not a wood-products manufacturer.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The institutional inventory expressly identifies laboratory equipment, supporting deployment classification without establishing a purchase-year value.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The institutional inventory expressly identifies laboratory equipment, supporting deployment classification without establishing a purchase-year value.
17. Contract Manufacturing of Pharmaceuticals - YUKI GOSEI KOGYO CO., LTD.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operator distinguishes production jet mills from smaller equipment, supporting industrial deployment at a pharmaceutical contract manufacturer.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operator distinguishes production jet mills from smaller equipment, supporting industrial deployment at a pharmaceutical contract manufacturer.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The actual pharmaceutical manufacturing operator is distinct from customers outsourcing production; processing-service receipts remain excluded.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The actual pharmaceutical manufacturing operator is distinct from customers outsourcing production; processing-service receipts remain excluded.

18. Record year for Metso stirred mills as mining industry opts for energy-efficient comminution technology

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Metso reports more than twenty Vertimill sales in 2025 and approximately xx.xx cumulative stirred-mill deliveries. Broader application coverage prevents treating these as ultrafine-only annual shipments; they constrain the modeled stirred/mining allocation and forecast premise.
([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Metso reports more than twenty Vertimill sales in 2025 and approximately xx.xx cumulative stirred-mill deliveries. Broader application coverage prevents treating these as ultrafine-only annual shipments; they constrain the modeled stirred/mining allocation and forecast premise.
([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The disclosed stirred-equipment activity supports material Media Mills participation, not the final modeled parent share.
([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The disclosed stirred-equipment activity supports material Media Mills participation, not the final modeled parent share.
([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))

19. Bühler strengthens its market position

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Bühler reports xx.xx% Grinding & Dispersing order growth in 2025 against a xx.xx% decline in broader Advanced Materials orders. This is a mixed commercial leading indicator, not observed market-share growth.
([buhlergroup.com](https://www.buhlergroup.com/global/en/media/media-releases/b%C3%BChler-strengthens-its-marketposition.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Bühler reports xx.xx% Grinding & Dispersing order growth in 2025 against a xx.xx% decline in broader Advanced Materials orders. This is a mixed commercial leading indicator, not observed market-share growth.
([buhlergroup.com](https://www.buhlergroup.com/global/en/media/media-releases/b%C3%BChler-strengthens-its-marketposition.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The disclosed battery-related and other application orders constrain differentiated Media Mills forecast assumptions without converting orders directly to annual equipment revenue.
([buhlergroup.com](https://www.buhlergroup.com/global/en/media/media-releases/b%C3%BChler-strengthens-its-marketposition.html))

20. Management Greetings | HOSOKAWAMICRON CORPORATION

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Hosokawa reports FY2025 net sales of JPY xx.xx, down xx.xx%, and orders down xx.xx%. The diversified-company result challenges uniform purchasing acceleration and constrains, rather than directly measures, technology-mix assumptions.
([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/ir/management_policy/management_greetings.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Hosokawa reports FY2025 net sales of JPY xx.xx, down xx.xx%, and orders down xx.xx%. The diversified-company result challenges uniform purchasing acceleration and constrains, rather than directly measures, technology-mix assumptions.
([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/ir/management_policy/management_greetings.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The same broader financial contraction is counterevidence to assuming uniform Media Mills growth across suppliers; no corporate revenue is assigned directly to the category.
([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/ir/management_policy/management_greetings.html))

21. Details of micromeritics | HOSOKAWAMICRON CORPORATION

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Hosokawa identifies its AS spiral offering, supporting subtype mapping rather than a sales weight. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Hosokawa identifies its AS spiral offering, supporting subtype mapping rather than a sales weight. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The AFG/TFG counterjet offerings support the retained Opposed-Jet commercial mapping. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The AFG/TFG counterjet offerings support the retained Opposed-Jet commercial mapping. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The manufacturer identifies Innovomizer as a mechanical ultrafine offering; ordinary impact equipment is not automatically included. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The manufacturer identifies Innovomizer as a mechanical ultrafine offering; ordinary impact equipment is not automatically included. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

22. Grinding Equipment Manufacturer Supplier Factory, Grinding System | Longly

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: LONGLY discloses current annual capacity above 2,000 equipment units and commercial wet-grinding offerings. Capacity is bridged through explicitly assumed timing, utilization and eligible-product factors; it is not reported 2025 stirred-mill shipments. ([longlymill.com](https://www.longlymill.com/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: LONGLY discloses current annual capacity above 2,000 equipment units and commercial wet-grinding offerings. Capacity is bridged through explicitly assumed timing, utilization and eligible-product factors; it is not reported 2025 stirred-mill shipments. ([longlymill.com](https://www.longlymill.com/))

23. Ultra-Fine Grinding - Hosokawa Micron Malaysia

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The inspected ultrafine portfolio identifies AWM-F table-roller equipment, supporting the qualifying Roller Mills boundary, not its assumed counts or prices. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The inspected ultrafine portfolio identifies AWM-F table-roller equipment, supporting the qualifying Roller Mills boundary, not its assumed counts or prices. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Super Orion is a marketed rotary ball-mill constituent of the combined rotary/planetary category. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Super Orion is a marketed rotary ball-mill constituent of the combined rotary/planetary category. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: MJT is explicitly listed as a target-type offering, supporting precedence of the named platform over overlapping generic jet terminology. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: MJT is explicitly listed as a target-type offering, supporting precedence of the named platform over overlapping generic jet terminology. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

24. Loop Jet Mill - Consistency. Compliance. Engineered.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The current named Loop Jet Mill listing establishes an offered commercial platform. It supports forecast category continuity, but does not disclose subtype revenue or prove 2025 sales. ([jetmillmfg.com](https://www.jetmillmfg.com/loop-jet-mill/))
25. SWECO Vibratory Grinding and Particle Size Reduction Equipment
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: SWECO markets Vibro-Energy grinding equipment with separate wet and wet/dry offerings. This supports commercial category and configuration mapping, not the modeled frequency of purchases. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: SWECO markets Vibro-Energy grinding equipment with separate wet and wet/dry offerings. This supports commercial category and configuration mapping, not the modeled frequency of purchases. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Named wet/dry models establish dual-state availability; they do not establish the exact supplied configuration or a market-wide value share. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Named wet/dry models establish dual-state availability; they do not establish the exact supplied configuration or a market-wide value share. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))
26. Fine-cutting mill with rotating classifying feature - the sensational new development!
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The September xx.xx 2014 own-product announcement establishes a pre-base-year SecoMy S cutting offering described for ultrafine commercial applications. It is category evidence, not annual equipment revenue. ([grinding.netzsch.com](https://grinding.netzsch.com/en/news/2014/fine-cutting-mill-with-rotating-classifying-feature-the-sensational-new-development))
27. NETZSCH SecoMy S - Precision Cutting Redefined!
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The August 2026 SecoMy S brochure confirms continuing commercial ultrafine-cutting positioning and system-supply availability. It supports category persistence, not the assumed forecast spending share. ([grinding.netzsch.com](https://grinding.netzsch.com/_Resources/Persistent/xx.xx/e/xx.xx/b/8e4b5adcfc16fcc2d83974f8080d614cce1a2c01/NETZSCH_Fine_Cutting_Mill_SecoMy_S_e.pdf))
28. Wet Milling and Dispersing Device - Star Burst - Sugino Corp.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: SUGINO's Star Burst portfolio identifies wet-jet equipment across research and production purchasing contexts. Only milling-attributable supply is included; adjacent droplet-only or dispersion activity is not automatically counted. ([suginocorp.com](https://www.suginocorp.com/star-burst/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: SUGINO's Star Burst portfolio identifies wet-jet equipment across research and production purchasing contexts. Only milling-attributable supply is included; adjacent droplet-only or dispersion activity is not automatically counted. ([suginocorp.com](https://www.suginocorp.com/star-burst/))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The wet-jet offering supports wet-state classification within the joint value model, not the total Wet Grinding share. ([suginocorp.com](https://www.suginocorp.com/star-burst/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The wet-jet offering supports wet-state classification within the joint value model, not the total Wet Grinding share. ([suginocorp.com](https://www.suginocorp.com/star-burst/))

29. IBU-tec | Mills - Milling Technology for Dry and Wet Grinding
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operator table separately lists two dry opposed-jet units. This is an installed-inventory observation, not a shipment or revenue ratio. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operator table separately lists two dry opposed-jet units. This is an installed-inventory observation, not a shipment or revenue ratio. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Three wet agitator-bead units are separately inventoried, supporting state-specific commercial classification without using their count as a market weight. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Three wet agitator-bead units are separately inventoried, supporting state-specific commercial classification without using their count as a market weight. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
30. Comminution - NTNU
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: NTNU separately records wet/dry capability for stirred and planetary equipment; the inventory is not a representative value-share dataset. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: NTNU separately records wet/dry capability for stirred and planetary equipment; the inventory is not a representative value-share dataset. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The planetary equipment is recorded as batch, supporting a laboratory batch context without assuming all laboratories are batch-only. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The planetary equipment is recorded as batch, supporting a laboratory batch context without assuming all laboratories are batch-only. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The laboratory jet rig is recorded as continuous, independently challenging equivalence between continuous mode and industrial scale. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The laboratory jet rig is recorded as continuous, independently challenging equivalence between continuous mode and industrial scale. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
31. Dry Batch Or Continuous Laboratory Mills - Union Process
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Union Process identifies SD-xx.xx as one laboratory offering for both batch and continuous service. Configuration-specific purchase inclusion and revenue are undisclosed. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Union Process identifies SD-xx.xx as one laboratory offering for both batch and continuous service. Configuration-specific purchase inclusion and revenue are undisclosed. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The same named offering advertises wet/dry capability, supporting a dual-state category premise rather than an observed adoption percentage. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The same named offering advertises wet/dry capability, supporting a dual-state category premise rather than an observed adoption percentage. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))

32. Retsch Contact & Services - Contact Partners Worldwide

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: RETSCH describes a network including daughter companies. Manufacturer affiliation, rather than contact location, informs direct-route attribution. ([retsch.com](https://www.retsch.com/contact-services/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: RETSCH describes a network including daughter companies. Manufacturer affiliation, rather than contact location, informs direct-route attribution. ([retsch.com](https://www.retsch.com/contact-services/))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The network also includes trained distributors, establishing a resale-access premise but not distributor ownership roles or annual sales weights. ([retsch.com](https://www.retsch.com/contact-services/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The network also includes trained distributors, establishing a resale-access premise but not distributor ownership roles or annual sales weights. ([retsch.com](https://www.retsch.com/contact-services/))

33. HOSOKAWA ALPINE Aktiengesellschaft - Conditions of Sale 371_00 EN

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Hosokawa requires company confirmation of representatives' transactions and makes contractual scope authoritative. The terms support agency-role attribution, not the assumed agent percentage. ([hosokawa-alpine.com](https://www.hosokawa-alpine.com/fileadmin/allgemein/Legal/AGB/AGB_Verkaufsbedingungen_en_371_00.pdf))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Hosokawa requires company confirmation of representatives' transactions and makes contractual scope authoritative. The terms support agency-role attribution, not the assumed agent percentage. ([hosokawa-alpine.com](https://www.hosokawa-alpine.com/fileadmin/allgemein/Legal/AGB/AGB_Verkaufsbedingungen_en_371_00.pdf))

34. UNSD - ISIC Rev.5, Class 4610: Wholesale on a Fee or Contract Basis

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: ISIC Rev.xx.xx class xx.xx defines fee/commission intermediation without ownership, supporting a non-title-taking agency numerator distinct from goods supplied on own account. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: ISIC Rev.xx.xx class xx.xx defines fee/commission intermediation without ownership, supporting a non-title-taking agency numerator distinct from goods supplied on own account. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Own-account wholesale is excluded from the agency class, supporting the reseller/agent partition without supplying ultrafine-mill channel shares. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own-account wholesale is excluded from the agency class, supporting the reseller/agent partition without supplying ultrafine-mill channel shares. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))

35. ITDI-PB-2024-057 - Supply, Delivery, Installation and Commissioning of Ultra-fine Friction Grinder

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The 2024 friction-grinder procurement had a PHP xx.xx budget and failed with no bidder. It establishes a configured-package spending ceiling and commercial category, not a sale or a shipment count. ([notices.philgeps.gov.ph](https://notices.philgeps.gov.ph/GEPSNONPILOT/Tender/PrintableBidNoticeAbstractUI.aspx?refid=xx.xx))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The 2024 friction-grinder procurement had a PHP xx.xx budget and failed with no bidder. It establishes a configured-package spending ceiling and commercial category, not a sale or a shipment count. ([notices.philgeps.gov.ph](https://notices.philgeps.gov.ph/GEPSNONPILOT/Tender/PrintableBidNoticeAbstractUI.aspx?refid=xx.xx))

36. Bangko Sentral ng Pilipinas - Balance of Payments Report, Q4 2024

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The central bank reports a 2024 average of PHP xx.xx per USD. Dividing the failed PHP xx.xx procurement budget by this rate gives an approximately USD xx.xx comparison ceiling, not realized equipment revenue. ([bsp.gov.ph](https://www.bsp.gov.ph/Media_And_Research/Balance%20of%20Payments%20Report/2024/BOP_4qtr2024.pdf))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The central bank reports a 2024 average of PHP xx.xx per USD. Dividing the failed PHP xx.xx procurement budget by this rate gives an approximately USD xx.xx comparison ceiling, not realized equipment revenue. ([bsp.gov.ph](https://www.bsp.gov.ph/Media_And_Research/Balance%20of%20Payments%20Report/2024/BOP_4qtr2024.pdf))

17.2. United States

Table 329. United States Ultra Fine Grinding Mill Market Size, 2017-2040 (USD Million)

Country	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
United States	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 330. United States Ultra Fine Grinding Mill Market Size, by Supply Scope, 2017-2040 (USD Million)

Supply Scope	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Integrated Milling Packages	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Standalone Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 331. United States Ultra Fine Grinding Mill Market Size, by Mill Technology, 2017-2040 (USD Million)

Mill Technology	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Cutting Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Disc and Colloid Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Gas-Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mechanical Impact Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Media Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Roller Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wet-Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 332. United States Ultra Fine Grinding Mill Market Size, by Media Mills, 2017-2040 (USD Million)

Media Mills	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Rotary and Planetary Ball Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Stirred Media Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Vibratory Media Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 333. United States Ultra Fine Grinding Mill Market Size, by Gas-Jet Mills, 2017-2040 (USD Million)

Gas-Jet Mills	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Loop Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Opposed-Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Spiral Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Target Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 334. United States Ultra Fine Grinding Mill Market Size, by Processed Material, 2017-2040 (USD Million)

Processed Material	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Biomass and Natural Ingredients	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Carbonaceous Materials	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Formulations and Composites	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Industrial Minerals	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Inorganic Chemicals, Ceramics, and Glass	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Metal Ores and Concentrates	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Metals and Alloys	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Organic Chemicals	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Polymers and Elastomers	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 335. United States Ultra Fine Grinding Mill Market Size, by Buyer Industry, 2017-2040 (USD Million)

Buyer Industry	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Chemical and Fuel Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Electrical and Electronic Product Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Food, Beverage, and Feed Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Glass, Ceramics, and Construction Materials Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Materials Recovery and Recycling	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Metals and Fabricated Metal Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mining and Mineral Processing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Pharmaceutical Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Power and Heat Generation	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Research, Education, and Testing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Rubber and Plastics Product Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wood, Pulp, and Paper Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Others	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 336. United States Ultra Fine Grinding Mill Market Size, by Deployment Scale, 2017-2040 (USD Million)

Deployment Scale	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Industrial Production	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Laboratory	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Pilot	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 337. United States Ultra Fine Grinding Mill Market Size, by Sales Channel, 2017-2040 (USD Million)

Sales Channel	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Agent-Mediated Sales	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Independent Reseller Sales	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Manufacturer-Direct Sales	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 338. United States Ultra Fine Grinding Mill Market Size, by Processing State, 2017-2040 (USD Million)

Processing State	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Dry Grinding	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wet and Dry Grinding	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wet Grinding	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 339. United States Ultra Fine Grinding Mill Market Size, by Operating Mode, 2017-2040 (USD Million)

Operating Mode	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Batch	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Batch and Continuous	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Continuous	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Sources & Evidence

1. Business Unit Grinding & Dispersing - NETZSCH
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Documented U.S. production and local commercial operations support an explicit, uncertain domestic-supply bridge rather than treating imports as the entire numerator.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Documented U.S. production and local commercial operations support an explicit, uncertain domestic-supply bridge rather than treating imports as the entire numerator.
2. Methodology - UNIDO Industrial Analytics Platform
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The methodology notes that U.S. trade coverage includes Puerto Rico, reinforcing that the national purchasing proxy must not be renormalized to the xx.xx-state inventory.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The methodology notes that U.S. trade coverage includes Puerto Rico, reinforcing that the national purchasing proxy must not be renormalized to the xx.xx-state inventory.

3. Hosokawa Micron - FY2025 Financial Results Presentation, November 25, 2025 (Japanese)
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; material attribution modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; material attribution modeled.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; establishment attribution modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; establishment attribution modeled.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; buyer attribution assumed.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; buyer attribution assumed.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; qualifying power attribution unverified.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; qualifying power attribution unverified.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; institutional attribution assumed.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; institutional attribution assumed.

4. Metso Receives Order for Grinding Mills to a Copper Project in Africa
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Approximately EUR xx.xx 2024 HIGmill order includes auxiliaries and services; a package-scale anchor, not recognized annual revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Approximately EUR xx.xx 2024 HIGmill order includes auxiliaries and services; a package-scale anchor, not recognized annual revenue.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The copper-project award establishes an ore/concentrate commercial purchasing context.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The copper-project award establishes an ore/concentrate commercial purchasing context.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The award concerns an African mining project; it does not disclose the global mining-buyer share.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The award concerns an African mining project; it does not disclose the global mining-buyer share.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Large industrial equipment procurement supports the production-scale category premise.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Large industrial equipment procurement supports the production-scale category premise.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The August xx.xx 2024 announcement records an approximately EUR xx.xx HIGmill order including auxiliaries and services. It anchors package-level commercial materiality, not a mill unit price or 2025 recognized revenue. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The August xx.xx 2024 announcement records an approximately EUR xx.xx HIGmill order including auxiliaries and services. It anchors package-level commercial materiality, not a mill unit price or 2025 recognized revenue. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The stirred-package order supports the Media Mills value-weight model and continuing commercial-demand premise, with order-to-revenue timing unresolved. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The stirred-package order supports the Media Mills value-weight model and continuing commercial-demand premise, with order-to-revenue timing unresolved. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
5. HIGmill Plant - Metso
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Standalone marketing terminology does not establish the study's Standalone Mills equipment scope.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Standalone marketing terminology does not establish the study's Standalone Mills equipment scope.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: HIGmill Plant includes pre-engineered auxiliary modules, supporting classification as an equipment package.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: HIGmill Plant includes pre-engineered auxiliary modules, supporting classification as an equipment package.

6. IsaMill - About, Technology Partnership and Engineering
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Delivery alternatives permit mill-only supply or additional auxiliary equipment; actual equipment scope determines attribution.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Delivery alternatives permit mill-only supply or additional auxiliary equipment; actual equipment scope determines attribution.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Modular auxiliary-inclusive and turnkey alternatives support differentiated package scope, without proving a global adoption percentage.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Modular auxiliary-inclusive and turnkey alternatives support differentiated package scope, without proving a global adoption percentage.
7. Commission Processing - NIPPON COKE & ENGINEERING CO., LTD.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Own commercial processing portfolio identifies glass, ceramics and inorganic materials; establishes material mapping, not equipment revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own commercial processing portfolio identifies glass, ceramics and inorganic materials; establishes material mapping, not equipment revenue.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Organic pigments are named commercial processing materials.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Organic pigments are named commercial processing materials.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Metal powders are named commercial processing materials.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Metal powders are named commercial processing materials.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Carbon is identified in the operator's commercial grinding portfolio.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Carbon is identified in the operator's commercial grinding portfolio.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Thermosetting resin supports a polymer-material category premise.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Thermosetting resin supports a polymer-material category premise.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Ink-related grinding establishes a commercial reference but does not resolve whole-formulation versus constituent duty.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Ink-related grinding establishes a commercial reference but does not resolve whole-formulation versus constituent duty.

8. Micronization / Grinding - A. Ebbecke Verfahrenstechnik AG
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Commercial contract-grinding coverage includes natural materials and food ingredients; processing fees are excluded from equipment value.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Commercial contract-grinding coverage includes natural materials and food ingredients; processing fees are excluded from equipment value.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Plastic granulates and resins establish material coverage, not downstream customers' equipment ownership.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Plastic granulates and resins establish material coverage, not downstream customers' equipment ownership.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operator-side food-processing reference supports establishment attribution rather than automatically assigning equipment to its customers.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operator-side food-processing reference supports establishment attribution rather than automatically assigning equipment to its customers.
9. Manufacturing Capabilities - Asbury Advanced Materials
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Own manufacturing disclosure identifies carbon-material grinding and micronization; supports the material-duty premise only.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own manufacturing disclosure identifies carbon-material grinding and micronization; supports the material-duty premise only.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Custom formulations and dispersions are commercial outputs, but joint whole-formulation milling remains unmeasured.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Custom formulations and dispersions are commercial outputs, but joint whole-formulation milling remains unmeasured.
10. Pyrum Innovations AG - Interim Group Report January 1 to June 30, 2025
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The purchaser's 2025 report records a grinding-plant installation associated with recovered carbon black; no downstream material revenue is counted.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The purchaser's 2025 report records a grinding-plant installation associated with recovered carbon black; no downstream material revenue is counted.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The report establishes an actual recovery-business equipment context, while the exact attributable mill expenditure remains undisclosed.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The report establishes an actual recovery-business equipment context, while the exact attributable mill expenditure remains undisclosed.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The disclosed commercial-site grinding installation supports Industrial Production classification.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The disclosed commercial-site grinding installation supports Industrial Production classification.

11. NRRI Advances Efficient Grinding Technology on the Iron Range
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The institution distinguishes a planned bench-scale purchase from its loaned pilot equipment; not a completed-sale census.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The institution distinguishes a planned bench-scale purchase from its loaned pilot equipment; not a completed-sale census.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The May xx.xx 2024 account identifies a loaned pilot stirred mill; unpaid placement is not counted as equipment-sale revenue.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The May xx.xx 2024 account identifies a loaned pilot stirred mill; unpaid placement is not counted as equipment-sale revenue.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operating research institute is distinct from its mining clients, supporting buyer/material separation.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operating research institute is distinct from its mining clients, supporting buyer/material separation.
12. Planetary Ball Mill PM 100 - RETSCH
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The PM xx.xx is marketed as a benchtop instrument, supporting the small-laboratory pool classification without establishing sales weight.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The PM xx.xx is marketed as a benchtop instrument, supporting the small-laboratory pool classification without establishing sales weight.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The individual-instrument offering supports a narrower equipment-supply alternative; package incidence remains modeled.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The individual-instrument offering supports a narrower equipment-supply alternative; package incidence remains modeled.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: PM xx.xx is a marketed benchtop planetary platform, supporting laboratory-category mapping rather than shipment or price weights. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: PM xx.xx is a marketed benchtop planetary platform, supporting laboratory-category mapping rather than shipment or price weights. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The product page advertises both dry and wet capability. Actual dual-state purchase inclusion remains an explicit model assumption. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The product page advertises both dry and wet capability. Actual dual-state purchase inclusion remains an explicit model assumption. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))

13. Jet Mill - Contract History CW2408170, CanadaBuys
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: A May xx.xx 2026 laboratory jet-mill award totals CAD xx.xx; a dated procurement check, not a 2025 shipment or global average price.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: A May xx.xx 2026 laboratory jet-mill award totals CAD xx.xx; a dated procurement check, not a 2025 shipment or global average price.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The record distinguishes Natural Resources Canada as buying organization from PSPC as contracting organization, supporting establishment attribution.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The record distinguishes Natural Resources Canada as buying organization from PSPC as contracting organization, supporting establishment attribution.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The jet-mill award totals CAD xx.xx and is dated May xx.xx 2026. It is a nearby-period laboratory purchasing comparator, not a 2025 recognized sale, and supplies neither a gas-jet subtype nor a definitive channel role. ([canadabuys.canada.ca](https://canadabuys.canada.ca/en/tender-opportunities/contract-history/cw2408170-xx.xx))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The jet-mill award totals CAD xx.xx and is dated May xx.xx 2026. It is a nearby-period laboratory purchasing comparator, not a 2025 recognized sale, and supplies neither a gas-jet subtype nor a definitive channel role. ([canadabuys.canada.ca](https://canadabuys.canada.ca/en/tender-opportunities/contract-history/cw2408170-xx.xx))
14. MFC Production Equipment - FiberLean
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The manufacturer's commercial offering targets pulp, paper and related establishments; it is not a measured industry sales share.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The manufacturer's commercial offering targets pulp, paper and related establishments; it is not a measured industry sales share.
15. Pulverizing Equipment - Coperion
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The broader portfolio names power-generation applications and separately lists ultrafine equipment; this limits, rather than verifies, the assumed qualifying power-buyer allocation.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The broader portfolio names power-generation applications and separately lists ultrafine equipment; this limits, rather than verifies, the assumed qualifying power-buyer allocation.
16. LG Energy Solution Releases 2025 Financial Results - January 29, 2026
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own 2025 revenue decline and dated 2026 capital-expenditure reduction target constrain battery-related equipment-adoption assumptions.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Existing-asset reuse strategy qualifies a direct downstream-demand-to-new-carbon-material-mill investment inference.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Buyer investment restraint constrains the relative application multiplier; upstream chemical attribution remains separately assumed.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own battery-manufacturer financial and investment plans provide a counter-test, not an ultrafine equipment purchasing total.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The January 2026 emphasis on reduced new investment qualifies automatic growth in broader equipment-package adoption.

17. UNSD Classification Detail - ISIC Rev.4, Class 3830: Materials Recovery
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The official classification distinguishes secondary-material recovery from manufacture of new final products; it supplies no equipment sales weight.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The official classification distinguishes secondary-material recovery from manufacture of new final products; it supplies no equipment sales weight.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Recovered-input use alone does not classify the equipment operator as a recovery establishment rather than a product manufacturer.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Recovered-input use alone does not classify the equipment operator as a recovery establishment rather than a product manufacturer.
18. Ultrafin Mill: Super Masscolloider, Masuko MKCA6-5J CE - University of Ljubljana
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The university inventories a laboratory ultrafine mill within wood science; the institutional operator is not a wood-products manufacturer.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The university inventories a laboratory ultrafine mill within wood science; the institutional operator is not a wood-products manufacturer.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The institutional inventory expressly identifies laboratory equipment, supporting deployment classification without establishing a purchase-year value.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The institutional inventory expressly identifies laboratory equipment, supporting deployment classification without establishing a purchase-year value.
19. Contract Manufacturing of Pharmaceuticals - YUKI GOSEI KOGYO CO., LTD.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operator distinguishes production jet mills from smaller equipment, supporting industrial deployment at a pharmaceutical contract manufacturer.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operator distinguishes production jet mills from smaller equipment, supporting industrial deployment at a pharmaceutical contract manufacturer.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The actual pharmaceutical manufacturing operator is distinct from customers outsourcing production; processing-service receipts remain excluded.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The actual pharmaceutical manufacturing operator is distinct from customers outsourcing production; processing-service receipts remain excluded.

20. Record year for Metso stirred mills as mining industry opts for energy-efficient comminution technology

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Metso reports more than twenty Vertimill sales in 2025 and approximately xx.xx cumulative stirred-mill deliveries. Broader application coverage prevents treating these as ultrafine-only annual shipments; they constrain the modeled stirred/mining allocation and forecast premise.
([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Metso reports more than twenty Vertimill sales in 2025 and approximately xx.xx cumulative stirred-mill deliveries. Broader application coverage prevents treating these as ultrafine-only annual shipments; they constrain the modeled stirred/mining allocation and forecast premise.
([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The disclosed stirred-equipment activity supports material Media Mills participation, not the final modeled parent share.
([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The disclosed stirred-equipment activity supports material Media Mills participation, not the final modeled parent share.
([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))

21. Bühler strengthens its market position

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Bühler reports xx.xx% Grinding & Dispersing order growth in 2025 against a xx.xx% decline in broader Advanced Materials orders. This is a mixed commercial leading indicator, not observed market-share growth.
([buhlergroup.com](https://www.buhlergroup.com/global/en/media/media-releases/b%C3%BChler-strengthens-its-marketposition.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Bühler reports xx.xx% Grinding & Dispersing order growth in 2025 against a xx.xx% decline in broader Advanced Materials orders. This is a mixed commercial leading indicator, not observed market-share growth.
([buhlergroup.com](https://www.buhlergroup.com/global/en/media/media-releases/b%C3%BChler-strengthens-its-marketposition.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The disclosed battery-related and other application orders constrain differentiated Media Mills forecast assumptions without converting orders directly to annual equipment revenue.
([buhlergroup.com](https://www.buhlergroup.com/global/en/media/media-releases/b%C3%BChler-strengthens-its-marketposition.html))

22. Management Greetings | HOSOKAWAMICRON CORPORATION

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Hosokawa reports FY2025 net sales of JPY xx.xx, down xx.xx%, and orders down xx.xx%. The diversified-company result challenges uniform purchasing acceleration and constrains, rather than directly measures, technology-mix assumptions.
([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/ir/management_policy/management_greetings.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Hosokawa reports FY2025 net sales of JPY xx.xx, down xx.xx%, and orders down xx.xx%. The diversified-company result challenges uniform purchasing acceleration and constrains, rather than directly measures, technology-mix assumptions.
([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/ir/management_policy/management_greetings.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The same broader financial contraction is counterevidence to assuming uniform Media Mills growth across suppliers; no corporate revenue is assigned directly to the category.
([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/ir/management_policy/management_greetings.html))

23. Details of micromeritics | HOSOKAWAMICRON CORPORATION

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Hosokawa identifies its AS spiral offering, supporting subtype mapping rather than a sales weight. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Hosokawa identifies its AS spiral offering, supporting subtype mapping rather than a sales weight. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The AFG/TFG counterjet offerings support the retained Opposed-Jet commercial mapping. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The AFG/TFG counterjet offerings support the retained Opposed-Jet commercial mapping. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The manufacturer identifies Innovomizer as a mechanical ultrafine offering; ordinary impact equipment is not automatically included. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The manufacturer identifies Innovomizer as a mechanical ultrafine offering; ordinary impact equipment is not automatically included. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

24. Grinding Equipment Manufacturer Supplier Factory, Grinding System | Longly

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: LONGLY discloses current annual capacity above 2,000 equipment units and commercial wet-grinding offerings. Capacity is bridged through explicitly assumed timing, utilization and eligible-product factors; it is not reported 2025 stirred-mill shipments. ([longlymill.com](https://www.longlymill.com/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: LONGLY discloses current annual capacity above 2,000 equipment units and commercial wet-grinding offerings. Capacity is bridged through explicitly assumed timing, utilization and eligible-product factors; it is not reported 2025 stirred-mill shipments. ([longlymill.com](https://www.longlymill.com/))

25. Ultra-Fine Grinding - Hosokawa Micron Malaysia

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The inspected ultrafine portfolio identifies AWM-F table-roller equipment, supporting the qualifying Roller Mills boundary, not its assumed counts or prices. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The inspected ultrafine portfolio identifies AWM-F table-roller equipment, supporting the qualifying Roller Mills boundary, not its assumed counts or prices. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Super Orion is a marketed rotary ball-mill constituent of the combined rotary/planetary category. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Super Orion is a marketed rotary ball-mill constituent of the combined rotary/planetary category. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: MJT is explicitly listed as a target-type offering, supporting precedence of the named platform over overlapping generic jet terminology. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: MJT is explicitly listed as a target-type offering, supporting precedence of the named platform over overlapping generic jet terminology. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

26. Loop Jet Mill - Consistency. Compliance. Engineered.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The current named Loop Jet Mill listing establishes an offered commercial platform. It supports forecast category continuity, but does not disclose subtype revenue or prove 2025 sales. ([jetmillmfg.com](https://www.jetmillmfg.com/loop-jet-mill/))
27. SWECO Vibratory Grinding and Particle Size Reduction Equipment
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: SWECO markets Vibro-Energy grinding equipment with separate wet and wet/dry offerings. This supports commercial category and configuration mapping, not the modeled frequency of purchases. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: SWECO markets Vibro-Energy grinding equipment with separate wet and wet/dry offerings. This supports commercial category and configuration mapping, not the modeled frequency of purchases. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Named wet/dry models establish dual-state availability; they do not establish the exact supplied configuration or a market-wide value share. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Named wet/dry models establish dual-state availability; they do not establish the exact supplied configuration or a market-wide value share. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))
28. Fine-cutting mill with rotating classifying feature - the sensational new development!
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The September xx.xx 2014 own-product announcement establishes a pre-base-year SecoMy S cutting offering described for ultrafine commercial applications. It is category evidence, not annual equipment revenue. ([grinding.netzsch.com](https://grinding.netzsch.com/en/news/2014/fine-cutting-mill-with-rotating-classifying-feature-the-sensational-new-development))
29. NETZSCH SecoMy S - Precision Cutting Redefined!
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The August 2026 SecoMy S brochure confirms continuing commercial ultrafine-cutting positioning and system-supply availability. It supports category persistence, not the assumed forecast spending share. ([grinding.netzsch.com](https://grinding.netzsch.com/_Resources/Persistent/xx.xx/e/xx.xx/b/8e4b5adcfc16fcc2d83974f8080d614cce1a2c01/NETZSCH_Fine_Cutting_Mill_SecoMy_S_e.pdf))
30. Wet Milling and Dispersing Device - Star Burst - Sugino Corp.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: SUGINO's Star Burst portfolio identifies wet-jet equipment across research and production purchasing contexts. Only milling-attributable supply is included; adjacent droplet-only or dispersion activity is not automatically counted. ([suginocorp.com](https://www.suginocorp.com/star-burst/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: SUGINO's Star Burst portfolio identifies wet-jet equipment across research and production purchasing contexts. Only milling-attributable supply is included; adjacent droplet-only or dispersion activity is not automatically counted. ([suginocorp.com](https://www.suginocorp.com/star-burst/))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The wet-jet offering supports wet-state classification within the joint value model, not the total Wet Grinding share. ([suginocorp.com](https://www.suginocorp.com/star-burst/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The wet-jet offering supports wet-state classification within the joint value model, not the total Wet Grinding share. ([suginocorp.com](https://www.suginocorp.com/star-burst/))

31. IBU-tec | Mills - Milling Technology for Dry and Wet Grinding
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operator table separately lists two dry opposed-jet units. This is an installed-inventory observation, not a shipment or revenue ratio. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operator table separately lists two dry opposed-jet units. This is an installed-inventory observation, not a shipment or revenue ratio. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Three wet agitator-bead units are separately inventoried, supporting state-specific commercial classification without using their count as a market weight. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Three wet agitator-bead units are separately inventoried, supporting state-specific commercial classification without using their count as a market weight. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
32. Comminution - NTNU
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: NTNU separately records wet/dry capability for stirred and planetary equipment; the inventory is not a representative value-share dataset. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: NTNU separately records wet/dry capability for stirred and planetary equipment; the inventory is not a representative value-share dataset. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The planetary equipment is recorded as batch, supporting a laboratory batch context without assuming all laboratories are batch-only. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The planetary equipment is recorded as batch, supporting a laboratory batch context without assuming all laboratories are batch-only. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The laboratory jet rig is recorded as continuous, independently challenging equivalence between continuous mode and industrial scale. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The laboratory jet rig is recorded as continuous, independently challenging equivalence between continuous mode and industrial scale. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
33. Dry Batch Or Continuous Laboratory Mills - Union Process
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Union Process identifies SD-xx.xx as one laboratory offering for both batch and continuous service. Configuration-specific purchase inclusion and revenue are undisclosed. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Union Process identifies SD-xx.xx as one laboratory offering for both batch and continuous service. Configuration-specific purchase inclusion and revenue are undisclosed. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The same named offering advertises wet/dry capability, supporting a dual-state category premise rather than an observed adoption percentage. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The same named offering advertises wet/dry capability, supporting a dual-state category premise rather than an observed adoption percentage. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))

34. Retsch Contact & Services - Contact Partners Worldwide

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: RETSCH describes a network including daughter companies. Manufacturer affiliation, rather than contact location, informs direct-route attribution. ([retsch.com](https://www.retsch.com/contact-services/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: RETSCH describes a network including daughter companies. Manufacturer affiliation, rather than contact location, informs direct-route attribution. ([retsch.com](https://www.retsch.com/contact-services/))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The network also includes trained distributors, establishing a resale-access premise but not distributor ownership roles or annual sales weights. ([retsch.com](https://www.retsch.com/contact-services/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The network also includes trained distributors, establishing a resale-access premise but not distributor ownership roles or annual sales weights. ([retsch.com](https://www.retsch.com/contact-services/))

35. HOSOKAWA ALPINE Aktiengesellschaft - Conditions of Sale 371_00 EN

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Hosokawa requires company confirmation of representatives' transactions and makes contractual scope authoritative. The terms support agency-role attribution, not the assumed agent percentage. ([hosokawa-alpine.com](https://www.hosokawa-alpine.com/fileadmin/allgemein/Legal/AGB/AGB_Verkaufsbedingungen_en_371_00.pdf))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Hosokawa requires company confirmation of representatives' transactions and makes contractual scope authoritative. The terms support agency-role attribution, not the assumed agent percentage. ([hosokawa-alpine.com](https://www.hosokawa-alpine.com/fileadmin/allgemein/Legal/AGB/AGB_Verkaufsbedingungen_en_371_00.pdf))

36. UNSD - ISIC Rev.5, Class 4610: Wholesale on a Fee or Contract Basis

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: ISIC Rev.xx.xx class xx.xx defines fee/commission intermediation without ownership, supporting a non-title-taking agency numerator distinct from goods supplied on own account. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: ISIC Rev.xx.xx class xx.xx defines fee/commission intermediation without ownership, supporting a non-title-taking agency numerator distinct from goods supplied on own account. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Own-account wholesale is excluded from the agency class, supporting the reseller/agent partition without supplying ultrafine-mill channel shares. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own-account wholesale is excluded from the agency class, supporting the reseller/agent partition without supplying ultrafine-mill channel shares. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))

37. ITDI-PB-2024-057 - Supply, Delivery, Installation and Commissioning of Ultra-fine Friction Grinder

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The 2024 friction-grinder procurement had a PHP xx.xx budget and failed with no bidder. It establishes a configured-package spending ceiling and commercial category, not a sale or a shipment count. ([notices.philgeps.gov.ph](https://notices.philgeps.gov.ph/GEPSNONPILOT/Tender/PrintableBidNoticeAbstractUI.aspx?refid=xx.xx))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The 2024 friction-grinder procurement had a PHP xx.xx budget and failed with no bidder. It establishes a configured-package spending ceiling and commercial category, not a sale or a shipment count. ([notices.philgeps.gov.ph](https://notices.philgeps.gov.ph/GEPSNONPILOT/Tender/PrintableBidNoticeAbstractUI.aspx?refid=xx.xx))

38. Bangko Sentral ng Pilipinas - Balance of Payments Report, Q4 2024
· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The central bank reports a 2024 average of PHP xx.xx per USD. Dividing the failed PHP xx.xx procurement budget by this rate gives an approximately USD xx.xx comparison ceiling, not realized equipment revenue. ([bsp.gov.ph](https://www.bsp.gov.ph/Media_And_Research/Balance%20of%20Payments%20Report/2024/BOP_4qtr2024.pdf))
· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The central bank reports a 2024 average of PHP xx.xx per USD. Dividing the failed PHP xx.xx procurement budget by this rate gives an approximately USD xx.xx comparison ceiling, not realized equipment revenue. ([bsp.gov.ph](https://www.bsp.gov.ph/Media_And_Research/Balance%20of%20Payments%20Report/2024/BOP_4qtr2024.pdf))

17.3. Germany

Table 340. Germany Ultra Fine Grinding Mill Market Size, 2017-2040 (USD Million)

Country	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Germany	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 341. Germany Ultra Fine Grinding Mill Market Size, by Supply Scope, 2017-2040 (USD Million)

Supply Scope	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Integrated Milling Packages	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Standalone Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 342. Germany Ultra Fine Grinding Mill Market Size, by Mill Technology, 2017-2040 (USD Million)

Mill Technology	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Cutting Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Disc and Colloid Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Gas-Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mechanical Impact Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Media Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Roller Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wet-Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 343. Germany Ultra Fine Grinding Mill Market Size, by Media Mills, 2017-2040 (USD Million)

Media Mills	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Rotary and Planetary Ball Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Stirred Media Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Vibratory Media Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 344. Germany Ultra Fine Grinding Mill Market Size, by Gas-Jet Mills, 2017-2040 (USD Million)

Gas-Jet Mills	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Loop Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Opposed-Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Spiral Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Target Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 345. Germany Ultra Fine Grinding Mill Market Size, by Processed Material, 2017-2040 (USD Million)

Processed Material	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Biomass and Natural Ingredients	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Carbonaceous Materials	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Formulations and Composites	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Industrial Minerals	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Inorganic Chemicals, Ceramics, and Glass	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Metal Ores and Concentrates	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Metals and Alloys	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Organic Chemicals	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Polymers and Elastomers	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 346. Germany Ultra Fine Grinding Mill Market Size, by Buyer Industry, 2017-2040 (USD Million)

Buyer Industry	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Chemical and Fuel Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Electrical and Electronic Product Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Food, Beverage, and Feed Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Glass, Ceramics, and Construction Materials Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Materials Recovery and Recycling	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Metals and Fabricated Metal Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mining and Mineral Processing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Pharmaceutical Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Power and Heat Generation	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Research, Education, and Testing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Rubber and Plastics Product Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wood, Pulp, and Paper Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Others	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 347. Germany Ultra Fine Grinding Mill Market Size, by Deployment Scale, 2017-2040 (USD Million)

Deployment Scale	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Industrial Production	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Laboratory	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Pilot	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 348. Germany Ultra Fine Grinding Mill Market Size, by Sales Channel, 2017-2040 (USD Million)

Sales Channel	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Agent-Mediated Sales	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Independent Reseller Sales	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Manufacturer-Direct Sales	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 349. Germany Ultra Fine Grinding Mill Market Size, by Processing State, 2017-2040 (USD Million)

Processing State	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Dry Grinding	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wet and Dry Grinding	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wet Grinding	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 350. Germany Ultra Fine Grinding Mill Market Size, by Operating Mode, 2017-2040 (USD Million)

Operating Mode	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Batch	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Batch and Continuous	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Continuous	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Sources & Evidence

1. Hosokawa Micron - FY2025 Financial Results Presentation, November 25, 2025 (Japanese)
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; material attribution modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; material attribution modeled.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; establishment attribution modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; establishment attribution modeled.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; buyer attribution assumed.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; buyer attribution assumed.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; qualifying power attribution unverified.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; qualifying power attribution unverified.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; institutional attribution assumed.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; institutional attribution assumed.

2. Metso Receives Order for Grinding Mills to a Copper Project in Africa
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Approximately EUR xx.xx 2024 HIGmill order includes auxiliaries and services; a package-scale anchor, not recognized annual revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Approximately EUR xx.xx 2024 HIGmill order includes auxiliaries and services; a package-scale anchor, not recognized annual revenue.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The copper-project award establishes an ore/concentrate commercial purchasing context.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The copper-project award establishes an ore/concentrate commercial purchasing context.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The award concerns an African mining project; it does not disclose the global mining-buyer share.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The award concerns an African mining project; it does not disclose the global mining-buyer share.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Large industrial equipment procurement supports the production-scale category premise.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Large industrial equipment procurement supports the production-scale category premise.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The August xx.xx 2024 announcement records an approximately EUR xx.xx HIGmill order including auxiliaries and services. It anchors package-level commercial materiality, not a mill unit price or 2025 recognized revenue. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The August xx.xx 2024 announcement records an approximately EUR xx.xx HIGmill order including auxiliaries and services. It anchors package-level commercial materiality, not a mill unit price or 2025 recognized revenue. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The stirred-package order supports the Media Mills value-weight model and continuing commercial-demand premise, with order-to-revenue timing unresolved. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The stirred-package order supports the Media Mills value-weight model and continuing commercial-demand premise, with order-to-revenue timing unresolved. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
3. HIGmill Plant - Metso
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Standalone marketing terminology does not establish the study's Standalone Mills equipment scope.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Standalone marketing terminology does not establish the study's Standalone Mills equipment scope.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: HIGmill Plant includes pre-engineered auxiliary modules, supporting classification as an equipment package.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: HIGmill Plant includes pre-engineered auxiliary modules, supporting classification as an equipment package.

4. IsaMill - About, Technology Partnership and Engineering
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Delivery alternatives permit mill-only supply or additional auxiliary equipment; actual equipment scope determines attribution.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Delivery alternatives permit mill-only supply or additional auxiliary equipment; actual equipment scope determines attribution.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Modular auxiliary-inclusive and turnkey alternatives support differentiated package scope, without proving a global adoption percentage.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Modular auxiliary-inclusive and turnkey alternatives support differentiated package scope, without proving a global adoption percentage.
5. Commission Processing - NIPPON COKE & ENGINEERING CO., LTD.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Own commercial processing portfolio identifies glass, ceramics and inorganic materials; establishes material mapping, not equipment revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own commercial processing portfolio identifies glass, ceramics and inorganic materials; establishes material mapping, not equipment revenue.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Organic pigments are named commercial processing materials.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Organic pigments are named commercial processing materials.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Metal powders are named commercial processing materials.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Metal powders are named commercial processing materials.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Carbon is identified in the operator's commercial grinding portfolio.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Carbon is identified in the operator's commercial grinding portfolio.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Thermosetting resin supports a polymer-material category premise.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Thermosetting resin supports a polymer-material category premise.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Ink-related grinding establishes a commercial reference but does not resolve whole-formulation versus constituent duty.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Ink-related grinding establishes a commercial reference but does not resolve whole-formulation versus constituent duty.

6. Micronization / Grinding - A. Ebbecke Verfahrenstechnik AG
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Commercial contract-grinding coverage includes natural materials and food ingredients; processing fees are excluded from equipment value.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Commercial contract-grinding coverage includes natural materials and food ingredients; processing fees are excluded from equipment value.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Plastic granulates and resins establish material coverage, not downstream customers' equipment ownership.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Plastic granulates and resins establish material coverage, not downstream customers' equipment ownership.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operator-side food-processing reference supports establishment attribution rather than automatically assigning equipment to its customers.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operator-side food-processing reference supports establishment attribution rather than automatically assigning equipment to its customers.
7. Manufacturing Capabilities - Asbury Advanced Materials
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Own manufacturing disclosure identifies carbon-material grinding and micronization; supports the material-duty premise only.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own manufacturing disclosure identifies carbon-material grinding and micronization; supports the material-duty premise only.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Custom formulations and dispersions are commercial outputs, but joint whole-formulation milling remains unmeasured.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Custom formulations and dispersions are commercial outputs, but joint whole-formulation milling remains unmeasured.
8. Pyrum Innovations AG - Interim Group Report January 1 to June 30, 2025
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The purchaser's 2025 report records a grinding-plant installation associated with recovered carbon black; no downstream material revenue is counted.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The purchaser's 2025 report records a grinding-plant installation associated with recovered carbon black; no downstream material revenue is counted.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The report establishes an actual recovery-business equipment context, while the exact attributable mill expenditure remains undisclosed.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The report establishes an actual recovery-business equipment context, while the exact attributable mill expenditure remains undisclosed.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The disclosed commercial-site grinding installation supports Industrial Production classification.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The disclosed commercial-site grinding installation supports Industrial Production classification.

9. NRRI Advances Efficient Grinding Technology on the Iron Range
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The institution distinguishes a planned bench-scale purchase from its loaned pilot equipment; not a completed-sale census.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The institution distinguishes a planned bench-scale purchase from its loaned pilot equipment; not a completed-sale census.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The May xx.xx 2024 account identifies a loaned pilot stirred mill; unpaid placement is not counted as equipment-sale revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The May xx.xx 2024 account identifies a loaned pilot stirred mill; unpaid placement is not counted as equipment-sale revenue.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operating research institute is distinct from its mining clients, supporting buyer/material separation.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operating research institute is distinct from its mining clients, supporting buyer/material separation.
10. Planetary Ball Mill PM 100 - RETSCH
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The PM xx.xx is marketed as a benchtop instrument, supporting the small-laboratory pool classification without establishing sales weight.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The PM xx.xx is marketed as a benchtop instrument, supporting the small-laboratory pool classification without establishing sales weight.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The individual-instrument offering supports a narrower equipment-supply alternative; package incidence remains modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The individual-instrument offering supports a narrower equipment-supply alternative; package incidence remains modeled.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: PM xx.xx is a marketed benchtop planetary platform, supporting laboratory-category mapping rather than shipment or price weights. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: PM xx.xx is a marketed benchtop planetary platform, supporting laboratory-category mapping rather than shipment or price weights. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The product page advertises both dry and wet capability. Actual dual-state purchase inclusion remains an explicit model assumption. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The product page advertises both dry and wet capability. Actual dual-state purchase inclusion remains an explicit model assumption. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))

11. Jet Mill - Contract History CW2408170, CanadaBuys
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: A May xx.xx 2026 laboratory jet-mill award totals CAD xx.xx; a dated procurement check, not a 2025 shipment or global average price.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: A May xx.xx 2026 laboratory jet-mill award totals CAD xx.xx; a dated procurement check, not a 2025 shipment or global average price.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The record distinguishes Natural Resources Canada as buying organization from PSPC as contracting organization, supporting establishment attribution.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The record distinguishes Natural Resources Canada as buying organization from PSPC as contracting organization, supporting establishment attribution.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The jet-mill award totals CAD xx.xx and is dated May xx.xx 2026. It is a nearby-period laboratory purchasing comparator, not a 2025 recognized sale, and supplies neither a gas-jet subtype nor a definitive channel role. ([canadabuys.canada.ca](https://canadabuys.canada.ca/en/tender-opportunities/contract-history/cw2408170-xx.xx))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The jet-mill award totals CAD xx.xx and is dated May xx.xx 2026. It is a nearby-period laboratory purchasing comparator, not a 2025 recognized sale, and supplies neither a gas-jet subtype nor a definitive channel role. ([canadabuys.canada.ca](https://canadabuys.canada.ca/en/tender-opportunities/contract-history/cw2408170-xx.xx))
12. MFC Production Equipment - FiberLean
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The manufacturer's commercial offering targets pulp, paper and related establishments; it is not a measured industry sales share.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The manufacturer's commercial offering targets pulp, paper and related establishments; it is not a measured industry sales share.
13. Pulverizing Equipment - Coperion
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The broader portfolio names power-generation applications and separately lists ultrafine equipment; this limits, rather than verifies, the assumed qualifying power-buyer allocation.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The broader portfolio names power-generation applications and separately lists ultrafine equipment; this limits, rather than verifies, the assumed qualifying power-buyer allocation.
14. LG Energy Solution Releases 2025 Financial Results - January 29, 2026
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own 2025 revenue decline and dated 2026 capital-expenditure reduction target constrain battery-related equipment-adoption assumptions.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Existing-asset reuse strategy qualifies a direct downstream-demand-to-new-carbon-material-mill investment inference.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Buyer investment restraint constrains the relative application multiplier; upstream chemical attribution remains separately assumed.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own battery-manufacturer financial and investment plans provide a counter-test, not an ultrafine equipment purchasing total.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The January 2026 emphasis on reduced new investment qualifies automatic growth in broader equipment-package adoption.

15. UNSD Classification Detail - ISIC Rev.4, Class 3830: Materials Recovery
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The official classification distinguishes secondary-material recovery from manufacture of new final products; it supplies no equipment sales weight.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The official classification distinguishes secondary-material recovery from manufacture of new final products; it supplies no equipment sales weight.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Recovered-input use alone does not classify the equipment operator as a recovery establishment rather than a product manufacturer.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Recovered-input use alone does not classify the equipment operator as a recovery establishment rather than a product manufacturer.
16. Ultrafin Mill: Super Masscolloider, Masuko MKCA6-5J CE - University of Ljubljana
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The university inventories a laboratory ultrafine mill within wood science; the institutional operator is not a wood-products manufacturer.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The university inventories a laboratory ultrafine mill within wood science; the institutional operator is not a wood-products manufacturer.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The institutional inventory expressly identifies laboratory equipment, supporting deployment classification without establishing a purchase-year value.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The institutional inventory expressly identifies laboratory equipment, supporting deployment classification without establishing a purchase-year value.
17. Contract Manufacturing of Pharmaceuticals - YUKI GOSEI KOGYO CO., LTD.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operator distinguishes production jet mills from smaller equipment, supporting industrial deployment at a pharmaceutical contract manufacturer.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operator distinguishes production jet mills from smaller equipment, supporting industrial deployment at a pharmaceutical contract manufacturer.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The actual pharmaceutical manufacturing operator is distinct from customers outsourcing production; processing-service receipts remain excluded.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The actual pharmaceutical manufacturing operator is distinct from customers outsourcing production; processing-service receipts remain excluded.

18. Record year for Metso stirred mills as mining industry opts for energy-efficient comminution technology

- Evidence informing base-year allocation inputs; displayed values and growth are calculated: Metso reports more than twenty Vertimill sales in 2025 and approximately xx.xx cumulative stirred-mill deliveries. Broader application coverage prevents treating these as ultrafine-only annual shipments; they constrain the modeled stirred/mining allocation and forecast premise. ([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))
- Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Metso reports more than twenty Vertimill sales in 2025 and approximately xx.xx cumulative stirred-mill deliveries. Broader application coverage prevents treating these as ultrafine-only annual shipments; they constrain the modeled stirred/mining allocation and forecast premise. ([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))
- Evidence informing base-year allocation inputs; displayed values and growth are calculated: The disclosed stirred-equipment activity supports material Media Mills participation, not the final modeled parent share. ([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))
- Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The disclosed stirred-equipment activity supports material Media Mills participation, not the final modeled parent share. ([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))

19. Bühler strengthens its market position

- Evidence informing base-year allocation inputs; displayed values and growth are calculated: Bühler reports xx.xx% Grinding & Dispersing order growth in 2025 against a xx.xx% decline in broader Advanced Materials orders. This is a mixed commercial leading indicator, not observed market-share growth. ([buhlergroup.com](https://www.buhlergroup.com/global/en/media/media-releases/b%C3%BChler-strengthens-its-marketposition.html))
- Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Bühler reports xx.xx% Grinding & Dispersing order growth in 2025 against a xx.xx% decline in broader Advanced Materials orders. This is a mixed commercial leading indicator, not observed market-share growth. ([buhlergroup.com](https://www.buhlergroup.com/global/en/media/media-releases/b%C3%BChler-strengthens-its-marketposition.html))
- Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The disclosed battery-related and other application orders constrain differentiated Media Mills forecast assumptions without converting orders directly to annual equipment revenue. ([buhlergroup.com](https://www.buhlergroup.com/global/en/media/media-releases/b%C3%BChler-strengthens-its-marketposition.html))

20. Management Greetings | HOSOKAWAMICRON CORPORATION

- Evidence informing base-year allocation inputs; displayed values and growth are calculated: Hosokawa reports FY2025 net sales of JPY xx.xx, down xx.xx%, and orders down xx.xx%. The diversified-company result challenges uniform purchasing acceleration and constrains, rather than directly measures, technology-mix assumptions. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/ir/management_policy/management_greetings.html))
- Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Hosokawa reports FY2025 net sales of JPY xx.xx, down xx.xx%, and orders down xx.xx%. The diversified-company result challenges uniform purchasing acceleration and constrains, rather than directly measures, technology-mix assumptions. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/ir/management_policy/management_greetings.html))
- Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The same broader financial contraction is counterevidence to assuming uniform Media Mills growth across suppliers; no corporate revenue is assigned directly to the category. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/ir/management_policy/management_greetings.html))

21. Details of micromeritics | HOSOKAWAMICRON CORPORATION

- Evidence informing base-year allocation inputs; displayed values and growth are calculated: Hosokawa identifies its AS spiral offering, supporting subtype mapping rather than a sales weight. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))
- Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Hosokawa identifies its AS spiral offering, supporting subtype mapping rather than a sales weight. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))
- Evidence informing base-year allocation inputs; displayed values and growth are calculated: The AFG/TFG counterjet offerings support the retained Opposed-Jet commercial mapping. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))
- Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The AFG/TFG counterjet offerings support the retained Opposed-Jet commercial mapping. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))
- Evidence informing base-year allocation inputs; displayed values and growth are calculated: The manufacturer identifies Innovomizer as a mechanical ultrafine offering; ordinary impact equipment is not automatically included. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))
- Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The manufacturer identifies Innovomizer as a mechanical ultrafine offering; ordinary impact equipment is not automatically included. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

22. Grinding Equipment Manufacturer Supplier Factory, Grinding System | Longly

- Evidence informing base-year allocation inputs; displayed values and growth are calculated: LONGLY discloses current annual capacity above 2,000 equipment units and commercial wet-grinding offerings. Capacity is bridged through explicitly assumed timing, utilization and eligible-product factors; it is not reported 2025 stirred-mill shipments. ([longlymill.com](https://www.longlymill.com/))
- Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: LONGLY discloses current annual capacity above 2,000 equipment units and commercial wet-grinding offerings. Capacity is bridged through explicitly assumed timing, utilization and eligible-product factors; it is not reported 2025 stirred-mill shipments. ([longlymill.com](https://www.longlymill.com/))

23. Ultra-Fine Grinding - Hosokawa Micron Malaysia

- Evidence informing base-year allocation inputs; displayed values and growth are calculated: The inspected ultrafine portfolio identifies AWM-F table-roller equipment, supporting the qualifying Roller Mills boundary, not its assumed counts or prices. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))
- Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The inspected ultrafine portfolio identifies AWM-F table-roller equipment, supporting the qualifying Roller Mills boundary, not its assumed counts or prices. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))
- Evidence informing base-year allocation inputs; displayed values and growth are calculated: Super Orion is a marketed rotary ball-mill constituent of the combined rotary/planetary category. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))
- Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Super Orion is a marketed rotary ball-mill constituent of the combined rotary/planetary category. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))
- Evidence informing base-year allocation inputs; displayed values and growth are calculated: MJT is explicitly listed as a target-type offering, supporting precedence of the named platform over overlapping generic jet terminology. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))
- Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: MJT is explicitly listed as a target-type offering, supporting precedence of the named platform over overlapping generic jet terminology. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

24. Loop Jet Mill - Consistency. Compliance. Engineered.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The current named Loop Jet Mill listing establishes an offered commercial platform. It supports forecast category continuity, but does not disclose subtype revenue or prove 2025 sales. ([jetmillmfg.com](https://www.jetmillmfg.com/loop-jet-mill/))
25. SWECO Vibratory Grinding and Particle Size Reduction Equipment
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: SWECO markets Vibro-Energy grinding equipment with separate wet and wet/dry offerings. This supports commercial category and configuration mapping, not the modeled frequency of purchases. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: SWECO markets Vibro-Energy grinding equipment with separate wet and wet/dry offerings. This supports commercial category and configuration mapping, not the modeled frequency of purchases. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Named wet/dry models establish dual-state availability; they do not establish the exact supplied configuration or a market-wide value share. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Named wet/dry models establish dual-state availability; they do not establish the exact supplied configuration or a market-wide value share. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))
26. Fine-cutting mill with rotating classifying feature - the sensational new development!
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The September xx.xx 2014 own-product announcement establishes a pre-base-year SecoMy S cutting offering described for ultrafine commercial applications. It is category evidence, not annual equipment revenue. ([grinding.netzsch.com](https://grinding.netzsch.com/en/news/2014/fine-cutting-mill-with-rotating-classifying-feature-the-sensational-new-development))
27. NETZSCH SecoMy S - Precision Cutting Redefined!
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The August 2026 SecoMy S brochure confirms continuing commercial ultrafine-cutting positioning and system-supply availability. It supports category persistence, not the assumed forecast spending share. ([grinding.netzsch.com](https://grinding.netzsch.com/_Resources/Persistent/xx.xx/e/xx.xx/b/8e4b5adcfc16fcc2d83974f8080d614cce1a2c01/NETZSCH_Fine_Cutting_Mill_SecoMy_S_e.pdf))
28. Wet Milling and Dispersing Device - Star Burst - Sugino Corp.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: SUGINO's Star Burst portfolio identifies wet-jet equipment across research and production purchasing contexts. Only milling-attributable supply is included; adjacent droplet-only or dispersion activity is not automatically counted. ([suginocorp.com](https://www.suginocorp.com/star-burst/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: SUGINO's Star Burst portfolio identifies wet-jet equipment across research and production purchasing contexts. Only milling-attributable supply is included; adjacent droplet-only or dispersion activity is not automatically counted. ([suginocorp.com](https://www.suginocorp.com/star-burst/))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The wet-jet offering supports wet-state classification within the joint value model, not the total Wet Grinding share. ([suginocorp.com](https://www.suginocorp.com/star-burst/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The wet-jet offering supports wet-state classification within the joint value model, not the total Wet Grinding share. ([suginocorp.com](https://www.suginocorp.com/star-burst/))

29. IBU-tec | Mills - Milling Technology for Dry and Wet Grinding
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operator table separately lists two dry opposed-jet units. This is an installed-inventory observation, not a shipment or revenue ratio. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operator table separately lists two dry opposed-jet units. This is an installed-inventory observation, not a shipment or revenue ratio. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Three wet agitator-bead units are separately inventoried, supporting state-specific commercial classification without using their count as a market weight. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Three wet agitator-bead units are separately inventoried, supporting state-specific commercial classification without using their count as a market weight. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
30. Comminution - NTNU
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: NTNU separately records wet/dry capability for stirred and planetary equipment; the inventory is not a representative value-share dataset. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: NTNU separately records wet/dry capability for stirred and planetary equipment; the inventory is not a representative value-share dataset. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The planetary equipment is recorded as batch, supporting a laboratory batch context without assuming all laboratories are batch-only. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The planetary equipment is recorded as batch, supporting a laboratory batch context without assuming all laboratories are batch-only. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The laboratory jet rig is recorded as continuous, independently challenging equivalence between continuous mode and industrial scale. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The laboratory jet rig is recorded as continuous, independently challenging equivalence between continuous mode and industrial scale. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
31. Dry Batch Or Continuous Laboratory Mills - Union Process
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Union Process identifies SD-xx.xx as one laboratory offering for both batch and continuous service. Configuration-specific purchase inclusion and revenue are undisclosed. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Union Process identifies SD-xx.xx as one laboratory offering for both batch and continuous service. Configuration-specific purchase inclusion and revenue are undisclosed. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The same named offering advertises wet/dry capability, supporting a dual-state category premise rather than an observed adoption percentage. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The same named offering advertises wet/dry capability, supporting a dual-state category premise rather than an observed adoption percentage. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))

32. Retsch Contact & Services - Contact Partners Worldwide

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: RETSCH describes a network including daughter companies. Manufacturer affiliation, rather than contact location, informs direct-route attribution. ([retsch.com](https://www.retsch.com/contact-services/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: RETSCH describes a network including daughter companies. Manufacturer affiliation, rather than contact location, informs direct-route attribution. ([retsch.com](https://www.retsch.com/contact-services/))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The network also includes trained distributors, establishing a resale-access premise but not distributor ownership roles or annual sales weights. ([retsch.com](https://www.retsch.com/contact-services/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The network also includes trained distributors, establishing a resale-access premise but not distributor ownership roles or annual sales weights. ([retsch.com](https://www.retsch.com/contact-services/))

33. HOSOKAWA ALPINE Aktiengesellschaft - Conditions of Sale 371_00 EN

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Hosokawa requires company confirmation of representatives' transactions and makes contractual scope authoritative. The terms support agency-role attribution, not the assumed agent percentage. ([hosokawa-alpine.com](https://www.hosokawa-alpine.com/fileadmin/allgemein/Legal/AGB/AGB_Verkaufsbedingungen_en_371_00.pdf))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Hosokawa requires company confirmation of representatives' transactions and makes contractual scope authoritative. The terms support agency-role attribution, not the assumed agent percentage. ([hosokawa-alpine.com](https://www.hosokawa-alpine.com/fileadmin/allgemein/Legal/AGB/AGB_Verkaufsbedingungen_en_371_00.pdf))

34. UNSD - ISIC Rev.5, Class 4610: Wholesale on a Fee or Contract Basis

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: ISIC Rev.xx.xx class xx.xx defines fee/commission intermediation without ownership, supporting a non-title-taking agency numerator distinct from goods supplied on own account. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: ISIC Rev.xx.xx class xx.xx defines fee/commission intermediation without ownership, supporting a non-title-taking agency numerator distinct from goods supplied on own account. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Own-account wholesale is excluded from the agency class, supporting the reseller/agent partition without supplying ultrafine-mill channel shares. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own-account wholesale is excluded from the agency class, supporting the reseller/agent partition without supplying ultrafine-mill channel shares. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))

35. ITDI-PB-2024-057 - Supply, Delivery, Installation and Commissioning of Ultra-fine Friction Grinder

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The 2024 friction-grinder procurement had a PHP xx.xx budget and failed with no bidder. It establishes a configured-package spending ceiling and commercial category, not a sale or a shipment count. ([notices.philgeps.gov.ph](https://notices.philgeps.gov.ph/GEPSNONPILOT/Tender/PrintableBidNoticeAbstractUI.aspx?refid=xx.xx))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The 2024 friction-grinder procurement had a PHP xx.xx budget and failed with no bidder. It establishes a configured-package spending ceiling and commercial category, not a sale or a shipment count. ([notices.philgeps.gov.ph](https://notices.philgeps.gov.ph/GEPSNONPILOT/Tender/PrintableBidNoticeAbstractUI.aspx?refid=xx.xx))

36. Bangko Sentral ng Pilipinas - Balance of Payments Report, Q4 2024

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The central bank reports a 2024 average of PHP xx.xx per USD. Dividing the failed PHP xx.xx procurement budget by this rate gives an approximately USD xx.xx comparison ceiling, not realized equipment revenue. ([bsp.gov.ph](https://www.bsp.gov.ph/Media_And_Research/Balance%20of%20Payments%20Report/2024/BOP_4qtr2024.pdf))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The central bank reports a 2024 average of PHP xx.xx per USD. Dividing the failed PHP xx.xx procurement budget by this rate gives an approximately USD xx.xx comparison ceiling, not realized equipment revenue. ([bsp.gov.ph](https://www.bsp.gov.ph/Media_And_Research/Balance%20of%20Payments%20Report/2024/BOP_4qtr2024.pdf))

17.4. India

Table 351. India Ultra Fine Grinding Mill Market Size, 2017-2040 (USD Million)

Country	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
India	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 352. India Ultra Fine Grinding Mill Market Size, by Supply Scope, 2017-2040 (USD Million)

Supply Scope	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Integrated Milling Packages	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Standalone Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 353. India Ultra Fine Grinding Mill Market Size, by Mill Technology, 2017-2040 (USD Million)

Mill Technology	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Cutting Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Disc and Colloid Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Gas-Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mechanical Impact Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Media Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Roller Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wet-Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 354. India Ultra Fine Grinding Mill Market Size, by Media Mills, 2017-2040 (USD Million)

Media Mills	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Rotary and Planetary Ball Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Stirred Media Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Vibratory Media Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 355. India Ultra Fine Grinding Mill Market Size, by Gas-Jet Mills, 2017-2040 (USD Million)

Gas-Jet Mills	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Loop Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Opposed-Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Spiral Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Target Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 356. India Ultra Fine Grinding Mill Market Size, by Processed Material, 2017-2040 (USD Million)

Processed Material	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Biomass and Natural Ingredients	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Carbonaceous Materials	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Formulations and Composites	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Industrial Minerals	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Inorganic Chemicals, Ceramics, and Glass	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Metal Ores and Concentrates	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Metals and Alloys	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Organic Chemicals	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Polymers and Elastomers	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 357. India Ultra Fine Grinding Mill Market Size, by Buyer Industry, 2017-2040 (USD Million)

Buyer Industry	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Chemical and Fuel Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Electrical and Electronic Product Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Food, Beverage, and Feed Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Glass, Ceramics, and Construction Materials Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Materials Recovery and Recycling	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Metals and Fabricated Metal Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mining and Mineral Processing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Pharmaceutical Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Power and Heat Generation	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Research, Education, and Testing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Rubber and Plastics Product Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wood, Pulp, and Paper Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Others	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 358. India Ultra Fine Grinding Mill Market Size, by Deployment Scale, 2017-2040 (USD Million)

Deployment Scale	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Industrial Production	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Laboratory	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Pilot	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 359. India Ultra Fine Grinding Mill Market Size, by Sales Channel, 2017-2040 (USD Million)

Sales Channel	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Agent-Mediated Sales	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Independent Reseller Sales	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Manufacturer-Direct Sales	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 360. India Ultra Fine Grinding Mill Market Size, by Processing State, 2017-2040 (USD Million)

Processing State	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Dry Grinding	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wet and Dry Grinding	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wet Grinding	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 361. India Ultra Fine Grinding Mill Market Size, by Operating Mode, 2017-2040 (USD Million)

Operating Mode	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Batch	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Batch and Continuous	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Continuous	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Sources & Evidence

1. High Energy Planetary Ball Mill - IIT Bombay

   · Evidence informing base-year allocation inputs; displayed values and growth are calculated: The 2024 solicitation concerns one mill and requires two registration stages. It supports a purchaser-specific access constraint, not an award, national procurement conversion rate or forecast revenue.

   · Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The 2024 solicitation concerns one mill and requires two registration stages. It supports a purchaser-specific access constraint, not an award, national procurement conversion rate or forecast revenue.

2. Hosokawa Micron - FY2025 Financial Results Presentation, November 25, 2025 (Japanese)
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; material attribution modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; material attribution modeled.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; establishment attribution modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; establishment attribution modeled.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; buyer attribution assumed.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; buyer attribution assumed.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; qualifying power attribution unverified.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; qualifying power attribution unverified.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; institutional attribution assumed.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; institutional attribution assumed.

3. Metso Receives Order for Grinding Mills to a Copper Project in Africa
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Approximately EUR xx.xx 2024 HIGmill order includes auxiliaries and services; a package-scale anchor, not recognized annual revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Approximately EUR xx.xx 2024 HIGmill order includes auxiliaries and services; a package-scale anchor, not recognized annual revenue.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The copper-project award establishes an ore/concentrate commercial purchasing context.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The copper-project award establishes an ore/concentrate commercial purchasing context.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The award concerns an African mining project; it does not disclose the global mining-buyer share.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The award concerns an African mining project; it does not disclose the global mining-buyer share.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Large industrial equipment procurement supports the production-scale category premise.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Large industrial equipment procurement supports the production-scale category premise.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The August xx.xx 2024 announcement records an approximately EUR xx.xx HIGmill order including auxiliaries and services. It anchors package-level commercial materiality, not a mill unit price or 2025 recognized revenue. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The August xx.xx 2024 announcement records an approximately EUR xx.xx HIGmill order including auxiliaries and services. It anchors package-level commercial materiality, not a mill unit price or 2025 recognized revenue. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The stirred-package order supports the Media Mills value-weight model and continuing commercial-demand premise, with order-to-revenue timing unresolved. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The stirred-package order supports the Media Mills value-weight model and continuing commercial-demand premise, with order-to-revenue timing unresolved. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
4. HIGmill Plant - Metso
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Standalone marketing terminology does not establish the study's Standalone Mills equipment scope.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Standalone marketing terminology does not establish the study's Standalone Mills equipment scope.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: HIGmill Plant includes pre-engineered auxiliary modules, supporting classification as an equipment package.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: HIGmill Plant includes pre-engineered auxiliary modules, supporting classification as an equipment package.

5. IsaMill - About, Technology Partnership and Engineering
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Delivery alternatives permit mill-only supply or additional auxiliary equipment; actual equipment scope determines attribution.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Delivery alternatives permit mill-only supply or additional auxiliary equipment; actual equipment scope determines attribution.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Modular auxiliary-inclusive and turnkey alternatives support differentiated package scope, without proving a global adoption percentage.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Modular auxiliary-inclusive and turnkey alternatives support differentiated package scope, without proving a global adoption percentage.
6. Commission Processing - NIPPON COKE & ENGINEERING CO., LTD.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Own commercial processing portfolio identifies glass, ceramics and inorganic materials; establishes material mapping, not equipment revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own commercial processing portfolio identifies glass, ceramics and inorganic materials; establishes material mapping, not equipment revenue.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Organic pigments are named commercial processing materials.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Organic pigments are named commercial processing materials.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Metal powders are named commercial processing materials.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Metal powders are named commercial processing materials.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Carbon is identified in the operator's commercial grinding portfolio.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Carbon is identified in the operator's commercial grinding portfolio.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Thermosetting resin supports a polymer-material category premise.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Thermosetting resin supports a polymer-material category premise.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Ink-related grinding establishes a commercial reference but does not resolve whole-formulation versus constituent duty.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Ink-related grinding establishes a commercial reference but does not resolve whole-formulation versus constituent duty.

7. Micronization / Grinding - A. Ebbecke Verfahrenstechnik AG
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Commercial contract-grinding coverage includes natural materials and food ingredients; processing fees are excluded from equipment value.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Commercial contract-grinding coverage includes natural materials and food ingredients; processing fees are excluded from equipment value.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Plastic granulates and resins establish material coverage, not downstream customers' equipment ownership.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Plastic granulates and resins establish material coverage, not downstream customers' equipment ownership.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operator-side food-processing reference supports establishment attribution rather than automatically assigning equipment to its customers.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operator-side food-processing reference supports establishment attribution rather than automatically assigning equipment to its customers.
8. Manufacturing Capabilities - Asbury Advanced Materials
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Own manufacturing disclosure identifies carbon-material grinding and micronization; supports the material-duty premise only.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own manufacturing disclosure identifies carbon-material grinding and micronization; supports the material-duty premise only.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Custom formulations and dispersions are commercial outputs, but joint whole-formulation milling remains unmeasured.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Custom formulations and dispersions are commercial outputs, but joint whole-formulation milling remains unmeasured.
9. Pyrum Innovations AG - Interim Group Report January 1 to June 30, 2025
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The purchaser's 2025 report records a grinding-plant installation associated with recovered carbon black; no downstream material revenue is counted.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The purchaser's 2025 report records a grinding-plant installation associated with recovered carbon black; no downstream material revenue is counted.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The report establishes an actual recovery-business equipment context, while the exact attributable mill expenditure remains undisclosed.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The report establishes an actual recovery-business equipment context, while the exact attributable mill expenditure remains undisclosed.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The disclosed commercial-site grinding installation supports Industrial Production classification.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The disclosed commercial-site grinding installation supports Industrial Production classification.

10. NRRI Advances Efficient Grinding Technology on the Iron Range
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The institution distinguishes a planned bench-scale purchase from its loaned pilot equipment; not a completed-sale census.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The institution distinguishes a planned bench-scale purchase from its loaned pilot equipment; not a completed-sale census.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The May xx.xx 2024 account identifies a loaned pilot stirred mill; unpaid placement is not counted as equipment-sale revenue.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The May xx.xx 2024 account identifies a loaned pilot stirred mill; unpaid placement is not counted as equipment-sale revenue.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operating research institute is distinct from its mining clients, supporting buyer/material separation.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operating research institute is distinct from its mining clients, supporting buyer/material separation.
11. Planetary Ball Mill PM 100 - RETSCH
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The PM xx.xx is marketed as a benchtop instrument, supporting the small-laboratory pool classification without establishing sales weight.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The PM xx.xx is marketed as a benchtop instrument, supporting the small-laboratory pool classification without establishing sales weight.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The individual-instrument offering supports a narrower equipment-supply alternative; package incidence remains modeled.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The individual-instrument offering supports a narrower equipment-supply alternative; package incidence remains modeled.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: PM xx.xx is a marketed benchtop planetary platform, supporting laboratory-category mapping rather than shipment or price weights. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: PM xx.xx is a marketed benchtop planetary platform, supporting laboratory-category mapping rather than shipment or price weights. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The product page advertises both dry and wet capability. Actual dual-state purchase inclusion remains an explicit model assumption. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The product page advertises both dry and wet capability. Actual dual-state purchase inclusion remains an explicit model assumption. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))

12. Jet Mill - Contract History CW2408170, CanadaBuys
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: A May xx.xx 2026 laboratory jet-mill award totals CAD xx.xx; a dated procurement check, not a 2025 shipment or global average price.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: A May xx.xx 2026 laboratory jet-mill award totals CAD xx.xx; a dated procurement check, not a 2025 shipment or global average price.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The record distinguishes Natural Resources Canada as buying organization from PSPC as contracting organization, supporting establishment attribution.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The record distinguishes Natural Resources Canada as buying organization from PSPC as contracting organization, supporting establishment attribution.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The jet-mill award totals CAD xx.xx and is dated May xx.xx 2026. It is a nearby-period laboratory purchasing comparator, not a 2025 recognized sale, and supplies neither a gas-jet subtype nor a definitive channel role. ([canadabuys.canada.ca](https://canadabuys.canada.ca/en/tender-opportunities/contract-history/cw2408170-xx.xx))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The jet-mill award totals CAD xx.xx and is dated May xx.xx 2026. It is a nearby-period laboratory purchasing comparator, not a 2025 recognized sale, and supplies neither a gas-jet subtype nor a definitive channel role. ([canadabuys.canada.ca](https://canadabuys.canada.ca/en/tender-opportunities/contract-history/cw2408170-xx.xx))
13. MFC Production Equipment - FiberLean
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The manufacturer's commercial offering targets pulp, paper and related establishments; it is not a measured industry sales share.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The manufacturer's commercial offering targets pulp, paper and related establishments; it is not a measured industry sales share.
14. Pulverizing Equipment - Coperion
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The broader portfolio names power-generation applications and separately lists ultrafine equipment; this limits, rather than verifies, the assumed qualifying power-buyer allocation.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The broader portfolio names power-generation applications and separately lists ultrafine equipment; this limits, rather than verifies, the assumed qualifying power-buyer allocation.
15. LG Energy Solution Releases 2025 Financial Results - January 29, 2026
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own 2025 revenue decline and dated 2026 capital-expenditure reduction target constrain battery-related equipment-adoption assumptions.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Existing-asset reuse strategy qualifies a direct downstream-demand-to-new-carbon-material-mill investment inference.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Buyer investment restraint constrains the relative application multiplier; upstream chemical attribution remains separately assumed.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own battery-manufacturer financial and investment plans provide a counter-test, not an ultrafine equipment purchasing total.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The January 2026 emphasis on reduced new investment qualifies automatic growth in broader equipment-package adoption.

16. UNSD Classification Detail - ISIC Rev.4, Class 3830: Materials Recovery
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The official classification distinguishes secondary-material recovery from manufacture of new final products; it supplies no equipment sales weight.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The official classification distinguishes secondary-material recovery from manufacture of new final products; it supplies no equipment sales weight.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Recovered-input use alone does not classify the equipment operator as a recovery establishment rather than a product manufacturer.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Recovered-input use alone does not classify the equipment operator as a recovery establishment rather than a product manufacturer.
17. Ultrafin Mill: Super Masscolloider, Masuko MKCA6-5J CE - University of Ljubljana
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The university inventories a laboratory ultrafine mill within wood science; the institutional operator is not a wood-products manufacturer.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The university inventories a laboratory ultrafine mill within wood science; the institutional operator is not a wood-products manufacturer.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The institutional inventory expressly identifies laboratory equipment, supporting deployment classification without establishing a purchase-year value.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The institutional inventory expressly identifies laboratory equipment, supporting deployment classification without establishing a purchase-year value.
18. Contract Manufacturing of Pharmaceuticals - YUKI GOSEI KOGYO CO., LTD.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operator distinguishes production jet mills from smaller equipment, supporting industrial deployment at a pharmaceutical contract manufacturer.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operator distinguishes production jet mills from smaller equipment, supporting industrial deployment at a pharmaceutical contract manufacturer.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The actual pharmaceutical manufacturing operator is distinct from customers outsourcing production; processing-service receipts remain excluded.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The actual pharmaceutical manufacturing operator is distinct from customers outsourcing production; processing-service receipts remain excluded.

19. Record year for Metso stirred mills as mining industry opts for energy-efficient comminution technology

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Metso reports more than twenty Vertimill sales in 2025 and approximately xx.xx cumulative stirred-mill deliveries. Broader application coverage prevents treating these as ultrafine-only annual shipments; they constrain the modeled stirred/mining allocation and forecast premise.
([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Metso reports more than twenty Vertimill sales in 2025 and approximately xx.xx cumulative stirred-mill deliveries. Broader application coverage prevents treating these as ultrafine-only annual shipments; they constrain the modeled stirred/mining allocation and forecast premise.
([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The disclosed stirred-equipment activity supports material Media Mills participation, not the final modeled parent share.
([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The disclosed stirred-equipment activity supports material Media Mills participation, not the final modeled parent share.
([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))

20. Bühler strengthens its market position

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Bühler reports xx.xx% Grinding & Dispersing order growth in 2025 against a xx.xx% decline in broader Advanced Materials orders. This is a mixed commercial leading indicator, not observed market-share growth.
([buhlergroup.com](https://www.buhlergroup.com/global/en/media/media-releases/b%C3%BChler-strengthens-its-marketposition.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Bühler reports xx.xx% Grinding & Dispersing order growth in 2025 against a xx.xx% decline in broader Advanced Materials orders. This is a mixed commercial leading indicator, not observed market-share growth.
([buhlergroup.com](https://www.buhlergroup.com/global/en/media/media-releases/b%C3%BChler-strengthens-its-marketposition.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The disclosed battery-related and other application orders constrain differentiated Media Mills forecast assumptions without converting orders directly to annual equipment revenue.
([buhlergroup.com](https://www.buhlergroup.com/global/en/media/media-releases/b%C3%BChler-strengthens-its-marketposition.html))

21. Management Greetings | HOSOKAWAMICRON CORPORATION

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Hosokawa reports FY2025 net sales of JPY xx.xx, down xx.xx%, and orders down xx.xx%. The diversified-company result challenges uniform purchasing acceleration and constrains, rather than directly measures, technology-mix assumptions.
([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/ir/management_policy/management_greetings.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Hosokawa reports FY2025 net sales of JPY xx.xx, down xx.xx%, and orders down xx.xx%. The diversified-company result challenges uniform purchasing acceleration and constrains, rather than directly measures, technology-mix assumptions.
([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/ir/management_policy/management_greetings.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The same broader financial contraction is counterevidence to assuming uniform Media Mills growth across suppliers; no corporate revenue is assigned directly to the category.
([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/ir/management_policy/management_greetings.html))

22. Details of micromeritics | HOSOKAWAMICRON CORPORATION

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Hosokawa identifies its AS spiral offering, supporting subtype mapping rather than a sales weight. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Hosokawa identifies its AS spiral offering, supporting subtype mapping rather than a sales weight. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The AFG/TFG counterjet offerings support the retained Opposed-Jet commercial mapping. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The AFG/TFG counterjet offerings support the retained Opposed-Jet commercial mapping. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The manufacturer identifies Innovomizer as a mechanical ultrafine offering; ordinary impact equipment is not automatically included. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The manufacturer identifies Innovomizer as a mechanical ultrafine offering; ordinary impact equipment is not automatically included. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

23. Grinding Equipment Manufacturer Supplier Factory, Grinding System | Longly

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: LONGLY discloses current annual capacity above 2,000 equipment units and commercial wet-grinding offerings. Capacity is bridged through explicitly assumed timing, utilization and eligible-product factors; it is not reported 2025 stirred-mill shipments. ([longlymill.com](https://www.longlymill.com/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: LONGLY discloses current annual capacity above 2,000 equipment units and commercial wet-grinding offerings. Capacity is bridged through explicitly assumed timing, utilization and eligible-product factors; it is not reported 2025 stirred-mill shipments. ([longlymill.com](https://www.longlymill.com/))

24. Ultra-Fine Grinding - Hosokawa Micron Malaysia

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The inspected ultrafine portfolio identifies AWM-F table-roller equipment, supporting the qualifying Roller Mills boundary, not its assumed counts or prices. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The inspected ultrafine portfolio identifies AWM-F table-roller equipment, supporting the qualifying Roller Mills boundary, not its assumed counts or prices. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Super Orion is a marketed rotary ball-mill constituent of the combined rotary/planetary category. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Super Orion is a marketed rotary ball-mill constituent of the combined rotary/planetary category. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: MJT is explicitly listed as a target-type offering, supporting precedence of the named platform over overlapping generic jet terminology. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: MJT is explicitly listed as a target-type offering, supporting precedence of the named platform over overlapping generic jet terminology. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

25. Loop Jet Mill - Consistency. Compliance. Engineered.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The current named Loop Jet Mill listing establishes an offered commercial platform. It supports forecast category continuity, but does not disclose subtype revenue or prove 2025 sales. ([jetmillmfg.com](https://www.jetmillmfg.com/loop-jet-mill/))
26. SWECO Vibratory Grinding and Particle Size Reduction Equipment
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: SWECO markets Vibro-Energy grinding equipment with separate wet and wet/dry offerings. This supports commercial category and configuration mapping, not the modeled frequency of purchases. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: SWECO markets Vibro-Energy grinding equipment with separate wet and wet/dry offerings. This supports commercial category and configuration mapping, not the modeled frequency of purchases. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Named wet/dry models establish dual-state availability; they do not establish the exact supplied configuration or a market-wide value share. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Named wet/dry models establish dual-state availability; they do not establish the exact supplied configuration or a market-wide value share. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))
27. Fine-cutting mill with rotating classifying feature - the sensational new development!
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The September xx.xx 2014 own-product announcement establishes a pre-base-year SecoMy S cutting offering described for ultrafine commercial applications. It is category evidence, not annual equipment revenue. ([grinding.netzsch.com](https://grinding.netzsch.com/en/news/2014/fine-cutting-mill-with-rotating-classifying-feature-the-sensational-new-development))
28. NETZSCH SecoMy S - Precision Cutting Redefined!
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The August 2026 SecoMy S brochure confirms continuing commercial ultrafine-cutting positioning and system-supply availability. It supports category persistence, not the assumed forecast spending share. ([grinding.netzsch.com](https://grinding.netzsch.com/_Resources/Persistent/xx.xx/e/xx.xx/b/8e4b5adcfc16fcc2d83974f8080d614cce1a2c01/NETZSCH_Fine_Cutting_Mill_SecoMy_S_e.pdf))
29. Wet Milling and Dispersing Device - Star Burst - Sugino Corp.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: SUGINO's Star Burst portfolio identifies wet-jet equipment across research and production purchasing contexts. Only milling-attributable supply is included; adjacent droplet-only or dispersion activity is not automatically counted. ([suginocorp.com](https://www.suginocorp.com/star-burst/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: SUGINO's Star Burst portfolio identifies wet-jet equipment across research and production purchasing contexts. Only milling-attributable supply is included; adjacent droplet-only or dispersion activity is not automatically counted. ([suginocorp.com](https://www.suginocorp.com/star-burst/))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The wet-jet offering supports wet-state classification within the joint value model, not the total Wet Grinding share. ([suginocorp.com](https://www.suginocorp.com/star-burst/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The wet-jet offering supports wet-state classification within the joint value model, not the total Wet Grinding share. ([suginocorp.com](https://www.suginocorp.com/star-burst/))

30. IBU-tec | Mills - Milling Technology for Dry and Wet Grinding
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operator table separately lists two dry opposed-jet units. This is an installed-inventory observation, not a shipment or revenue ratio. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operator table separately lists two dry opposed-jet units. This is an installed-inventory observation, not a shipment or revenue ratio. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Three wet agitator-bead units are separately inventoried, supporting state-specific commercial classification without using their count as a market weight. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Three wet agitator-bead units are separately inventoried, supporting state-specific commercial classification without using their count as a market weight. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
31. Comminution - NTNU
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: NTNU separately records wet/dry capability for stirred and planetary equipment; the inventory is not a representative value-share dataset. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: NTNU separately records wet/dry capability for stirred and planetary equipment; the inventory is not a representative value-share dataset. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The planetary equipment is recorded as batch, supporting a laboratory batch context without assuming all laboratories are batch-only. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The planetary equipment is recorded as batch, supporting a laboratory batch context without assuming all laboratories are batch-only. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The laboratory jet rig is recorded as continuous, independently challenging equivalence between continuous mode and industrial scale. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The laboratory jet rig is recorded as continuous, independently challenging equivalence between continuous mode and industrial scale. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
32. Dry Batch Or Continuous Laboratory Mills - Union Process
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Union Process identifies SD-xx.xx as one laboratory offering for both batch and continuous service. Configuration-specific purchase inclusion and revenue are undisclosed. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Union Process identifies SD-xx.xx as one laboratory offering for both batch and continuous service. Configuration-specific purchase inclusion and revenue are undisclosed. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The same named offering advertises wet/dry capability, supporting a dual-state category premise rather than an observed adoption percentage. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The same named offering advertises wet/dry capability, supporting a dual-state category premise rather than an observed adoption percentage. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))

33. Retsch Contact & Services - Contact Partners Worldwide

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: RETSCH describes a network including daughter companies. Manufacturer affiliation, rather than contact location, informs direct-route attribution. ([retsch.com](https://www.retsch.com/contact-services/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: RETSCH describes a network including daughter companies. Manufacturer affiliation, rather than contact location, informs direct-route attribution. ([retsch.com](https://www.retsch.com/contact-services/))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The network also includes trained distributors, establishing a resale-access premise but not distributor ownership roles or annual sales weights. ([retsch.com](https://www.retsch.com/contact-services/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The network also includes trained distributors, establishing a resale-access premise but not distributor ownership roles or annual sales weights. ([retsch.com](https://www.retsch.com/contact-services/))

34. HOSOKAWA ALPINE Aktiengesellschaft - Conditions of Sale 371_00 EN

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Hosokawa requires company confirmation of representatives' transactions and makes contractual scope authoritative. The terms support agency-role attribution, not the assumed agent percentage. ([hosokawa-alpine.com](https://www.hosokawa-alpine.com/fileadmin/allgemein/Legal/AGB/AGB_Verkaufsbedingungen_en_371_00.pdf))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Hosokawa requires company confirmation of representatives' transactions and makes contractual scope authoritative. The terms support agency-role attribution, not the assumed agent percentage. ([hosokawa-alpine.com](https://www.hosokawa-alpine.com/fileadmin/allgemein/Legal/AGB/AGB_Verkaufsbedingungen_en_371_00.pdf))

35. UNSD - ISIC Rev.5, Class 4610: Wholesale on a Fee or Contract Basis

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: ISIC Rev.xx.xx class xx.xx defines fee/commission intermediation without ownership, supporting a non-title-taking agency numerator distinct from goods supplied on own account. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: ISIC Rev.xx.xx class xx.xx defines fee/commission intermediation without ownership, supporting a non-title-taking agency numerator distinct from goods supplied on own account. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Own-account wholesale is excluded from the agency class, supporting the reseller/agent partition without supplying ultrafine-mill channel shares. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own-account wholesale is excluded from the agency class, supporting the reseller/agent partition without supplying ultrafine-mill channel shares. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))

36. ITDI-PB-2024-057 - Supply, Delivery, Installation and Commissioning of Ultra-fine Friction Grinder

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The 2024 friction-grinder procurement had a PHP xx.xx budget and failed with no bidder. It establishes a configured-package spending ceiling and commercial category, not a sale or a shipment count. ([notices.philgeps.gov.ph](https://notices.philgeps.gov.ph/GEPSNONPILOT/Tender/PrintableBidNoticeAbstractUI.aspx?refid=xx.xx))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The 2024 friction-grinder procurement had a PHP xx.xx budget and failed with no bidder. It establishes a configured-package spending ceiling and commercial category, not a sale or a shipment count. ([notices.philgeps.gov.ph](https://notices.philgeps.gov.ph/GEPSNONPILOT/Tender/PrintableBidNoticeAbstractUI.aspx?refid=xx.xx))

37. Bangko Sentral ng Pilipinas - Balance of Payments Report, Q4 2024

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The central bank reports a 2024 average of PHP xx.xx per USD. Dividing the failed PHP xx.xx procurement budget by this rate gives an approximately USD xx.xx comparison ceiling, not realized equipment revenue. ([bsp.gov.ph](https://www.bsp.gov.ph/Media_And_Research/Balance%20of%20Payments%20Report/2024/BOP_4qtr2024.pdf))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The central bank reports a 2024 average of PHP xx.xx per USD. Dividing the failed PHP xx.xx procurement budget by this rate gives an approximately USD xx.xx comparison ceiling, not realized equipment revenue. ([bsp.gov.ph](https://www.bsp.gov.ph/Media_And_Research/Balance%20of%20Payments%20Report/2024/BOP_4qtr2024.pdf))

17.5. Japan

Table 362. Japan Ultra Fine Grinding Mill Market Size, 2017-2040 (USD Million)

Country	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Japan	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 363. Japan Ultra Fine Grinding Mill Market Size, by Supply Scope, 2017-2040 (USD Million)

Supply Scope	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Integrated Milling Packages	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Standalone Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 364. Japan Ultra Fine Grinding Mill Market Size, by Mill Technology, 2017-2040 (USD Million)

Mill Technology	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Cutting Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Disc and Colloid Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Gas-Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mechanical Impact Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Media Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Roller Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wet-Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 365. Japan Ultra Fine Grinding Mill Market Size, by Media Mills, 2017-2040 (USD Million)

Media Mills	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Rotary and Planetary Ball Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Stirred Media Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Vibratory Media Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 366. Japan Ultra Fine Grinding Mill Market Size, by Gas-Jet Mills, 2017-2040 (USD Million)

Gas-Jet Mills	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Loop Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Opposed-Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Spiral Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Target Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 367. Japan Ultra Fine Grinding Mill Market Size, by Processed Material, 2017-2040 (USD Million)

Processed Material	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Biomass and Natural Ingredients	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Carbonaceous Materials	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Formulations and Composites	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Industrial Minerals	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Inorganic Chemicals, Ceramics, and Glass	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Metal Ores and Concentrates	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Metals and Alloys	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Organic Chemicals	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Polymers and Elastomers	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 368. Japan Ultra Fine Grinding Mill Market Size, by Buyer Industry, 2017-2040 (USD Million)

Buyer Industry	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Chemical and Fuel Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Electrical and Electronic Product Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Food, Beverage, and Feed Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Glass, Ceramics, and Construction Materials Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Materials Recovery and Recycling	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Metals and Fabricated Metal Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mining and Mineral Processing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Pharmaceutical Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Power and Heat Generation	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Research, Education, and Testing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Rubber and Plastics Product Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wood, Pulp, and Paper Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 369. Japan Ultra Fine Grinding Mill Market Size, by Deployment Scale, 2017-2040 (USD Million)

Deployment Scale	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Industrial Production	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Laboratory	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Pilot	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 370. Japan Ultra Fine Grinding Mill Market Size, by Sales Channel, 2017-2040 (USD Million)

Sales Channel	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Agent-Mediated Sales	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Independent Reseller Sales	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Manufacturer-Direct Sales	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 371. Japan Ultra Fine Grinding Mill Market Size, by Processing State, 2017-2040 (USD Million)

Processing State	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Dry Grinding	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wet and Dry Grinding	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wet Grinding	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 372. Japan Ultra Fine Grinding Mill Market Size, by Operating Mode, 2017-2040 (USD Million)

Operating Mode	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Batch	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Batch and Continuous	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Continuous	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Sources & Evidence

1. Hosokawa Micron - FY2025 Financial Results Presentation, November 25, 2025 (Japanese)
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; material attribution modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; material attribution modeled.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; establishment attribution modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; establishment attribution modeled.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; buyer attribution assumed.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; buyer attribution assumed.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; qualifying power attribution unverified.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; qualifying power attribution unverified.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; institutional attribution assumed.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; institutional attribution assumed.

2. Metso Receives Order for Grinding Mills to a Copper Project in Africa
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Approximately EUR xx.xx 2024 HIGmill order includes auxiliaries and services; a package-scale anchor, not recognized annual revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Approximately EUR xx.xx 2024 HIGmill order includes auxiliaries and services; a package-scale anchor, not recognized annual revenue.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The copper-project award establishes an ore/concentrate commercial purchasing context.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The copper-project award establishes an ore/concentrate commercial purchasing context.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The award concerns an African mining project; it does not disclose the global mining-buyer share.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The award concerns an African mining project; it does not disclose the global mining-buyer share.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Large industrial equipment procurement supports the production-scale category premise.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Large industrial equipment procurement supports the production-scale category premise.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The August xx.xx 2024 announcement records an approximately EUR xx.xx HIGmill order including auxiliaries and services. It anchors package-level commercial materiality, not a mill unit price or 2025 recognized revenue. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The August xx.xx 2024 announcement records an approximately EUR xx.xx HIGmill order including auxiliaries and services. It anchors package-level commercial materiality, not a mill unit price or 2025 recognized revenue. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The stirred-package order supports the Media Mills value-weight model and continuing commercial-demand premise, with order-to-revenue timing unresolved. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The stirred-package order supports the Media Mills value-weight model and continuing commercial-demand premise, with order-to-revenue timing unresolved. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
3. HIGmill Plant - Metso
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Standalone marketing terminology does not establish the study's Standalone Mills equipment scope.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Standalone marketing terminology does not establish the study's Standalone Mills equipment scope.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: HIGmill Plant includes pre-engineered auxiliary modules, supporting classification as an equipment package.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: HIGmill Plant includes pre-engineered auxiliary modules, supporting classification as an equipment package.

4. IsaMill - About, Technology Partnership and Engineering
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Delivery alternatives permit mill-only supply or additional auxiliary equipment; actual equipment scope determines attribution.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Delivery alternatives permit mill-only supply or additional auxiliary equipment; actual equipment scope determines attribution.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Modular auxiliary-inclusive and turnkey alternatives support differentiated package scope, without proving a global adoption percentage.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Modular auxiliary-inclusive and turnkey alternatives support differentiated package scope, without proving a global adoption percentage.
5. Commission Processing - NIPPON COKE & ENGINEERING CO., LTD.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Own commercial processing portfolio identifies glass, ceramics and inorganic materials; establishes material mapping, not equipment revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own commercial processing portfolio identifies glass, ceramics and inorganic materials; establishes material mapping, not equipment revenue.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Organic pigments are named commercial processing materials.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Organic pigments are named commercial processing materials.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Metal powders are named commercial processing materials.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Metal powders are named commercial processing materials.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Carbon is identified in the operator's commercial grinding portfolio.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Carbon is identified in the operator's commercial grinding portfolio.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Thermosetting resin supports a polymer-material category premise.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Thermosetting resin supports a polymer-material category premise.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Ink-related grinding establishes a commercial reference but does not resolve whole-formulation versus constituent duty.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Ink-related grinding establishes a commercial reference but does not resolve whole-formulation versus constituent duty.

6. Micronization / Grinding - A. Ebbecke Verfahrenstechnik AG
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Commercial contract-grinding coverage includes natural materials and food ingredients; processing fees are excluded from equipment value.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Commercial contract-grinding coverage includes natural materials and food ingredients; processing fees are excluded from equipment value.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Plastic granulates and resins establish material coverage, not downstream customers' equipment ownership.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Plastic granulates and resins establish material coverage, not downstream customers' equipment ownership.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operator-side food-processing reference supports establishment attribution rather than automatically assigning equipment to its customers.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operator-side food-processing reference supports establishment attribution rather than automatically assigning equipment to its customers.
7. Manufacturing Capabilities - Asbury Advanced Materials
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Own manufacturing disclosure identifies carbon-material grinding and micronization; supports the material-duty premise only.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own manufacturing disclosure identifies carbon-material grinding and micronization; supports the material-duty premise only.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Custom formulations and dispersions are commercial outputs, but joint whole-formulation milling remains unmeasured.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Custom formulations and dispersions are commercial outputs, but joint whole-formulation milling remains unmeasured.
8. Pyrum Innovations AG - Interim Group Report January 1 to June 30, 2025
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The purchaser's 2025 report records a grinding-plant installation associated with recovered carbon black; no downstream material revenue is counted.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The purchaser's 2025 report records a grinding-plant installation associated with recovered carbon black; no downstream material revenue is counted.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The report establishes an actual recovery-business equipment context, while the exact attributable mill expenditure remains undisclosed.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The report establishes an actual recovery-business equipment context, while the exact attributable mill expenditure remains undisclosed.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The disclosed commercial-site grinding installation supports Industrial Production classification.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The disclosed commercial-site grinding installation supports Industrial Production classification.

9. NRRI Advances Efficient Grinding Technology on the Iron Range
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The institution distinguishes a planned bench-scale purchase from its loaned pilot equipment; not a completed-sale census.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The institution distinguishes a planned bench-scale purchase from its loaned pilot equipment; not a completed-sale census.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The May xx.xx 2024 account identifies a loaned pilot stirred mill; unpaid placement is not counted as equipment-sale revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The May xx.xx 2024 account identifies a loaned pilot stirred mill; unpaid placement is not counted as equipment-sale revenue.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operating research institute is distinct from its mining clients, supporting buyer/material separation.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operating research institute is distinct from its mining clients, supporting buyer/material separation.
10. Planetary Ball Mill PM 100 - RETSCH
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The PM xx.xx is marketed as a benchtop instrument, supporting the small-laboratory pool classification without establishing sales weight.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The PM xx.xx is marketed as a benchtop instrument, supporting the small-laboratory pool classification without establishing sales weight.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The individual-instrument offering supports a narrower equipment-supply alternative; package incidence remains modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The individual-instrument offering supports a narrower equipment-supply alternative; package incidence remains modeled.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: PM xx.xx is a marketed benchtop planetary platform, supporting laboratory-category mapping rather than shipment or price weights. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: PM xx.xx is a marketed benchtop planetary platform, supporting laboratory-category mapping rather than shipment or price weights. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The product page advertises both dry and wet capability. Actual dual-state purchase inclusion remains an explicit model assumption. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The product page advertises both dry and wet capability. Actual dual-state purchase inclusion remains an explicit model assumption. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))

11. Jet Mill - Contract History CW2408170, CanadaBuys
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: A May xx.xx 2026 laboratory jet-mill award totals CAD xx.xx; a dated procurement check, not a 2025 shipment or global average price.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: A May xx.xx 2026 laboratory jet-mill award totals CAD xx.xx; a dated procurement check, not a 2025 shipment or global average price.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The record distinguishes Natural Resources Canada as buying organization from PSPC as contracting organization, supporting establishment attribution.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The record distinguishes Natural Resources Canada as buying organization from PSPC as contracting organization, supporting establishment attribution.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The jet-mill award totals CAD xx.xx and is dated May xx.xx 2026. It is a nearby-period laboratory purchasing comparator, not a 2025 recognized sale, and supplies neither a gas-jet subtype nor a definitive channel role. ([canadabuys.canada.ca](https://canadabuys.canada.ca/en/tender-opportunities/contract-history/cw2408170-xx.xx))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The jet-mill award totals CAD xx.xx and is dated May xx.xx 2026. It is a nearby-period laboratory purchasing comparator, not a 2025 recognized sale, and supplies neither a gas-jet subtype nor a definitive channel role. ([canadabuys.canada.ca](https://canadabuys.canada.ca/en/tender-opportunities/contract-history/cw2408170-xx.xx))
12. MFC Production Equipment - FiberLean
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The manufacturer's commercial offering targets pulp, paper and related establishments; it is not a measured industry sales share.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The manufacturer's commercial offering targets pulp, paper and related establishments; it is not a measured industry sales share.
13. Pulverizing Equipment - Coperion
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The broader portfolio names power-generation applications and separately lists ultrafine equipment; this limits, rather than verifies, the assumed qualifying power-buyer allocation.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The broader portfolio names power-generation applications and separately lists ultrafine equipment; this limits, rather than verifies, the assumed qualifying power-buyer allocation.
14. LG Energy Solution Releases 2025 Financial Results - January 29, 2026
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own 2025 revenue decline and dated 2026 capital-expenditure reduction target constrain battery-related equipment-adoption assumptions.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Existing-asset reuse strategy qualifies a direct downstream-demand-to-new-carbon-material-mill investment inference.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Buyer investment restraint constrains the relative application multiplier; upstream chemical attribution remains separately assumed.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own battery-manufacturer financial and investment plans provide a counter-test, not an ultrafine equipment purchasing total.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The January 2026 emphasis on reduced new investment qualifies automatic growth in broader equipment-package adoption.

15. UNSD Classification Detail - ISIC Rev.4, Class 3830: Materials Recovery
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The official classification distinguishes secondary-material recovery from manufacture of new final products; it supplies no equipment sales weight.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The official classification distinguishes secondary-material recovery from manufacture of new final products; it supplies no equipment sales weight.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Recovered-input use alone does not classify the equipment operator as a recovery establishment rather than a product manufacturer.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Recovered-input use alone does not classify the equipment operator as a recovery establishment rather than a product manufacturer.
16. Ultrafin Mill: Super Masscolloider, Masuko MKCA6-5J CE - University of Ljubljana
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The university inventories a laboratory ultrafine mill within wood science; the institutional operator is not a wood-products manufacturer.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The university inventories a laboratory ultrafine mill within wood science; the institutional operator is not a wood-products manufacturer.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The institutional inventory expressly identifies laboratory equipment, supporting deployment classification without establishing a purchase-year value.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The institutional inventory expressly identifies laboratory equipment, supporting deployment classification without establishing a purchase-year value.
17. Contract Manufacturing of Pharmaceuticals - YUKI GOSEI KOGYO CO., LTD.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operator distinguishes production jet mills from smaller equipment, supporting industrial deployment at a pharmaceutical contract manufacturer.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operator distinguishes production jet mills from smaller equipment, supporting industrial deployment at a pharmaceutical contract manufacturer.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The actual pharmaceutical manufacturing operator is distinct from customers outsourcing production; processing-service receipts remain excluded.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The actual pharmaceutical manufacturing operator is distinct from customers outsourcing production; processing-service receipts remain excluded.

18. Record year for Metso stirred mills as mining industry opts for energy-efficient comminution technology

- Evidence informing base-year allocation inputs; displayed values and growth are calculated: Metso reports more than twenty Vertimill sales in 2025 and approximately xx.xx cumulative stirred-mill deliveries. Broader application coverage prevents treating these as ultrafine-only annual shipments; they constrain the modeled stirred/mining allocation and forecast premise. ([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))
- Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Metso reports more than twenty Vertimill sales in 2025 and approximately xx.xx cumulative stirred-mill deliveries. Broader application coverage prevents treating these as ultrafine-only annual shipments; they constrain the modeled stirred/mining allocation and forecast premise. ([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))
- Evidence informing base-year allocation inputs; displayed values and growth are calculated: The disclosed stirred-equipment activity supports material Media Mills participation, not the final modeled parent share. ([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))
- Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The disclosed stirred-equipment activity supports material Media Mills participation, not the final modeled parent share. ([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))

19. Bühler strengthens its market position

- Evidence informing base-year allocation inputs; displayed values and growth are calculated: Bühler reports xx.xx% Grinding & Dispersing order growth in 2025 against a xx.xx% decline in broader Advanced Materials orders. This is a mixed commercial leading indicator, not observed market-share growth. ([buhlergroup.com](https://www.buhlergroup.com/global/en/media/media-releases/b%C3%BChler-strengthens-its-marketposition.html))
- Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Bühler reports xx.xx% Grinding & Dispersing order growth in 2025 against a xx.xx% decline in broader Advanced Materials orders. This is a mixed commercial leading indicator, not observed market-share growth. ([buhlergroup.com](https://www.buhlergroup.com/global/en/media/media-releases/b%C3%BChler-strengthens-its-marketposition.html))
- Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The disclosed battery-related and other application orders constrain differentiated Media Mills forecast assumptions without converting orders directly to annual equipment revenue. ([buhlergroup.com](https://www.buhlergroup.com/global/en/media/media-releases/b%C3%BChler-strengthens-its-marketposition.html))

20. Management Greetings | HOSOKAWAMICRON CORPORATION

- Evidence informing base-year allocation inputs; displayed values and growth are calculated: Hosokawa reports FY2025 net sales of JPY xx.xx, down xx.xx%, and orders down xx.xx%. The diversified-company result challenges uniform purchasing acceleration and constrains, rather than directly measures, technology-mix assumptions. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/ir/management_policy/management_greetings.html))
- Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Hosokawa reports FY2025 net sales of JPY xx.xx, down xx.xx%, and orders down xx.xx%. The diversified-company result challenges uniform purchasing acceleration and constrains, rather than directly measures, technology-mix assumptions. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/ir/management_policy/management_greetings.html))
- Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The same broader financial contraction is counterevidence to assuming uniform Media Mills growth across suppliers; no corporate revenue is assigned directly to the category. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/ir/management_policy/management_greetings.html))

21. Details of micromeritics | HOSOKAWAMICRON CORPORATION

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Hosokawa identifies its AS spiral offering, supporting subtype mapping rather than a sales weight. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Hosokawa identifies its AS spiral offering, supporting subtype mapping rather than a sales weight. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The AFG/TFG counterjet offerings support the retained Opposed-Jet commercial mapping. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The AFG/TFG counterjet offerings support the retained Opposed-Jet commercial mapping. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The manufacturer identifies Innovomizer as a mechanical ultrafine offering; ordinary impact equipment is not automatically included. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The manufacturer identifies Innovomizer as a mechanical ultrafine offering; ordinary impact equipment is not automatically included. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

22. Grinding Equipment Manufacturer Supplier Factory, Grinding System | Longly

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: LONGLY discloses current annual capacity above 2,000 equipment units and commercial wet-grinding offerings. Capacity is bridged through explicitly assumed timing, utilization and eligible-product factors; it is not reported 2025 stirred-mill shipments. ([longlymill.com](https://www.longlymill.com/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: LONGLY discloses current annual capacity above 2,000 equipment units and commercial wet-grinding offerings. Capacity is bridged through explicitly assumed timing, utilization and eligible-product factors; it is not reported 2025 stirred-mill shipments. ([longlymill.com](https://www.longlymill.com/))

23. Ultra-Fine Grinding - Hosokawa Micron Malaysia

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The inspected ultrafine portfolio identifies AWM-F table-roller equipment, supporting the qualifying Roller Mills boundary, not its assumed counts or prices. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The inspected ultrafine portfolio identifies AWM-F table-roller equipment, supporting the qualifying Roller Mills boundary, not its assumed counts or prices. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Super Orion is a marketed rotary ball-mill constituent of the combined rotary/planetary category. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Super Orion is a marketed rotary ball-mill constituent of the combined rotary/planetary category. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: MJT is explicitly listed as a target-type offering, supporting precedence of the named platform over overlapping generic jet terminology. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: MJT is explicitly listed as a target-type offering, supporting precedence of the named platform over overlapping generic jet terminology. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

24. Loop Jet Mill - Consistency. Compliance. Engineered.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The current named Loop Jet Mill listing establishes an offered commercial platform. It supports forecast category continuity, but does not disclose subtype revenue or prove 2025 sales. ([jetmillmfg.com](https://www.jetmillmfg.com/loop-jet-mill/))
25. SWECO Vibratory Grinding and Particle Size Reduction Equipment
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: SWECO markets Vibro-Energy grinding equipment with separate wet and wet/dry offerings. This supports commercial category and configuration mapping, not the modeled frequency of purchases. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: SWECO markets Vibro-Energy grinding equipment with separate wet and wet/dry offerings. This supports commercial category and configuration mapping, not the modeled frequency of purchases. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Named wet/dry models establish dual-state availability; they do not establish the exact supplied configuration or a market-wide value share. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Named wet/dry models establish dual-state availability; they do not establish the exact supplied configuration or a market-wide value share. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))
26. Fine-cutting mill with rotating classifying feature - the sensational new development!
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The September xx.xx 2014 own-product announcement establishes a pre-base-year SecoMy S cutting offering described for ultrafine commercial applications. It is category evidence, not annual equipment revenue. ([grinding.netzsch.com](https://grinding.netzsch.com/en/news/2014/fine-cutting-mill-with-rotating-classifying-feature-the-sensational-new-development))
27. NETZSCH SecoMy S - Precision Cutting Redefined!
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The August 2026 SecoMy S brochure confirms continuing commercial ultrafine-cutting positioning and system-supply availability. It supports category persistence, not the assumed forecast spending share. ([grinding.netzsch.com](https://grinding.netzsch.com/_Resources/Persistent/xx.xx/e/xx.xx/b/8e4b5adcfc16fcc2d83974f8080d614cce1a2c01/NETZSCH_Fine_Cutting_Mill_SecoMy_S_e.pdf))
28. Wet Milling and Dispersing Device - Star Burst - Sugino Corp.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: SUGINO's Star Burst portfolio identifies wet-jet equipment across research and production purchasing contexts. Only milling-attributable supply is included; adjacent droplet-only or dispersion activity is not automatically counted. ([suginocorp.com](https://www.suginocorp.com/star-burst/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: SUGINO's Star Burst portfolio identifies wet-jet equipment across research and production purchasing contexts. Only milling-attributable supply is included; adjacent droplet-only or dispersion activity is not automatically counted. ([suginocorp.com](https://www.suginocorp.com/star-burst/))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The wet-jet offering supports wet-state classification within the joint value model, not the total Wet Grinding share. ([suginocorp.com](https://www.suginocorp.com/star-burst/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The wet-jet offering supports wet-state classification within the joint value model, not the total Wet Grinding share. ([suginocorp.com](https://www.suginocorp.com/star-burst/))

29. IBU-tec | Mills - Milling Technology for Dry and Wet Grinding
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operator table separately lists two dry opposed-jet units. This is an installed-inventory observation, not a shipment or revenue ratio. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operator table separately lists two dry opposed-jet units. This is an installed-inventory observation, not a shipment or revenue ratio. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Three wet agitator-bead units are separately inventoried, supporting state-specific commercial classification without using their count as a market weight. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Three wet agitator-bead units are separately inventoried, supporting state-specific commercial classification without using their count as a market weight. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
30. Comminution - NTNU
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: NTNU separately records wet/dry capability for stirred and planetary equipment; the inventory is not a representative value-share dataset. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: NTNU separately records wet/dry capability for stirred and planetary equipment; the inventory is not a representative value-share dataset. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The planetary equipment is recorded as batch, supporting a laboratory batch context without assuming all laboratories are batch-only. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The planetary equipment is recorded as batch, supporting a laboratory batch context without assuming all laboratories are batch-only. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The laboratory jet rig is recorded as continuous, independently challenging equivalence between continuous mode and industrial scale. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The laboratory jet rig is recorded as continuous, independently challenging equivalence between continuous mode and industrial scale. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
31. Dry Batch Or Continuous Laboratory Mills - Union Process
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Union Process identifies SD-xx.xx as one laboratory offering for both batch and continuous service. Configuration-specific purchase inclusion and revenue are undisclosed. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Union Process identifies SD-xx.xx as one laboratory offering for both batch and continuous service. Configuration-specific purchase inclusion and revenue are undisclosed. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The same named offering advertises wet/dry capability, supporting a dual-state category premise rather than an observed adoption percentage. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The same named offering advertises wet/dry capability, supporting a dual-state category premise rather than an observed adoption percentage. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))

32. Retsch Contact & Services - Contact Partners Worldwide

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: RETSCH describes a network including daughter companies. Manufacturer affiliation, rather than contact location, informs direct-route attribution. ([retsch.com](https://www.retsch.com/contact-services/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: RETSCH describes a network including daughter companies. Manufacturer affiliation, rather than contact location, informs direct-route attribution. ([retsch.com](https://www.retsch.com/contact-services/))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The network also includes trained distributors, establishing a resale-access premise but not distributor ownership roles or annual sales weights. ([retsch.com](https://www.retsch.com/contact-services/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The network also includes trained distributors, establishing a resale-access premise but not distributor ownership roles or annual sales weights. ([retsch.com](https://www.retsch.com/contact-services/))

33. HOSOKAWA ALPINE Aktiengesellschaft - Conditions of Sale 371_00 EN

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Hosokawa requires company confirmation of representatives' transactions and makes contractual scope authoritative. The terms support agency-role attribution, not the assumed agent percentage. ([hosokawa-alpine.com](https://www.hosokawa-alpine.com/fileadmin/allgemein/Legal/AGB/AGB_Verkaufsbedingungen_en_371_00.pdf))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Hosokawa requires company confirmation of representatives' transactions and makes contractual scope authoritative. The terms support agency-role attribution, not the assumed agent percentage. ([hosokawa-alpine.com](https://www.hosokawa-alpine.com/fileadmin/allgemein/Legal/AGB/AGB_Verkaufsbedingungen_en_371_00.pdf))

34. UNSD - ISIC Rev.5, Class 4610: Wholesale on a Fee or Contract Basis

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: ISIC Rev.xx.xx class xx.xx defines fee/commission intermediation without ownership, supporting a non-title-taking agency numerator distinct from goods supplied on own account. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: ISIC Rev.xx.xx class xx.xx defines fee/commission intermediation without ownership, supporting a non-title-taking agency numerator distinct from goods supplied on own account. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Own-account wholesale is excluded from the agency class, supporting the reseller/agent partition without supplying ultrafine-mill channel shares. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own-account wholesale is excluded from the agency class, supporting the reseller/agent partition without supplying ultrafine-mill channel shares. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))

35. ITDI-PB-2024-057 - Supply, Delivery, Installation and Commissioning of Ultra-fine Friction Grinder

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The 2024 friction-grinder procurement had a PHP xx.xx budget and failed with no bidder. It establishes a configured-package spending ceiling and commercial category, not a sale or a shipment count. ([notices.philgeps.gov.ph](https://notices.philgeps.gov.ph/GEPSNONPILOT/Tender/PrintableBidNoticeAbstractUI.aspx?refid=xx.xx))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The 2024 friction-grinder procurement had a PHP xx.xx budget and failed with no bidder. It establishes a configured-package spending ceiling and commercial category, not a sale or a shipment count. ([notices.philgeps.gov.ph](https://notices.philgeps.gov.ph/GEPSNONPILOT/Tender/PrintableBidNoticeAbstractUI.aspx?refid=xx.xx))

36. Bangko Sentral ng Pilipinas - Balance of Payments Report, Q4 2024

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The central bank reports a 2024 average of PHP xx.xx per USD. Dividing the failed PHP xx.xx procurement budget by this rate gives an approximately USD xx.xx comparison ceiling, not realized equipment revenue. ([bsp.gov.ph](https://www.bsp.gov.ph/Media_And_Research/Balance%20of%20Payments%20Report/2024/BOP_4qtr2024.pdf))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The central bank reports a 2024 average of PHP xx.xx per USD. Dividing the failed PHP xx.xx procurement budget by this rate gives an approximately USD xx.xx comparison ceiling, not realized equipment revenue. ([bsp.gov.ph](https://www.bsp.gov.ph/Media_And_Research/Balance%20of%20Payments%20Report/2024/BOP_4qtr2024.pdf))

17.6. France

Table 373. France Ultra Fine Grinding Mill Market Size, 2017-2040 (USD Million)

Country	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
France	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 374. France Ultra Fine Grinding Mill Market Size, by Supply Scope, 2017-2040 (USD Million)

Supply Scope	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Integrated Milling Packages	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Standalone Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 375. France Ultra Fine Grinding Mill Market Size, by Mill Technology, 2017-2040 (USD Million)

Mill Technology	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Cutting Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Disc and Colloid Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Gas-Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mechanical Impact Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Media Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Roller Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wet-Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 376. France Ultra Fine Grinding Mill Market Size, by Media Mills, 2017-2040 (USD Million)

Media Mills	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Rotary and Planetary Ball Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Stirred Media Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Vibratory Media Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 377. France Ultra Fine Grinding Mill Market Size, by Gas-Jet Mills, 2017-2040 (USD Million)

Gas-Jet Mills	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Loop Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Opposed-Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Spiral Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Target Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 378. France Ultra Fine Grinding Mill Market Size, by Processed Material, 2017-2040 (USD Million)

Processed Material	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Biomass and Natural Ingredients	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Carbonaceous Materials	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Formulations and Composites	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Industrial Minerals	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Inorganic Chemicals, Ceramics, and Glass	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Metal Ores and Concentrates	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Metals and Alloys	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Organic Chemicals	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Polymers and Elastomers	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 379. France Ultra Fine Grinding Mill Market Size, by Buyer Industry, 2017-2040 (USD Million)

Buyer Industry	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Chemical and Fuel Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Electrical and Electronic Product Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Food, Beverage, and Feed Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Glass, Ceramics, and Construction Materials Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Materials Recovery and Recycling	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Metals and Fabricated Metal Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mining and Mineral Processing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Pharmaceutical Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Power and Heat Generation	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Research, Education, and Testing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Rubber and Plastics Product Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wood, Pulp, and Paper Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 380. France Ultra Fine Grinding Mill Market Size, by Deployment Scale, 2017-2040 (USD Million)

Deployment Scale	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Industrial Production	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Laboratory	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Pilot	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 381. France Ultra Fine Grinding Mill Market Size, by Sales Channel, 2017-2040 (USD Million)

Sales Channel	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Agent-Mediated Sales	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Independent Reseller Sales	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Manufacturer-Direct Sales	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 382. France Ultra Fine Grinding Mill Market Size, by Processing State, 2017-2040 (USD Million)

Processing State	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Dry Grinding	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wet and Dry Grinding	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wet Grinding	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 383. France Ultra Fine Grinding Mill Market Size, by Operating Mode, 2017-2040 (USD Million)

Operating Mode	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Batch	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Batch and Continuous	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Continuous	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Sources & Evidence

1. Methodology - UNIDO Industrial Analytics Platform

   · Evidence informing base-year allocation inputs; displayed values and growth are calculated: The methodology identifies Monaco within French trade coverage; the customs input is an imperfect national demand proxy rather than a directly observed country numerator.

   · Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The methodology identifies Monaco within French trade coverage; the customs input is an imperfect national demand proxy rather than a directly observed country numerator.

2. Hosokawa Micron - FY2025 Financial Results Presentation, November 25, 2025 (Japanese)
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; material attribution modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; material attribution modeled.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; establishment attribution modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; establishment attribution modeled.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; buyer attribution assumed.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; buyer attribution assumed.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; qualifying power attribution unverified.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; qualifying power attribution unverified.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; institutional attribution assumed.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; institutional attribution assumed.

3. Metso Receives Order for Grinding Mills to a Copper Project in Africa
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Approximately EUR xx.xx 2024 HIGmill order includes auxiliaries and services; a package-scale anchor, not recognized annual revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Approximately EUR xx.xx 2024 HIGmill order includes auxiliaries and services; a package-scale anchor, not recognized annual revenue.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The copper-project award establishes an ore/concentrate commercial purchasing context.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The copper-project award establishes an ore/concentrate commercial purchasing context.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The award concerns an African mining project; it does not disclose the global mining-buyer share.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The award concerns an African mining project; it does not disclose the global mining-buyer share.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Large industrial equipment procurement supports the production-scale category premise.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Large industrial equipment procurement supports the production-scale category premise.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The August xx.xx 2024 announcement records an approximately EUR xx.xx HIGmill order including auxiliaries and services. It anchors package-level commercial materiality, not a mill unit price or 2025 recognized revenue. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The August xx.xx 2024 announcement records an approximately EUR xx.xx HIGmill order including auxiliaries and services. It anchors package-level commercial materiality, not a mill unit price or 2025 recognized revenue. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The stirred-package order supports the Media Mills value-weight model and continuing commercial-demand premise, with order-to-revenue timing unresolved. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The stirred-package order supports the Media Mills value-weight model and continuing commercial-demand premise, with order-to-revenue timing unresolved. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
4. HIGmill Plant - Metso
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Standalone marketing terminology does not establish the study's Standalone Mills equipment scope.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Standalone marketing terminology does not establish the study's Standalone Mills equipment scope.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: HIGmill Plant includes pre-engineered auxiliary modules, supporting classification as an equipment package.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: HIGmill Plant includes pre-engineered auxiliary modules, supporting classification as an equipment package.

5. IsaMill - About, Technology Partnership and Engineering
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Delivery alternatives permit mill-only supply or additional auxiliary equipment; actual equipment scope determines attribution.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Delivery alternatives permit mill-only supply or additional auxiliary equipment; actual equipment scope determines attribution.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Modular auxiliary-inclusive and turnkey alternatives support differentiated package scope, without proving a global adoption percentage.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Modular auxiliary-inclusive and turnkey alternatives support differentiated package scope, without proving a global adoption percentage.
6. Commission Processing - NIPPON COKE & ENGINEERING CO., LTD.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Own commercial processing portfolio identifies glass, ceramics and inorganic materials; establishes material mapping, not equipment revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own commercial processing portfolio identifies glass, ceramics and inorganic materials; establishes material mapping, not equipment revenue.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Organic pigments are named commercial processing materials.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Organic pigments are named commercial processing materials.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Metal powders are named commercial processing materials.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Metal powders are named commercial processing materials.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Carbon is identified in the operator's commercial grinding portfolio.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Carbon is identified in the operator's commercial grinding portfolio.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Thermosetting resin supports a polymer-material category premise.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Thermosetting resin supports a polymer-material category premise.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Ink-related grinding establishes a commercial reference but does not resolve whole-formulation versus constituent duty.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Ink-related grinding establishes a commercial reference but does not resolve whole-formulation versus constituent duty.

7. Micronization / Grinding - A. Ebbecke Verfahrenstechnik AG
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Commercial contract-grinding coverage includes natural materials and food ingredients; processing fees are excluded from equipment value.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Commercial contract-grinding coverage includes natural materials and food ingredients; processing fees are excluded from equipment value.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Plastic granulates and resins establish material coverage, not downstream customers' equipment ownership.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Plastic granulates and resins establish material coverage, not downstream customers' equipment ownership.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operator-side food-processing reference supports establishment attribution rather than automatically assigning equipment to its customers.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operator-side food-processing reference supports establishment attribution rather than automatically assigning equipment to its customers.
8. Manufacturing Capabilities - Asbury Advanced Materials
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Own manufacturing disclosure identifies carbon-material grinding and micronization; supports the material-duty premise only.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own manufacturing disclosure identifies carbon-material grinding and micronization; supports the material-duty premise only.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Custom formulations and dispersions are commercial outputs, but joint whole-formulation milling remains unmeasured.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Custom formulations and dispersions are commercial outputs, but joint whole-formulation milling remains unmeasured.
9. Pyrum Innovations AG - Interim Group Report January 1 to June 30, 2025
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The purchaser's 2025 report records a grinding-plant installation associated with recovered carbon black; no downstream material revenue is counted.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The purchaser's 2025 report records a grinding-plant installation associated with recovered carbon black; no downstream material revenue is counted.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The report establishes an actual recovery-business equipment context, while the exact attributable mill expenditure remains undisclosed.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The report establishes an actual recovery-business equipment context, while the exact attributable mill expenditure remains undisclosed.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The disclosed commercial-site grinding installation supports Industrial Production classification.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The disclosed commercial-site grinding installation supports Industrial Production classification.

10. NRRI Advances Efficient Grinding Technology on the Iron Range
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The institution distinguishes a planned bench-scale purchase from its loaned pilot equipment; not a completed-sale census.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The institution distinguishes a planned bench-scale purchase from its loaned pilot equipment; not a completed-sale census.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The May xx.xx 2024 account identifies a loaned pilot stirred mill; unpaid placement is not counted as equipment-sale revenue.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The May xx.xx 2024 account identifies a loaned pilot stirred mill; unpaid placement is not counted as equipment-sale revenue.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operating research institute is distinct from its mining clients, supporting buyer/material separation.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operating research institute is distinct from its mining clients, supporting buyer/material separation.
11. Planetary Ball Mill PM 100 - RETSCH
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The PM xx.xx is marketed as a benchtop instrument, supporting the small-laboratory pool classification without establishing sales weight.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The PM xx.xx is marketed as a benchtop instrument, supporting the small-laboratory pool classification without establishing sales weight.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The individual-instrument offering supports a narrower equipment-supply alternative; package incidence remains modeled.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The individual-instrument offering supports a narrower equipment-supply alternative; package incidence remains modeled.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: PM xx.xx is a marketed benchtop planetary platform, supporting laboratory-category mapping rather than shipment or price weights. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: PM xx.xx is a marketed benchtop planetary platform, supporting laboratory-category mapping rather than shipment or price weights. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The product page advertises both dry and wet capability. Actual dual-state purchase inclusion remains an explicit model assumption. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The product page advertises both dry and wet capability. Actual dual-state purchase inclusion remains an explicit model assumption. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))

12. Jet Mill - Contract History CW2408170, CanadaBuys
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: A May xx.xx 2026 laboratory jet-mill award totals CAD xx.xx; a dated procurement check, not a 2025 shipment or global average price.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: A May xx.xx 2026 laboratory jet-mill award totals CAD xx.xx; a dated procurement check, not a 2025 shipment or global average price.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The record distinguishes Natural Resources Canada as buying organization from PSPC as contracting organization, supporting establishment attribution.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The record distinguishes Natural Resources Canada as buying organization from PSPC as contracting organization, supporting establishment attribution.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The jet-mill award totals CAD xx.xx and is dated May xx.xx 2026. It is a nearby-period laboratory purchasing comparator, not a 2025 recognized sale, and supplies neither a gas-jet subtype nor a definitive channel role. ([canadabuys.canada.ca](https://canadabuys.canada.ca/en/tender-opportunities/contract-history/cw2408170-xx.xx))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The jet-mill award totals CAD xx.xx and is dated May xx.xx 2026. It is a nearby-period laboratory purchasing comparator, not a 2025 recognized sale, and supplies neither a gas-jet subtype nor a definitive channel role. ([canadabuys.canada.ca](https://canadabuys.canada.ca/en/tender-opportunities/contract-history/cw2408170-xx.xx))
13. MFC Production Equipment - FiberLean
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The manufacturer's commercial offering targets pulp, paper and related establishments; it is not a measured industry sales share.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The manufacturer's commercial offering targets pulp, paper and related establishments; it is not a measured industry sales share.
14. Pulverizing Equipment - Coperion
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The broader portfolio names power-generation applications and separately lists ultrafine equipment; this limits, rather than verifies, the assumed qualifying power-buyer allocation.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The broader portfolio names power-generation applications and separately lists ultrafine equipment; this limits, rather than verifies, the assumed qualifying power-buyer allocation.
15. LG Energy Solution Releases 2025 Financial Results - January 29, 2026
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own 2025 revenue decline and dated 2026 capital-expenditure reduction target constrain battery-related equipment-adoption assumptions.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Existing-asset reuse strategy qualifies a direct downstream-demand-to-new-carbon-material-mill investment inference.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Buyer investment restraint constrains the relative application multiplier; upstream chemical attribution remains separately assumed.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own battery-manufacturer financial and investment plans provide a counter-test, not an ultrafine equipment purchasing total.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The January 2026 emphasis on reduced new investment qualifies automatic growth in broader equipment-package adoption.

16. UNSD Classification Detail - ISIC Rev.4, Class 3830: Materials Recovery
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The official classification distinguishes secondary-material recovery from manufacture of new final products; it supplies no equipment sales weight.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The official classification distinguishes secondary-material recovery from manufacture of new final products; it supplies no equipment sales weight.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Recovered-input use alone does not classify the equipment operator as a recovery establishment rather than a product manufacturer.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Recovered-input use alone does not classify the equipment operator as a recovery establishment rather than a product manufacturer.
17. Ultrafin Mill: Super Masscolloider, Masuko MKCA6-5J CE - University of Ljubljana
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The university inventories a laboratory ultrafine mill within wood science; the institutional operator is not a wood-products manufacturer.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The university inventories a laboratory ultrafine mill within wood science; the institutional operator is not a wood-products manufacturer.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The institutional inventory expressly identifies laboratory equipment, supporting deployment classification without establishing a purchase-year value.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The institutional inventory expressly identifies laboratory equipment, supporting deployment classification without establishing a purchase-year value.
18. Contract Manufacturing of Pharmaceuticals - YUKI GOSEI KOGYO CO., LTD.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operator distinguishes production jet mills from smaller equipment, supporting industrial deployment at a pharmaceutical contract manufacturer.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operator distinguishes production jet mills from smaller equipment, supporting industrial deployment at a pharmaceutical contract manufacturer.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The actual pharmaceutical manufacturing operator is distinct from customers outsourcing production; processing-service receipts remain excluded.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The actual pharmaceutical manufacturing operator is distinct from customers outsourcing production; processing-service receipts remain excluded.

19. Record year for Metso stirred mills as mining industry opts for energy-efficient comminution technology

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Metso reports more than twenty Vertimill sales in 2025 and approximately xx.xx cumulative stirred-mill deliveries. Broader application coverage prevents treating these as ultrafine-only annual shipments; they constrain the modeled stirred/mining allocation and forecast premise.
([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Metso reports more than twenty Vertimill sales in 2025 and approximately xx.xx cumulative stirred-mill deliveries. Broader application coverage prevents treating these as ultrafine-only annual shipments; they constrain the modeled stirred/mining allocation and forecast premise.
([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The disclosed stirred-equipment activity supports material Media Mills participation, not the final modeled parent share.
([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The disclosed stirred-equipment activity supports material Media Mills participation, not the final modeled parent share.
([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))

20. Bühler strengthens its market position

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Bühler reports xx.xx% Grinding & Dispersing order growth in 2025 against a xx.xx% decline in broader Advanced Materials orders. This is a mixed commercial leading indicator, not observed market-share growth.
([buhlergroup.com](https://www.buhlergroup.com/global/en/media/media-releases/b%C3%BChler-strengthens-its-marketposition.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Bühler reports xx.xx% Grinding & Dispersing order growth in 2025 against a xx.xx% decline in broader Advanced Materials orders. This is a mixed commercial leading indicator, not observed market-share growth.
([buhlergroup.com](https://www.buhlergroup.com/global/en/media/media-releases/b%C3%BChler-strengthens-its-marketposition.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The disclosed battery-related and other application orders constrain differentiated Media Mills forecast assumptions without converting orders directly to annual equipment revenue.
([buhlergroup.com](https://www.buhlergroup.com/global/en/media/media-releases/b%C3%BChler-strengthens-its-marketposition.html))

21. Management Greetings | HOSOKAWAMICRON CORPORATION

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Hosokawa reports FY2025 net sales of JPY xx.xx, down xx.xx%, and orders down xx.xx%. The diversified-company result challenges uniform purchasing acceleration and constrains, rather than directly measures, technology-mix assumptions.
([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/ir/management_policy/management_greetings.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Hosokawa reports FY2025 net sales of JPY xx.xx, down xx.xx%, and orders down xx.xx%. The diversified-company result challenges uniform purchasing acceleration and constrains, rather than directly measures, technology-mix assumptions.
([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/ir/management_policy/management_greetings.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The same broader financial contraction is counterevidence to assuming uniform Media Mills growth across suppliers; no corporate revenue is assigned directly to the category.
([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/ir/management_policy/management_greetings.html))

22. Details of micromeritics | HOSOKAWAMICRON CORPORATION

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Hosokawa identifies its AS spiral offering, supporting subtype mapping rather than a sales weight. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Hosokawa identifies its AS spiral offering, supporting subtype mapping rather than a sales weight. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The AFG/TFG counterjet offerings support the retained Opposed-Jet commercial mapping. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The AFG/TFG counterjet offerings support the retained Opposed-Jet commercial mapping. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The manufacturer identifies Innovomizer as a mechanical ultrafine offering; ordinary impact equipment is not automatically included. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The manufacturer identifies Innovomizer as a mechanical ultrafine offering; ordinary impact equipment is not automatically included. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

23. Grinding Equipment Manufacturer Supplier Factory, Grinding System | Longly

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: LONGLY discloses current annual capacity above 2,000 equipment units and commercial wet-grinding offerings. Capacity is bridged through explicitly assumed timing, utilization and eligible-product factors; it is not reported 2025 stirred-mill shipments. ([longlymill.com](https://www.longlymill.com/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: LONGLY discloses current annual capacity above 2,000 equipment units and commercial wet-grinding offerings. Capacity is bridged through explicitly assumed timing, utilization and eligible-product factors; it is not reported 2025 stirred-mill shipments. ([longlymill.com](https://www.longlymill.com/))

24. Ultra-Fine Grinding - Hosokawa Micron Malaysia

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The inspected ultrafine portfolio identifies AWM-F table-roller equipment, supporting the qualifying Roller Mills boundary, not its assumed counts or prices. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The inspected ultrafine portfolio identifies AWM-F table-roller equipment, supporting the qualifying Roller Mills boundary, not its assumed counts or prices. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Super Orion is a marketed rotary ball-mill constituent of the combined rotary/planetary category. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Super Orion is a marketed rotary ball-mill constituent of the combined rotary/planetary category. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: MJT is explicitly listed as a target-type offering, supporting precedence of the named platform over overlapping generic jet terminology. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: MJT is explicitly listed as a target-type offering, supporting precedence of the named platform over overlapping generic jet terminology. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

25. Loop Jet Mill - Consistency. Compliance. Engineered.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The current named Loop Jet Mill listing establishes an offered commercial platform. It supports forecast category continuity, but does not disclose subtype revenue or prove 2025 sales. ([jetmillmfg.com](https://www.jetmillmfg.com/loop-jet-mill/))
26. SWECO Vibratory Grinding and Particle Size Reduction Equipment
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: SWECO markets Vibro-Energy grinding equipment with separate wet and wet/dry offerings. This supports commercial category and configuration mapping, not the modeled frequency of purchases. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: SWECO markets Vibro-Energy grinding equipment with separate wet and wet/dry offerings. This supports commercial category and configuration mapping, not the modeled frequency of purchases. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Named wet/dry models establish dual-state availability; they do not establish the exact supplied configuration or a market-wide value share. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Named wet/dry models establish dual-state availability; they do not establish the exact supplied configuration or a market-wide value share. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))
27. Fine-cutting mill with rotating classifying feature - the sensational new development!
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The September xx.xx 2014 own-product announcement establishes a pre-base-year SecoMy S cutting offering described for ultrafine commercial applications. It is category evidence, not annual equipment revenue. ([grinding.netzsch.com](https://grinding.netzsch.com/en/news/2014/fine-cutting-mill-with-rotating-classifying-feature-the-sensational-new-development))
28. NETZSCH SecoMy S - Precision Cutting Redefined!
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The August 2026 SecoMy S brochure confirms continuing commercial ultrafine-cutting positioning and system-supply availability. It supports category persistence, not the assumed forecast spending share. ([grinding.netzsch.com](https://grinding.netzsch.com/_Resources/Persistent/xx.xx/e/xx.xx/b/8e4b5adcfc16fcc2d83974f8080d614cce1a2c01/NETZSCH_Fine_Cutting_Mill_SecoMy_S_e.pdf))
29. Wet Milling and Dispersing Device - Star Burst - Sugino Corp.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: SUGINO's Star Burst portfolio identifies wet-jet equipment across research and production purchasing contexts. Only milling-attributable supply is included; adjacent droplet-only or dispersion activity is not automatically counted. ([suginocorp.com](https://www.suginocorp.com/star-burst/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: SUGINO's Star Burst portfolio identifies wet-jet equipment across research and production purchasing contexts. Only milling-attributable supply is included; adjacent droplet-only or dispersion activity is not automatically counted. ([suginocorp.com](https://www.suginocorp.com/star-burst/))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The wet-jet offering supports wet-state classification within the joint value model, not the total Wet Grinding share. ([suginocorp.com](https://www.suginocorp.com/star-burst/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The wet-jet offering supports wet-state classification within the joint value model, not the total Wet Grinding share. ([suginocorp.com](https://www.suginocorp.com/star-burst/))

30. IBU-tec | Mills - Milling Technology for Dry and Wet Grinding
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operator table separately lists two dry opposed-jet units. This is an installed-inventory observation, not a shipment or revenue ratio. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operator table separately lists two dry opposed-jet units. This is an installed-inventory observation, not a shipment or revenue ratio. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Three wet agitator-bead units are separately inventoried, supporting state-specific commercial classification without using their count as a market weight. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Three wet agitator-bead units are separately inventoried, supporting state-specific commercial classification without using their count as a market weight. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
31. Comminution - NTNU
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: NTNU separately records wet/dry capability for stirred and planetary equipment; the inventory is not a representative value-share dataset. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: NTNU separately records wet/dry capability for stirred and planetary equipment; the inventory is not a representative value-share dataset. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The planetary equipment is recorded as batch, supporting a laboratory batch context without assuming all laboratories are batch-only. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The planetary equipment is recorded as batch, supporting a laboratory batch context without assuming all laboratories are batch-only. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The laboratory jet rig is recorded as continuous, independently challenging equivalence between continuous mode and industrial scale. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The laboratory jet rig is recorded as continuous, independently challenging equivalence between continuous mode and industrial scale. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
32. Dry Batch Or Continuous Laboratory Mills - Union Process
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Union Process identifies SD-xx.xx as one laboratory offering for both batch and continuous service. Configuration-specific purchase inclusion and revenue are undisclosed. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Union Process identifies SD-xx.xx as one laboratory offering for both batch and continuous service. Configuration-specific purchase inclusion and revenue are undisclosed. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The same named offering advertises wet/dry capability, supporting a dual-state category premise rather than an observed adoption percentage. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The same named offering advertises wet/dry capability, supporting a dual-state category premise rather than an observed adoption percentage. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))

33. Retsch Contact & Services - Contact Partners Worldwide

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: RETSCH describes a network including daughter companies. Manufacturer affiliation, rather than contact location, informs direct-route attribution. ([retsch.com](https://www.retsch.com/contact-services/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: RETSCH describes a network including daughter companies. Manufacturer affiliation, rather than contact location, informs direct-route attribution. ([retsch.com](https://www.retsch.com/contact-services/))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The network also includes trained distributors, establishing a resale-access premise but not distributor ownership roles or annual sales weights. ([retsch.com](https://www.retsch.com/contact-services/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The network also includes trained distributors, establishing a resale-access premise but not distributor ownership roles or annual sales weights. ([retsch.com](https://www.retsch.com/contact-services/))

34. HOSOKAWA ALPINE Aktiengesellschaft - Conditions of Sale 371_00 EN

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Hosokawa requires company confirmation of representatives' transactions and makes contractual scope authoritative. The terms support agency-role attribution, not the assumed agent percentage. ([hosokawa-alpine.com](https://www.hosokawa-alpine.com/fileadmin/allgemein/Legal/AGB/AGB_Verkaufsbedingungen_en_371_00.pdf))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Hosokawa requires company confirmation of representatives' transactions and makes contractual scope authoritative. The terms support agency-role attribution, not the assumed agent percentage. ([hosokawa-alpine.com](https://www.hosokawa-alpine.com/fileadmin/allgemein/Legal/AGB/AGB_Verkaufsbedingungen_en_371_00.pdf))

35. UNSD - ISIC Rev.5, Class 4610: Wholesale on a Fee or Contract Basis

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: ISIC Rev.xx.xx class xx.xx defines fee/commission intermediation without ownership, supporting a non-title-taking agency numerator distinct from goods supplied on own account. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: ISIC Rev.xx.xx class xx.xx defines fee/commission intermediation without ownership, supporting a non-title-taking agency numerator distinct from goods supplied on own account. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Own-account wholesale is excluded from the agency class, supporting the reseller/agent partition without supplying ultrafine-mill channel shares. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own-account wholesale is excluded from the agency class, supporting the reseller/agent partition without supplying ultrafine-mill channel shares. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))

36. ITDI-PB-2024-057 - Supply, Delivery, Installation and Commissioning of Ultra-fine Friction Grinder

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The 2024 friction-grinder procurement had a PHP xx.xx budget and failed with no bidder. It establishes a configured-package spending ceiling and commercial category, not a sale or a shipment count. ([notices.philgeps.gov.ph](https://notices.philgeps.gov.ph/GEPSNONPILOT/Tender/PrintableBidNoticeAbstractUI.aspx?refid=xx.xx))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The 2024 friction-grinder procurement had a PHP xx.xx budget and failed with no bidder. It establishes a configured-package spending ceiling and commercial category, not a sale or a shipment count. ([notices.philgeps.gov.ph](https://notices.philgeps.gov.ph/GEPSNONPILOT/Tender/PrintableBidNoticeAbstractUI.aspx?refid=xx.xx))

37. Bangko Sentral ng Pilipinas - Balance of Payments Report, Q4 2024

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The central bank reports a 2024 average of PHP xx.xx per USD. Dividing the failed PHP xx.xx procurement budget by this rate gives an approximately USD xx.xx comparison ceiling, not realized equipment revenue. ([bsp.gov.ph](https://www.bsp.gov.ph/Media_And_Research/Balance%20of%20Payments%20Report/2024/BOP_4qtr2024.pdf))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The central bank reports a 2024 average of PHP xx.xx per USD. Dividing the failed PHP xx.xx procurement budget by this rate gives an approximately USD xx.xx comparison ceiling, not realized equipment revenue. ([bsp.gov.ph](https://www.bsp.gov.ph/Media_And_Research/Balance%20of%20Payments%20Report/2024/BOP_4qtr2024.pdf))

17.7. United Kingdom

Table 384. United Kingdom Ultra Fine Grinding Mill Market Size, 2017-2040 (USD Million)

Country	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
United Kingdom	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 385. United Kingdom Ultra Fine Grinding Mill Market Size, by Supply Scope, 2017-2040 (USD Million)

Supply Scope	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Integrated Milling Packages	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Standalone Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 386. United Kingdom Ultra Fine Grinding Mill Market Size, by Mill Technology, 2017-2040 (USD Million)

Mill Technology	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Cutting Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Disc and Colloid Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Gas-Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mechanical Impact Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Media Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Roller Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wet-Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 387. United Kingdom Ultra Fine Grinding Mill Market Size, by Media Mills, 2017-2040 (USD Million)

Media Mills	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Rotary and Planetary Ball Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Stirred Media Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Vibratory Media Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 388. United Kingdom Ultra Fine Grinding Mill Market Size, by Gas-Jet Mills, 2017-2040 (USD Million)

Gas-Jet Mills	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Loop Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Opposed-Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Spiral Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Target Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 389. United Kingdom Ultra Fine Grinding Mill Market Size, by Processed Material, 2017-2040 (USD Million)

Processed Material	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Biomass and Natural Ingredients	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Carbonaceous Materials	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Formulations and Composites	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Industrial Minerals	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Inorganic Chemicals, Ceramics, and Glass	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Metal Ores and Concentrates	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Metals and Alloys	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Organic Chemicals	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Polymers and Elastomers	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 390. United Kingdom Ultra Fine Grinding Mill Market Size, by Buyer Industry, 2017-2040 (USD Million)

Buyer Industry	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Chemical and Fuel Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Electrical and Electronic Product Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Food, Beverage, and Feed Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Glass, Ceramics, and Construction Materials Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Materials Recovery and Recycling	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Metals and Fabricated Metal Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mining and Mineral Processing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Pharmaceutical Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Power and Heat Generation	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Research, Education, and Testing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Rubber and Plastics Product Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wood, Pulp, and Paper Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 391. United Kingdom Ultra Fine Grinding Mill Market Size, by Deployment Scale, 2017-2040 (USD Million)

Deployment Scale	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Industrial Production	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Laboratory	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Pilot	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 392. United Kingdom Ultra Fine Grinding Mill Market Size, by Sales Channel, 2017-2040 (USD Million)

Sales Channel	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Agent-Mediated Sales	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Independent Reseller Sales	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Manufacturer-Direct Sales	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 393. United Kingdom Ultra Fine Grinding Mill Market Size, by Processing State, 2017-2040 (USD Million)

Processing State	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Dry Grinding	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wet and Dry Grinding	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wet Grinding	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 394. United Kingdom Ultra Fine Grinding Mill Market Size, by Operating Mode, 2017-2040 (USD Million)

Operating Mode	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Batch	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Batch and Continuous	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Continuous	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Sources & Evidence

1. Hosokawa Micron - FY2025 Financial Results Presentation, November 25, 2025 (Japanese)
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; material attribution modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; material attribution modeled.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; establishment attribution modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; establishment attribution modeled.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; buyer attribution assumed.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; buyer attribution assumed.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; qualifying power attribution unverified.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; qualifying power attribution unverified.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; institutional attribution assumed.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; institutional attribution assumed.

2. Metso Receives Order for Grinding Mills to a Copper Project in Africa
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Approximately EUR xx.xx 2024 HIGmill order includes auxiliaries and services; a package-scale anchor, not recognized annual revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Approximately EUR xx.xx 2024 HIGmill order includes auxiliaries and services; a package-scale anchor, not recognized annual revenue.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The copper-project award establishes an ore/concentrate commercial purchasing context.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The copper-project award establishes an ore/concentrate commercial purchasing context.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The award concerns an African mining project; it does not disclose the global mining-buyer share.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The award concerns an African mining project; it does not disclose the global mining-buyer share.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Large industrial equipment procurement supports the production-scale category premise.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Large industrial equipment procurement supports the production-scale category premise.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The August xx.xx 2024 announcement records an approximately EUR xx.xx HIGmill order including auxiliaries and services. It anchors package-level commercial materiality, not a mill unit price or 2025 recognized revenue. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The August xx.xx 2024 announcement records an approximately EUR xx.xx HIGmill order including auxiliaries and services. It anchors package-level commercial materiality, not a mill unit price or 2025 recognized revenue. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The stirred-package order supports the Media Mills value-weight model and continuing commercial-demand premise, with order-to-revenue timing unresolved. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The stirred-package order supports the Media Mills value-weight model and continuing commercial-demand premise, with order-to-revenue timing unresolved. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
3. HIGmill Plant - Metso
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Standalone marketing terminology does not establish the study's Standalone Mills equipment scope.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Standalone marketing terminology does not establish the study's Standalone Mills equipment scope.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: HIGmill Plant includes pre-engineered auxiliary modules, supporting classification as an equipment package.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: HIGmill Plant includes pre-engineered auxiliary modules, supporting classification as an equipment package.

4. IsaMill - About, Technology Partnership and Engineering
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Delivery alternatives permit mill-only supply or additional auxiliary equipment; actual equipment scope determines attribution.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Delivery alternatives permit mill-only supply or additional auxiliary equipment; actual equipment scope determines attribution.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Modular auxiliary-inclusive and turnkey alternatives support differentiated package scope, without proving a global adoption percentage.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Modular auxiliary-inclusive and turnkey alternatives support differentiated package scope, without proving a global adoption percentage.
5. Commission Processing - NIPPON COKE & ENGINEERING CO., LTD.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Own commercial processing portfolio identifies glass, ceramics and inorganic materials; establishes material mapping, not equipment revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own commercial processing portfolio identifies glass, ceramics and inorganic materials; establishes material mapping, not equipment revenue.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Organic pigments are named commercial processing materials.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Organic pigments are named commercial processing materials.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Metal powders are named commercial processing materials.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Metal powders are named commercial processing materials.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Carbon is identified in the operator's commercial grinding portfolio.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Carbon is identified in the operator's commercial grinding portfolio.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Thermosetting resin supports a polymer-material category premise.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Thermosetting resin supports a polymer-material category premise.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Ink-related grinding establishes a commercial reference but does not resolve whole-formulation versus constituent duty.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Ink-related grinding establishes a commercial reference but does not resolve whole-formulation versus constituent duty.

6. Micronization / Grinding - A. Ebbecke Verfahrenstechnik AG
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Commercial contract-grinding coverage includes natural materials and food ingredients; processing fees are excluded from equipment value.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Commercial contract-grinding coverage includes natural materials and food ingredients; processing fees are excluded from equipment value.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Plastic granulates and resins establish material coverage, not downstream customers' equipment ownership.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Plastic granulates and resins establish material coverage, not downstream customers' equipment ownership.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operator-side food-processing reference supports establishment attribution rather than automatically assigning equipment to its customers.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operator-side food-processing reference supports establishment attribution rather than automatically assigning equipment to its customers.
7. Manufacturing Capabilities - Asbury Advanced Materials
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Own manufacturing disclosure identifies carbon-material grinding and micronization; supports the material-duty premise only.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own manufacturing disclosure identifies carbon-material grinding and micronization; supports the material-duty premise only.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Custom formulations and dispersions are commercial outputs, but joint whole-formulation milling remains unmeasured.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Custom formulations and dispersions are commercial outputs, but joint whole-formulation milling remains unmeasured.
8. Pyrum Innovations AG - Interim Group Report January 1 to June 30, 2025
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The purchaser's 2025 report records a grinding-plant installation associated with recovered carbon black; no downstream material revenue is counted.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The purchaser's 2025 report records a grinding-plant installation associated with recovered carbon black; no downstream material revenue is counted.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The report establishes an actual recovery-business equipment context, while the exact attributable mill expenditure remains undisclosed.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The report establishes an actual recovery-business equipment context, while the exact attributable mill expenditure remains undisclosed.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The disclosed commercial-site grinding installation supports Industrial Production classification.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The disclosed commercial-site grinding installation supports Industrial Production classification.

9. NRRI Advances Efficient Grinding Technology on the Iron Range
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The institution distinguishes a planned bench-scale purchase from its loaned pilot equipment; not a completed-sale census.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The institution distinguishes a planned bench-scale purchase from its loaned pilot equipment; not a completed-sale census.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The May xx.xx 2024 account identifies a loaned pilot stirred mill; unpaid placement is not counted as equipment-sale revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The May xx.xx 2024 account identifies a loaned pilot stirred mill; unpaid placement is not counted as equipment-sale revenue.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operating research institute is distinct from its mining clients, supporting buyer/material separation.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operating research institute is distinct from its mining clients, supporting buyer/material separation.
10. Planetary Ball Mill PM 100 - RETSCH
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The PM xx.xx is marketed as a benchtop instrument, supporting the small-laboratory pool classification without establishing sales weight.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The PM xx.xx is marketed as a benchtop instrument, supporting the small-laboratory pool classification without establishing sales weight.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The individual-instrument offering supports a narrower equipment-supply alternative; package incidence remains modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The individual-instrument offering supports a narrower equipment-supply alternative; package incidence remains modeled.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: PM xx.xx is a marketed benchtop planetary platform, supporting laboratory-category mapping rather than shipment or price weights. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: PM xx.xx is a marketed benchtop planetary platform, supporting laboratory-category mapping rather than shipment or price weights. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The product page advertises both dry and wet capability. Actual dual-state purchase inclusion remains an explicit model assumption. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The product page advertises both dry and wet capability. Actual dual-state purchase inclusion remains an explicit model assumption. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))

11. Jet Mill - Contract History CW2408170, CanadaBuys
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: A May xx.xx 2026 laboratory jet-mill award totals CAD xx.xx; a dated procurement check, not a 2025 shipment or global average price.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: A May xx.xx 2026 laboratory jet-mill award totals CAD xx.xx; a dated procurement check, not a 2025 shipment or global average price.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The record distinguishes Natural Resources Canada as buying organization from PSPC as contracting organization, supporting establishment attribution.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The record distinguishes Natural Resources Canada as buying organization from PSPC as contracting organization, supporting establishment attribution.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The jet-mill award totals CAD xx.xx and is dated May xx.xx 2026. It is a nearby-period laboratory purchasing comparator, not a 2025 recognized sale, and supplies neither a gas-jet subtype nor a definitive channel role. ([canadabuys.canada.ca](https://canadabuys.canada.ca/en/tender-opportunities/contract-history/cw2408170-xx.xx))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The jet-mill award totals CAD xx.xx and is dated May xx.xx 2026. It is a nearby-period laboratory purchasing comparator, not a 2025 recognized sale, and supplies neither a gas-jet subtype nor a definitive channel role. ([canadabuys.canada.ca](https://canadabuys.canada.ca/en/tender-opportunities/contract-history/cw2408170-xx.xx))
12. MFC Production Equipment - FiberLean
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The manufacturer's commercial offering targets pulp, paper and related establishments; it is not a measured industry sales share.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The manufacturer's commercial offering targets pulp, paper and related establishments; it is not a measured industry sales share.
13. Pulverizing Equipment - Coperion
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The broader portfolio names power-generation applications and separately lists ultrafine equipment; this limits, rather than verifies, the assumed qualifying power-buyer allocation.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The broader portfolio names power-generation applications and separately lists ultrafine equipment; this limits, rather than verifies, the assumed qualifying power-buyer allocation.
14. LG Energy Solution Releases 2025 Financial Results - January 29, 2026
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own 2025 revenue decline and dated 2026 capital-expenditure reduction target constrain battery-related equipment-adoption assumptions.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Existing-asset reuse strategy qualifies a direct downstream-demand-to-new-carbon-material-mill investment inference.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Buyer investment restraint constrains the relative application multiplier; upstream chemical attribution remains separately assumed.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own battery-manufacturer financial and investment plans provide a counter-test, not an ultrafine equipment purchasing total.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The January 2026 emphasis on reduced new investment qualifies automatic growth in broader equipment-package adoption.

15. UNSD Classification Detail - ISIC Rev.4, Class 3830: Materials Recovery
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The official classification distinguishes secondary-material recovery from manufacture of new final products; it supplies no equipment sales weight.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The official classification distinguishes secondary-material recovery from manufacture of new final products; it supplies no equipment sales weight.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Recovered-input use alone does not classify the equipment operator as a recovery establishment rather than a product manufacturer.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Recovered-input use alone does not classify the equipment operator as a recovery establishment rather than a product manufacturer.
16. Ultrafin Mill: Super Masscolloider, Masuko MKCA6-5J CE - University of Ljubljana
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The university inventories a laboratory ultrafine mill within wood science; the institutional operator is not a wood-products manufacturer.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The university inventories a laboratory ultrafine mill within wood science; the institutional operator is not a wood-products manufacturer.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The institutional inventory expressly identifies laboratory equipment, supporting deployment classification without establishing a purchase-year value.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The institutional inventory expressly identifies laboratory equipment, supporting deployment classification without establishing a purchase-year value.
17. Contract Manufacturing of Pharmaceuticals - YUKI GOSEI KOGYO CO., LTD.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operator distinguishes production jet mills from smaller equipment, supporting industrial deployment at a pharmaceutical contract manufacturer.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operator distinguishes production jet mills from smaller equipment, supporting industrial deployment at a pharmaceutical contract manufacturer.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The actual pharmaceutical manufacturing operator is distinct from customers outsourcing production; processing-service receipts remain excluded.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The actual pharmaceutical manufacturing operator is distinct from customers outsourcing production; processing-service receipts remain excluded.

18. Record year for Metso stirred mills as mining industry opts for energy-efficient comminution technology

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Metso reports more than twenty Vertimill sales in 2025 and approximately xx.xx cumulative stirred-mill deliveries. Broader application coverage prevents treating these as ultrafine-only annual shipments; they constrain the modeled stirred/mining allocation and forecast premise.
([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Metso reports more than twenty Vertimill sales in 2025 and approximately xx.xx cumulative stirred-mill deliveries. Broader application coverage prevents treating these as ultrafine-only annual shipments; they constrain the modeled stirred/mining allocation and forecast premise.
([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The disclosed stirred-equipment activity supports material Media Mills participation, not the final modeled parent share.
([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The disclosed stirred-equipment activity supports material Media Mills participation, not the final modeled parent share.
([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))

19. Bühler strengthens its market position

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Bühler reports xx.xx% Grinding & Dispersing order growth in 2025 against a xx.xx% decline in broader Advanced Materials orders. This is a mixed commercial leading indicator, not observed market-share growth.
([buhlergroup.com](https://www.buhlergroup.com/global/en/media/media-releases/b%C3%BChler-strengthens-its-marketposition.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Bühler reports xx.xx% Grinding & Dispersing order growth in 2025 against a xx.xx% decline in broader Advanced Materials orders. This is a mixed commercial leading indicator, not observed market-share growth.
([buhlergroup.com](https://www.buhlergroup.com/global/en/media/media-releases/b%C3%BChler-strengthens-its-marketposition.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The disclosed battery-related and other application orders constrain differentiated Media Mills forecast assumptions without converting orders directly to annual equipment revenue.
([buhlergroup.com](https://www.buhlergroup.com/global/en/media/media-releases/b%C3%BChler-strengthens-its-marketposition.html))

20. Management Greetings | HOSOKAWAMICRON CORPORATION

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Hosokawa reports FY2025 net sales of JPY xx.xx, down xx.xx%, and orders down xx.xx%. The diversified-company result challenges uniform purchasing acceleration and constrains, rather than directly measures, technology-mix assumptions.
([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/ir/management_policy/management_greetings.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Hosokawa reports FY2025 net sales of JPY xx.xx, down xx.xx%, and orders down xx.xx%. The diversified-company result challenges uniform purchasing acceleration and constrains, rather than directly measures, technology-mix assumptions.
([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/ir/management_policy/management_greetings.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The same broader financial contraction is counterevidence to assuming uniform Media Mills growth across suppliers; no corporate revenue is assigned directly to the category.
([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/ir/management_policy/management_greetings.html))

21. Details of micromeritics | HOSOKAWAMICRON CORPORATION

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Hosokawa identifies its AS spiral offering, supporting subtype mapping rather than a sales weight. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Hosokawa identifies its AS spiral offering, supporting subtype mapping rather than a sales weight. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The AFG/TFG counterjet offerings support the retained Opposed-Jet commercial mapping. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The AFG/TFG counterjet offerings support the retained Opposed-Jet commercial mapping. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The manufacturer identifies Innovomizer as a mechanical ultrafine offering; ordinary impact equipment is not automatically included. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The manufacturer identifies Innovomizer as a mechanical ultrafine offering; ordinary impact equipment is not automatically included. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

22. Grinding Equipment Manufacturer Supplier Factory, Grinding System | Longly

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: LONGLY discloses current annual capacity above 2,000 equipment units and commercial wet-grinding offerings. Capacity is bridged through explicitly assumed timing, utilization and eligible-product factors; it is not reported 2025 stirred-mill shipments. ([longlymill.com](https://www.longlymill.com/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: LONGLY discloses current annual capacity above 2,000 equipment units and commercial wet-grinding offerings. Capacity is bridged through explicitly assumed timing, utilization and eligible-product factors; it is not reported 2025 stirred-mill shipments. ([longlymill.com](https://www.longlymill.com/))

23. Ultra-Fine Grinding - Hosokawa Micron Malaysia

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The inspected ultrafine portfolio identifies AWM-F table-roller equipment, supporting the qualifying Roller Mills boundary, not its assumed counts or prices. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The inspected ultrafine portfolio identifies AWM-F table-roller equipment, supporting the qualifying Roller Mills boundary, not its assumed counts or prices. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Super Orion is a marketed rotary ball-mill constituent of the combined rotary/planetary category. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Super Orion is a marketed rotary ball-mill constituent of the combined rotary/planetary category. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: MJT is explicitly listed as a target-type offering, supporting precedence of the named platform over overlapping generic jet terminology. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: MJT is explicitly listed as a target-type offering, supporting precedence of the named platform over overlapping generic jet terminology. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

24. Loop Jet Mill - Consistency. Compliance. Engineered.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The current named Loop Jet Mill listing establishes an offered commercial platform. It supports forecast category continuity, but does not disclose subtype revenue or prove 2025 sales. ([jetmillmfg.com](https://www.jetmillmfg.com/loop-jet-mill/))
25. SWECO Vibratory Grinding and Particle Size Reduction Equipment
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: SWECO markets Vibro-Energy grinding equipment with separate wet and wet/dry offerings. This supports commercial category and configuration mapping, not the modeled frequency of purchases. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: SWECO markets Vibro-Energy grinding equipment with separate wet and wet/dry offerings. This supports commercial category and configuration mapping, not the modeled frequency of purchases. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Named wet/dry models establish dual-state availability; they do not establish the exact supplied configuration or a market-wide value share. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Named wet/dry models establish dual-state availability; they do not establish the exact supplied configuration or a market-wide value share. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))
26. Fine-cutting mill with rotating classifying feature - the sensational new development!
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The September xx.xx 2014 own-product announcement establishes a pre-base-year SecoMy S cutting offering described for ultrafine commercial applications. It is category evidence, not annual equipment revenue. ([grinding.netzsch.com](https://grinding.netzsch.com/en/news/2014/fine-cutting-mill-with-rotating-classifying-feature-the-sensational-new-development))
27. NETZSCH SecoMy S - Precision Cutting Redefined!
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The August 2026 SecoMy S brochure confirms continuing commercial ultrafine-cutting positioning and system-supply availability. It supports category persistence, not the assumed forecast spending share. ([grinding.netzsch.com](https://grinding.netzsch.com/_Resources/Persistent/xx.xx/e/xx.xx/b/8e4b5adcfc16fcc2d83974f8080d614cce1a2c01/NETZSCH_Fine_Cutting_Mill_SecoMy_S_e.pdf))
28. Wet Milling and Dispersing Device - Star Burst - Sugino Corp.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: SUGINO's Star Burst portfolio identifies wet-jet equipment across research and production purchasing contexts. Only milling-attributable supply is included; adjacent droplet-only or dispersion activity is not automatically counted. ([suginocorp.com](https://www.suginocorp.com/star-burst/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: SUGINO's Star Burst portfolio identifies wet-jet equipment across research and production purchasing contexts. Only milling-attributable supply is included; adjacent droplet-only or dispersion activity is not automatically counted. ([suginocorp.com](https://www.suginocorp.com/star-burst/))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The wet-jet offering supports wet-state classification within the joint value model, not the total Wet Grinding share. ([suginocorp.com](https://www.suginocorp.com/star-burst/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The wet-jet offering supports wet-state classification within the joint value model, not the total Wet Grinding share. ([suginocorp.com](https://www.suginocorp.com/star-burst/))

29. IBU-tec | Mills - Milling Technology for Dry and Wet Grinding

- Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operator table separately lists two dry opposed-jet units. This is an installed-inventory observation, not a shipment or revenue ratio. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
- Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operator table separately lists two dry opposed-jet units. This is an installed-inventory observation, not a shipment or revenue ratio. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
- Evidence informing base-year allocation inputs; displayed values and growth are calculated: Three wet agitator-bead units are separately inventoried, supporting state-specific commercial classification without using their count as a market weight. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
- Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Three wet agitator-bead units are separately inventoried, supporting state-specific commercial classification without using their count as a market weight. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))

30. Comminution - NTNU

- Evidence informing base-year allocation inputs; displayed values and growth are calculated: NTNU separately records wet/dry capability for stirred and planetary equipment; the inventory is not a representative value-share dataset. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
- Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: NTNU separately records wet/dry capability for stirred and planetary equipment; the inventory is not a representative value-share dataset. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
- Evidence informing base-year allocation inputs; displayed values and growth are calculated: The planetary equipment is recorded as batch, supporting a laboratory batch context without assuming all laboratories are batch-only. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
- Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The planetary equipment is recorded as batch, supporting a laboratory batch context without assuming all laboratories are batch-only. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
- Evidence informing base-year allocation inputs; displayed values and growth are calculated: The laboratory jet rig is recorded as continuous, independently challenging equivalence between continuous mode and industrial scale. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
- Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The laboratory jet rig is recorded as continuous, independently challenging equivalence between continuous mode and industrial scale. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))

31. Dry Batch Or Continuous Laboratory Mills - Union Process

- Evidence informing base-year allocation inputs; displayed values and growth are calculated: Union Process identifies SD-xx.xx as one laboratory offering for both batch and continuous service. Configuration-specific purchase inclusion and revenue are undisclosed. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))
- Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Union Process identifies SD-xx.xx as one laboratory offering for both batch and continuous service. Configuration-specific purchase inclusion and revenue are undisclosed. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))
- Evidence informing base-year allocation inputs; displayed values and growth are calculated: The same named offering advertises wet/dry capability, supporting a dual-state category premise rather than an observed adoption percentage. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))
- Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The same named offering advertises wet/dry capability, supporting a dual-state category premise rather than an observed adoption percentage. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))

32. Retsch Contact & Services - Contact Partners Worldwide

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: RETSCH describes a network including daughter companies. Manufacturer affiliation, rather than contact location, informs direct-route attribution. ([retsch.com](https://www.retsch.com/contact-services/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: RETSCH describes a network including daughter companies. Manufacturer affiliation, rather than contact location, informs direct-route attribution. ([retsch.com](https://www.retsch.com/contact-services/))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The network also includes trained distributors, establishing a resale-access premise but not distributor ownership roles or annual sales weights. ([retsch.com](https://www.retsch.com/contact-services/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The network also includes trained distributors, establishing a resale-access premise but not distributor ownership roles or annual sales weights. ([retsch.com](https://www.retsch.com/contact-services/))

33. HOSOKAWA ALPINE Aktiengesellschaft - Conditions of Sale 371_00 EN

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Hosokawa requires company confirmation of representatives' transactions and makes contractual scope authoritative. The terms support agency-role attribution, not the assumed agent percentage. ([hosokawa-alpine.com](https://www.hosokawa-alpine.com/fileadmin/allgemein/Legal/AGB/AGB_Verkaufsbedingungen_en_371_00.pdf))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Hosokawa requires company confirmation of representatives' transactions and makes contractual scope authoritative. The terms support agency-role attribution, not the assumed agent percentage. ([hosokawa-alpine.com](https://www.hosokawa-alpine.com/fileadmin/allgemein/Legal/AGB/AGB_Verkaufsbedingungen_en_371_00.pdf))

34. UNSD - ISIC Rev.5, Class 4610: Wholesale on a Fee or Contract Basis

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: ISIC Rev.xx.xx class xx.xx defines fee/commission intermediation without ownership, supporting a non-title-taking agency numerator distinct from goods supplied on own account. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: ISIC Rev.xx.xx class xx.xx defines fee/commission intermediation without ownership, supporting a non-title-taking agency numerator distinct from goods supplied on own account. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Own-account wholesale is excluded from the agency class, supporting the reseller/agent partition without supplying ultrafine-mill channel shares. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own-account wholesale is excluded from the agency class, supporting the reseller/agent partition without supplying ultrafine-mill channel shares. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))

35. ITDI-PB-2024-057 - Supply, Delivery, Installation and Commissioning of Ultra-fine Friction Grinder

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The 2024 friction-grinder procurement had a PHP xx.xx budget and failed with no bidder. It establishes a configured-package spending ceiling and commercial category, not a sale or a shipment count. ([notices.philgeps.gov.ph](https://notices.philgeps.gov.ph/GEPSNONPILOT/Tender/PrintableBidNoticeAbstractUI.aspx?refid=xx.xx))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The 2024 friction-grinder procurement had a PHP xx.xx budget and failed with no bidder. It establishes a configured-package spending ceiling and commercial category, not a sale or a shipment count. ([notices.philgeps.gov.ph](https://notices.philgeps.gov.ph/GEPSNONPILOT/Tender/PrintableBidNoticeAbstractUI.aspx?refid=xx.xx))

36. Bangko Sentral ng Pilipinas - Balance of Payments Report, Q4 2024

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The central bank reports a 2024 average of PHP xx.xx per USD. Dividing the failed PHP xx.xx procurement budget by this rate gives an approximately USD xx.xx comparison ceiling, not realized equipment revenue. ([bsp.gov.ph](https://www.bsp.gov.ph/Media_And_Research/Balance%20of%20Payments%20Report/2024/BOP_4qtr2024.pdf))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The central bank reports a 2024 average of PHP xx.xx per USD. Dividing the failed PHP xx.xx procurement budget by this rate gives an approximately USD xx.xx comparison ceiling, not realized equipment revenue. ([bsp.gov.ph](https://www.bsp.gov.ph/Media_And_Research/Balance%20of%20Payments%20Report/2024/BOP_4qtr2024.pdf))

17.8. South Korea

Table 395. South Korea Ultra Fine Grinding Mill Market Size, 2017-2040 (USD Million)

Country	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
South Korea	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 396. South Korea Ultra Fine Grinding Mill Market Size, by Supply Scope, 2017-2040 (USD Million)

Supply Scope	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Integrated Milling Packages	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Standalone Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 397. South Korea Ultra Fine Grinding Mill Market Size, by Mill Technology, 2017-2040 (USD Million)

Mill Technology	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Cutting Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Disc and Colloid Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Gas-Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mechanical Impact Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Media Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Roller Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wet-Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 398. South Korea Ultra Fine Grinding Mill Market Size, by Media Mills, 2017-2040 (USD Million)

Media Mills	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Rotary and Planetary Ball Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Stirred Media Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Vibratory Media Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 399. South Korea Ultra Fine Grinding Mill Market Size, by Gas-Jet Mills, 2017-2040 (USD Million)

Gas-Jet Mills	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Loop Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Opposed-Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Spiral Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Target Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 400. South Korea Ultra Fine Grinding Mill Market Size, by Processed Material, 2017-2040 (USD Million)

Processed Material	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Biomass and Natural Ingredients	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Carbonaceous Materials	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Formulations and Composites	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Industrial Minerals	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Inorganic Chemicals, Ceramics, and Glass	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Metal Ores and Concentrates	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Metals and Alloys	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Organic Chemicals	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Polymers and Elastomers	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 401. South Korea Ultra Fine Grinding Mill Market Size, by Buyer Industry, 2017-2040 (USD Million)

Buyer Industry	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Chemical and Fuel Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Electrical and Electronic Product Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Food, Beverage, and Feed Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Glass, Ceramics, and Construction Materials Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Materials Recovery and Recycling	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Metals and Fabricated Metal Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mining and Mineral Processing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Pharmaceutical Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Power and Heat Generation	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Research, Education, and Testing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Rubber and Plastics Product Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wood, Pulp, and Paper Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 402. South Korea Ultra Fine Grinding Mill Market Size, by Deployment Scale, 2017-2040 (USD Million)

Deployment Scale	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Industrial Production	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Laboratory	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Pilot	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 403. South Korea Ultra Fine Grinding Mill Market Size, by Sales Channel, 2017-2040 (USD Million)

Sales Channel	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Agent-Mediated Sales	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Independent Reseller Sales	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Manufacturer-Direct Sales	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 404. South Korea Ultra Fine Grinding Mill Market Size, by Processing State, 2017-2040 (USD Million)

Processing State	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Dry Grinding	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wet and Dry Grinding	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wet Grinding	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 405. South Korea Ultra Fine Grinding Mill Market Size, by Operating Mode, 2017-2040 (USD Million)

Operating Mode	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Batch	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Batch and Continuous	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Continuous	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Sources & Evidence

1. Hosokawa Micron - FY2025 Financial Results Presentation, November 25, 2025 (Japanese)
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; material attribution modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; material attribution modeled.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; establishment attribution modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; establishment attribution modeled.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; buyer attribution assumed.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; buyer attribution assumed.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; qualifying power attribution unverified.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; qualifying power attribution unverified.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; institutional attribution assumed.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; institutional attribution assumed.

2. Metso Receives Order for Grinding Mills to a Copper Project in Africa
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Approximately EUR xx.xx 2024 HIGmill order includes auxiliaries and services; a package-scale anchor, not recognized annual revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Approximately EUR xx.xx 2024 HIGmill order includes auxiliaries and services; a package-scale anchor, not recognized annual revenue.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The copper-project award establishes an ore/concentrate commercial purchasing context.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The copper-project award establishes an ore/concentrate commercial purchasing context.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The award concerns an African mining project; it does not disclose the global mining-buyer share.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The award concerns an African mining project; it does not disclose the global mining-buyer share.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Large industrial equipment procurement supports the production-scale category premise.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Large industrial equipment procurement supports the production-scale category premise.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The August xx.xx 2024 announcement records an approximately EUR xx.xx HIGmill order including auxiliaries and services. It anchors package-level commercial materiality, not a mill unit price or 2025 recognized revenue. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The August xx.xx 2024 announcement records an approximately EUR xx.xx HIGmill order including auxiliaries and services. It anchors package-level commercial materiality, not a mill unit price or 2025 recognized revenue. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The stirred-package order supports the Media Mills value-weight model and continuing commercial-demand premise, with order-to-revenue timing unresolved. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The stirred-package order supports the Media Mills value-weight model and continuing commercial-demand premise, with order-to-revenue timing unresolved. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
3. HIGmill Plant - Metso
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Standalone marketing terminology does not establish the study's Standalone Mills equipment scope.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Standalone marketing terminology does not establish the study's Standalone Mills equipment scope.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: HIGmill Plant includes pre-engineered auxiliary modules, supporting classification as an equipment package.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: HIGmill Plant includes pre-engineered auxiliary modules, supporting classification as an equipment package.

4. IsaMill - About, Technology Partnership and Engineering
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Delivery alternatives permit mill-only supply or additional auxiliary equipment; actual equipment scope determines attribution.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Delivery alternatives permit mill-only supply or additional auxiliary equipment; actual equipment scope determines attribution.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Modular auxiliary-inclusive and turnkey alternatives support differentiated package scope, without proving a global adoption percentage.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Modular auxiliary-inclusive and turnkey alternatives support differentiated package scope, without proving a global adoption percentage.
5. Commission Processing - NIPPON COKE & ENGINEERING CO., LTD.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Own commercial processing portfolio identifies glass, ceramics and inorganic materials; establishes material mapping, not equipment revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own commercial processing portfolio identifies glass, ceramics and inorganic materials; establishes material mapping, not equipment revenue.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Organic pigments are named commercial processing materials.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Organic pigments are named commercial processing materials.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Metal powders are named commercial processing materials.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Metal powders are named commercial processing materials.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Carbon is identified in the operator's commercial grinding portfolio.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Carbon is identified in the operator's commercial grinding portfolio.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Thermosetting resin supports a polymer-material category premise.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Thermosetting resin supports a polymer-material category premise.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Ink-related grinding establishes a commercial reference but does not resolve whole-formulation versus constituent duty.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Ink-related grinding establishes a commercial reference but does not resolve whole-formulation versus constituent duty.

6. Micronization / Grinding - A. Ebbecke Verfahrenstechnik AG
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Commercial contract-grinding coverage includes natural materials and food ingredients; processing fees are excluded from equipment value.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Commercial contract-grinding coverage includes natural materials and food ingredients; processing fees are excluded from equipment value.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Plastic granulates and resins establish material coverage, not downstream customers' equipment ownership.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Plastic granulates and resins establish material coverage, not downstream customers' equipment ownership.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operator-side food-processing reference supports establishment attribution rather than automatically assigning equipment to its customers.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operator-side food-processing reference supports establishment attribution rather than automatically assigning equipment to its customers.
7. Manufacturing Capabilities - Asbury Advanced Materials
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Own manufacturing disclosure identifies carbon-material grinding and micronization; supports the material-duty premise only.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own manufacturing disclosure identifies carbon-material grinding and micronization; supports the material-duty premise only.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Custom formulations and dispersions are commercial outputs, but joint whole-formulation milling remains unmeasured.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Custom formulations and dispersions are commercial outputs, but joint whole-formulation milling remains unmeasured.
8. Pyrum Innovations AG - Interim Group Report January 1 to June 30, 2025
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The purchaser's 2025 report records a grinding-plant installation associated with recovered carbon black; no downstream material revenue is counted.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The purchaser's 2025 report records a grinding-plant installation associated with recovered carbon black; no downstream material revenue is counted.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The report establishes an actual recovery-business equipment context, while the exact attributable mill expenditure remains undisclosed.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The report establishes an actual recovery-business equipment context, while the exact attributable mill expenditure remains undisclosed.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The disclosed commercial-site grinding installation supports Industrial Production classification.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The disclosed commercial-site grinding installation supports Industrial Production classification.

9. NRRI Advances Efficient Grinding Technology on the Iron Range
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The institution distinguishes a planned bench-scale purchase from its loaned pilot equipment; not a completed-sale census.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The institution distinguishes a planned bench-scale purchase from its loaned pilot equipment; not a completed-sale census.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The May xx.xx 2024 account identifies a loaned pilot stirred mill; unpaid placement is not counted as equipment-sale revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The May xx.xx 2024 account identifies a loaned pilot stirred mill; unpaid placement is not counted as equipment-sale revenue.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operating research institute is distinct from its mining clients, supporting buyer/material separation.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operating research institute is distinct from its mining clients, supporting buyer/material separation.
10. Planetary Ball Mill PM 100 - RETSCH
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The PM xx.xx is marketed as a benchtop instrument, supporting the small-laboratory pool classification without establishing sales weight.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The PM xx.xx is marketed as a benchtop instrument, supporting the small-laboratory pool classification without establishing sales weight.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The individual-instrument offering supports a narrower equipment-supply alternative; package incidence remains modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The individual-instrument offering supports a narrower equipment-supply alternative; package incidence remains modeled.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: PM xx.xx is a marketed benchtop planetary platform, supporting laboratory-category mapping rather than shipment or price weights. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: PM xx.xx is a marketed benchtop planetary platform, supporting laboratory-category mapping rather than shipment or price weights. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The product page advertises both dry and wet capability. Actual dual-state purchase inclusion remains an explicit model assumption. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The product page advertises both dry and wet capability. Actual dual-state purchase inclusion remains an explicit model assumption. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))

11. Jet Mill - Contract History CW2408170, CanadaBuys
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: A May xx.xx 2026 laboratory jet-mill award totals CAD xx.xx; a dated procurement check, not a 2025 shipment or global average price.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: A May xx.xx 2026 laboratory jet-mill award totals CAD xx.xx; a dated procurement check, not a 2025 shipment or global average price.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The record distinguishes Natural Resources Canada as buying organization from PSPC as contracting organization, supporting establishment attribution.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The record distinguishes Natural Resources Canada as buying organization from PSPC as contracting organization, supporting establishment attribution.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The jet-mill award totals CAD xx.xx and is dated May xx.xx 2026. It is a nearby-period laboratory purchasing comparator, not a 2025 recognized sale, and supplies neither a gas-jet subtype nor a definitive channel role. ([canadabuys.canada.ca](https://canadabuys.canada.ca/en/tender-opportunities/contract-history/cw2408170-xx.xx))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The jet-mill award totals CAD xx.xx and is dated May xx.xx 2026. It is a nearby-period laboratory purchasing comparator, not a 2025 recognized sale, and supplies neither a gas-jet subtype nor a definitive channel role. ([canadabuys.canada.ca](https://canadabuys.canada.ca/en/tender-opportunities/contract-history/cw2408170-xx.xx))
12. MFC Production Equipment - FiberLean
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The manufacturer's commercial offering targets pulp, paper and related establishments; it is not a measured industry sales share.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The manufacturer's commercial offering targets pulp, paper and related establishments; it is not a measured industry sales share.
13. Pulverizing Equipment - Coperion
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The broader portfolio names power-generation applications and separately lists ultrafine equipment; this limits, rather than verifies, the assumed qualifying power-buyer allocation.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The broader portfolio names power-generation applications and separately lists ultrafine equipment; this limits, rather than verifies, the assumed qualifying power-buyer allocation.
14. LG Energy Solution Releases 2025 Financial Results - January 29, 2026
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own 2025 revenue decline and dated 2026 capital-expenditure reduction target constrain battery-related equipment-adoption assumptions.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Existing-asset reuse strategy qualifies a direct downstream-demand-to-new-carbon-material-mill investment inference.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Buyer investment restraint constrains the relative application multiplier; upstream chemical attribution remains separately assumed.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own battery-manufacturer financial and investment plans provide a counter-test, not an ultrafine equipment purchasing total.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The January 2026 emphasis on reduced new investment qualifies automatic growth in broader equipment-package adoption.

15. UNSD Classification Detail - ISIC Rev.4, Class 3830: Materials Recovery
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The official classification distinguishes secondary-material recovery from manufacture of new final products; it supplies no equipment sales weight.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The official classification distinguishes secondary-material recovery from manufacture of new final products; it supplies no equipment sales weight.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Recovered-input use alone does not classify the equipment operator as a recovery establishment rather than a product manufacturer.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Recovered-input use alone does not classify the equipment operator as a recovery establishment rather than a product manufacturer.
16. Ultrafin Mill: Super Masscolloider, Masuko MKCA6-5J CE - University of Ljubljana
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The university inventories a laboratory ultrafine mill within wood science; the institutional operator is not a wood-products manufacturer.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The university inventories a laboratory ultrafine mill within wood science; the institutional operator is not a wood-products manufacturer.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The institutional inventory expressly identifies laboratory equipment, supporting deployment classification without establishing a purchase-year value.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The institutional inventory expressly identifies laboratory equipment, supporting deployment classification without establishing a purchase-year value.
17. Contract Manufacturing of Pharmaceuticals - YUKI GOSEI KOGYO CO., LTD.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operator distinguishes production jet mills from smaller equipment, supporting industrial deployment at a pharmaceutical contract manufacturer.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operator distinguishes production jet mills from smaller equipment, supporting industrial deployment at a pharmaceutical contract manufacturer.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The actual pharmaceutical manufacturing operator is distinct from customers outsourcing production; processing-service receipts remain excluded.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The actual pharmaceutical manufacturing operator is distinct from customers outsourcing production; processing-service receipts remain excluded.

18. Record year for Metso stirred mills as mining industry opts for energy-efficient comminution technology

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Metso reports more than twenty Vertimill sales in 2025 and approximately xx.xx cumulative stirred-mill deliveries. Broader application coverage prevents treating these as ultrafine-only annual shipments; they constrain the modeled stirred/mining allocation and forecast premise.
([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Metso reports more than twenty Vertimill sales in 2025 and approximately xx.xx cumulative stirred-mill deliveries. Broader application coverage prevents treating these as ultrafine-only annual shipments; they constrain the modeled stirred/mining allocation and forecast premise.
([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The disclosed stirred-equipment activity supports material Media Mills participation, not the final modeled parent share.
([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The disclosed stirred-equipment activity supports material Media Mills participation, not the final modeled parent share.
([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))

19. Bühler strengthens its market position

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Bühler reports xx.xx% Grinding & Dispersing order growth in 2025 against a xx.xx% decline in broader Advanced Materials orders. This is a mixed commercial leading indicator, not observed market-share growth.
([buhlergroup.com](https://www.buhlergroup.com/global/en/media/media-releases/b%C3%BChler-strengthens-its-marketposition.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Bühler reports xx.xx% Grinding & Dispersing order growth in 2025 against a xx.xx% decline in broader Advanced Materials orders. This is a mixed commercial leading indicator, not observed market-share growth.
([buhlergroup.com](https://www.buhlergroup.com/global/en/media/media-releases/b%C3%BChler-strengthens-its-marketposition.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The disclosed battery-related and other application orders constrain differentiated Media Mills forecast assumptions without converting orders directly to annual equipment revenue.
([buhlergroup.com](https://www.buhlergroup.com/global/en/media/media-releases/b%C3%BChler-strengthens-its-marketposition.html))

20. Management Greetings | HOSOKAWAMICRON CORPORATION

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Hosokawa reports FY2025 net sales of JPY xx.xx, down xx.xx%, and orders down xx.xx%. The diversified-company result challenges uniform purchasing acceleration and constrains, rather than directly measures, technology-mix assumptions.
([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/ir/management_policy/management_greetings.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Hosokawa reports FY2025 net sales of JPY xx.xx, down xx.xx%, and orders down xx.xx%. The diversified-company result challenges uniform purchasing acceleration and constrains, rather than directly measures, technology-mix assumptions.
([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/ir/management_policy/management_greetings.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The same broader financial contraction is counterevidence to assuming uniform Media Mills growth across suppliers; no corporate revenue is assigned directly to the category.
([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/ir/management_policy/management_greetings.html))

21. Details of micromeritics | HOSOKAWAMICRON CORPORATION

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Hosokawa identifies its AS spiral offering, supporting subtype mapping rather than a sales weight. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Hosokawa identifies its AS spiral offering, supporting subtype mapping rather than a sales weight. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The AFG/TFG counterjet offerings support the retained Opposed-Jet commercial mapping. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The AFG/TFG counterjet offerings support the retained Opposed-Jet commercial mapping. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The manufacturer identifies Innovomizer as a mechanical ultrafine offering; ordinary impact equipment is not automatically included. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The manufacturer identifies Innovomizer as a mechanical ultrafine offering; ordinary impact equipment is not automatically included. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

22. Grinding Equipment Manufacturer Supplier Factory, Grinding System | Longly

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: LONGLY discloses current annual capacity above 2,000 equipment units and commercial wet-grinding offerings. Capacity is bridged through explicitly assumed timing, utilization and eligible-product factors; it is not reported 2025 stirred-mill shipments. ([longlymill.com](https://www.longlymill.com/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: LONGLY discloses current annual capacity above 2,000 equipment units and commercial wet-grinding offerings. Capacity is bridged through explicitly assumed timing, utilization and eligible-product factors; it is not reported 2025 stirred-mill shipments. ([longlymill.com](https://www.longlymill.com/))

23. Ultra-Fine Grinding - Hosokawa Micron Malaysia

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The inspected ultrafine portfolio identifies AWM-F table-roller equipment, supporting the qualifying Roller Mills boundary, not its assumed counts or prices. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The inspected ultrafine portfolio identifies AWM-F table-roller equipment, supporting the qualifying Roller Mills boundary, not its assumed counts or prices. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Super Orion is a marketed rotary ball-mill constituent of the combined rotary/planetary category. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Super Orion is a marketed rotary ball-mill constituent of the combined rotary/planetary category. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: MJT is explicitly listed as a target-type offering, supporting precedence of the named platform over overlapping generic jet terminology. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: MJT is explicitly listed as a target-type offering, supporting precedence of the named platform over overlapping generic jet terminology. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

24. Loop Jet Mill - Consistency. Compliance. Engineered.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The current named Loop Jet Mill listing establishes an offered commercial platform. It supports forecast category continuity, but does not disclose subtype revenue or prove 2025 sales. ([jetmillmfg.com](https://www.jetmillmfg.com/loop-jet-mill/))
25. SWECO Vibratory Grinding and Particle Size Reduction Equipment
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: SWECO markets Vibro-Energy grinding equipment with separate wet and wet/dry offerings. This supports commercial category and configuration mapping, not the modeled frequency of purchases. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: SWECO markets Vibro-Energy grinding equipment with separate wet and wet/dry offerings. This supports commercial category and configuration mapping, not the modeled frequency of purchases. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Named wet/dry models establish dual-state availability; they do not establish the exact supplied configuration or a market-wide value share. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Named wet/dry models establish dual-state availability; they do not establish the exact supplied configuration or a market-wide value share. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))
26. Fine-cutting mill with rotating classifying feature - the sensational new development!
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The September xx.xx 2014 own-product announcement establishes a pre-base-year SecoMy S cutting offering described for ultrafine commercial applications. It is category evidence, not annual equipment revenue. ([grinding.netzsch.com](https://grinding.netzsch.com/en/news/2014/fine-cutting-mill-with-rotating-classifying-feature-the-sensational-new-development))
27. NETZSCH SecoMy S - Precision Cutting Redefined!
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The August 2026 SecoMy S brochure confirms continuing commercial ultrafine-cutting positioning and system-supply availability. It supports category persistence, not the assumed forecast spending share. ([grinding.netzsch.com](https://grinding.netzsch.com/_Resources/Persistent/xx.xx/e/xx.xx/b/8e4b5adcfc16fcc2d83974f8080d614cce1a2c01/NETZSCH_Fine_Cutting_Mill_SecoMy_S_e.pdf))
28. Wet Milling and Dispersing Device - Star Burst - Sugino Corp.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: SUGINO's Star Burst portfolio identifies wet-jet equipment across research and production purchasing contexts. Only milling-attributable supply is included; adjacent droplet-only or dispersion activity is not automatically counted. ([suginocorp.com](https://www.suginocorp.com/star-burst/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: SUGINO's Star Burst portfolio identifies wet-jet equipment across research and production purchasing contexts. Only milling-attributable supply is included; adjacent droplet-only or dispersion activity is not automatically counted. ([suginocorp.com](https://www.suginocorp.com/star-burst/))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The wet-jet offering supports wet-state classification within the joint value model, not the total Wet Grinding share. ([suginocorp.com](https://www.suginocorp.com/star-burst/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The wet-jet offering supports wet-state classification within the joint value model, not the total Wet Grinding share. ([suginocorp.com](https://www.suginocorp.com/star-burst/))

29. IBU-tec | Mills - Milling Technology for Dry and Wet Grinding

- Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operator table separately lists two dry opposed-jet units. This is an installed-inventory observation, not a shipment or revenue ratio. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
- Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operator table separately lists two dry opposed-jet units. This is an installed-inventory observation, not a shipment or revenue ratio. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
- Evidence informing base-year allocation inputs; displayed values and growth are calculated: Three wet agitator-bead units are separately inventoried, supporting state-specific commercial classification without using their count as a market weight. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
- Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Three wet agitator-bead units are separately inventoried, supporting state-specific commercial classification without using their count as a market weight. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))

30. Comminution - NTNU

- Evidence informing base-year allocation inputs; displayed values and growth are calculated: NTNU separately records wet/dry capability for stirred and planetary equipment; the inventory is not a representative value-share dataset. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
- Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: NTNU separately records wet/dry capability for stirred and planetary equipment; the inventory is not a representative value-share dataset. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
- Evidence informing base-year allocation inputs; displayed values and growth are calculated: The planetary equipment is recorded as batch, supporting a laboratory batch context without assuming all laboratories are batch-only. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
- Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The planetary equipment is recorded as batch, supporting a laboratory batch context without assuming all laboratories are batch-only. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
- Evidence informing base-year allocation inputs; displayed values and growth are calculated: The laboratory jet rig is recorded as continuous, independently challenging equivalence between continuous mode and industrial scale. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
- Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The laboratory jet rig is recorded as continuous, independently challenging equivalence between continuous mode and industrial scale. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))

31. Dry Batch Or Continuous Laboratory Mills - Union Process

- Evidence informing base-year allocation inputs; displayed values and growth are calculated: Union Process identifies SD-xx.xx as one laboratory offering for both batch and continuous service. Configuration-specific purchase inclusion and revenue are undisclosed. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))
- Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Union Process identifies SD-xx.xx as one laboratory offering for both batch and continuous service. Configuration-specific purchase inclusion and revenue are undisclosed. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))
- Evidence informing base-year allocation inputs; displayed values and growth are calculated: The same named offering advertises wet/dry capability, supporting a dual-state category premise rather than an observed adoption percentage. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))
- Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The same named offering advertises wet/dry capability, supporting a dual-state category premise rather than an observed adoption percentage. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))

32. Retsch Contact & Services - Contact Partners Worldwide

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: RETSCH describes a network including daughter companies. Manufacturer affiliation, rather than contact location, informs direct-route attribution. ([retsch.com](https://www.retsch.com/contact-services/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: RETSCH describes a network including daughter companies. Manufacturer affiliation, rather than contact location, informs direct-route attribution. ([retsch.com](https://www.retsch.com/contact-services/))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The network also includes trained distributors, establishing a resale-access premise but not distributor ownership roles or annual sales weights. ([retsch.com](https://www.retsch.com/contact-services/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The network also includes trained distributors, establishing a resale-access premise but not distributor ownership roles or annual sales weights. ([retsch.com](https://www.retsch.com/contact-services/))

33. HOSOKAWA ALPINE Aktiengesellschaft - Conditions of Sale 371_00 EN

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Hosokawa requires company confirmation of representatives' transactions and makes contractual scope authoritative. The terms support agency-role attribution, not the assumed agent percentage. ([hosokawa-alpine.com](https://www.hosokawa-alpine.com/fileadmin/allgemein/Legal/AGB/AGB_Verkaufsbedingungen_en_371_00.pdf))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Hosokawa requires company confirmation of representatives' transactions and makes contractual scope authoritative. The terms support agency-role attribution, not the assumed agent percentage. ([hosokawa-alpine.com](https://www.hosokawa-alpine.com/fileadmin/allgemein/Legal/AGB/AGB_Verkaufsbedingungen_en_371_00.pdf))

34. UNSD - ISIC Rev.5, Class 4610: Wholesale on a Fee or Contract Basis

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: ISIC Rev.xx.xx class xx.xx defines fee/commission intermediation without ownership, supporting a non-title-taking agency numerator distinct from goods supplied on own account. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: ISIC Rev.xx.xx class xx.xx defines fee/commission intermediation without ownership, supporting a non-title-taking agency numerator distinct from goods supplied on own account. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Own-account wholesale is excluded from the agency class, supporting the reseller/agent partition without supplying ultrafine-mill channel shares. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own-account wholesale is excluded from the agency class, supporting the reseller/agent partition without supplying ultrafine-mill channel shares. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))

35. ITDI-PB-2024-057 - Supply, Delivery, Installation and Commissioning of Ultra-fine Friction Grinder

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The 2024 friction-grinder procurement had a PHP xx.xx budget and failed with no bidder. It establishes a configured-package spending ceiling and commercial category, not a sale or a shipment count. ([notices.philgeps.gov.ph](https://notices.philgeps.gov.ph/GEPSNONPILOT/Tender/PrintableBidNoticeAbstractUI.aspx?refid=xx.xx))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The 2024 friction-grinder procurement had a PHP xx.xx budget and failed with no bidder. It establishes a configured-package spending ceiling and commercial category, not a sale or a shipment count. ([notices.philgeps.gov.ph](https://notices.philgeps.gov.ph/GEPSNONPILOT/Tender/PrintableBidNoticeAbstractUI.aspx?refid=xx.xx))

36. Bangko Sentral ng Pilipinas - Balance of Payments Report, Q4 2024

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The central bank reports a 2024 average of PHP xx.xx per USD. Dividing the failed PHP xx.xx procurement budget by this rate gives an approximately USD xx.xx comparison ceiling, not realized equipment revenue. ([bsp.gov.ph](https://www.bsp.gov.ph/Media_And_Research/Balance%20of%20Payments%20Report/2024/BOP_4qtr2024.pdf))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The central bank reports a 2024 average of PHP xx.xx per USD. Dividing the failed PHP xx.xx procurement budget by this rate gives an approximately USD xx.xx comparison ceiling, not realized equipment revenue. ([bsp.gov.ph](https://www.bsp.gov.ph/Media_And_Research/Balance%20of%20Payments%20Report/2024/BOP_4qtr2024.pdf))

17.9. Russia

Table 406. Russia Ultra Fine Grinding Mill Market Size, 2017-2040 (USD Million)

Country	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Russia	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 407. Russia Ultra Fine Grinding Mill Market Size, by Supply Scope, 2017-2040 (USD Million)

Supply Scope	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Integrated Milling Packages	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Standalone Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 408. Russia Ultra Fine Grinding Mill Market Size, by Mill Technology, 2017-2040 (USD Million)

Mill Technology	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Cutting Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Disc and Colloid Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Gas-Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mechanical Impact Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Media Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Roller Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wet-Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 409. Russia Ultra Fine Grinding Mill Market Size, by Media Mills, 2017-2040 (USD Million)

Media Mills	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Rotary and Planetary Ball Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Stirred Media Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Vibratory Media Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 410. Russia Ultra Fine Grinding Mill Market Size, by Gas-Jet Mills, 2017-2040 (USD Million)

Gas-Jet Mills	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Loop Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Opposed-Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Spiral Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Target Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 411. Russia Ultra Fine Grinding Mill Market Size, by Processed Material, 2017-2040 (USD Million)

Processed Material	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Biomass and Natural Ingredients	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Carbonaceous Materials	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Formulations and Composites	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Industrial Minerals	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Inorganic Chemicals, Ceramics, and Glass	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Metal Ores and Concentrates	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Metals and Alloys	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Organic Chemicals	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Polymers and Elastomers	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 412. Russia Ultra Fine Grinding Mill Market Size, by Buyer Industry, 2017-2040 (USD Million)

Buyer Industry	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Chemical and Fuel Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Electrical and Electronic Product Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Food, Beverage, and Feed Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Glass, Ceramics, and Construction Materials Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Materials Recovery and Recycling	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Metals and Fabricated Metal Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mining and Mineral Processing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Pharmaceutical Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Power and Heat Generation	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Research, Education, and Testing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Rubber and Plastics Product Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wood, Pulp, and Paper Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 413. Russia Ultra Fine Grinding Mill Market Size, by Deployment Scale, 2017-2040 (USD Million)

Deployment Scale	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Industrial Production	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Laboratory	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Pilot	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 414. Russia Ultra Fine Grinding Mill Market Size, by Sales Channel, 2017-2040 (USD Million)

Sales Channel	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Agent-Mediated Sales	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Independent Reseller Sales	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Manufacturer-Direct Sales	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 415. Russia Ultra Fine Grinding Mill Market Size, by Processing State, 2017-2040 (USD Million)

Processing State	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Dry Grinding	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wet and Dry Grinding	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wet Grinding	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 416. Russia Ultra Fine Grinding Mill Market Size, by Operating Mode, 2017-2040 (USD Million)

Operating Mode	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Batch	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Batch and Continuous	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Continuous	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Sources & Evidence

1. Mach for mixing/kneading/crushing/grinding etc imports by country | 2021

   · Evidence informing base-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports were USD xx.xx. The model applies a qualified timing/access bridge and does not describe this as current trade.

   · Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports were USD xx.xx. The model applies a qualified timing/access bridge and does not describe this as current trade.

2. Crushing/grinding machines for earth/ stone/ore imports by country | 2021

   · Evidence informing base-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports of USD xx.xx provide the second historical purchasing primitive; the 2025 and 2032 allocations remain modeled.

   · Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Russian Federation 2021 HS xx.xx imports of USD xx.xx provide the second historical purchasing primitive; the 2025 and 2032 allocations remain modeled.

3. Hosokawa Micron - FY2025 Financial Results Presentation, November 25, 2025 (Japanese)
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; material attribution modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; material attribution modeled.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; establishment attribution modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; establishment attribution modeled.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; buyer attribution assumed.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; buyer attribution assumed.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; qualifying power attribution unverified.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; qualifying power attribution unverified.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; institutional attribution assumed.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; institutional attribution assumed.

4. Metso Receives Order for Grinding Mills to a Copper Project in Africa
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Approximately EUR xx.xx 2024 HIGmill order includes auxiliaries and services; a package-scale anchor, not recognized annual revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Approximately EUR xx.xx 2024 HIGmill order includes auxiliaries and services; a package-scale anchor, not recognized annual revenue.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The copper-project award establishes an ore/concentrate commercial purchasing context.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The copper-project award establishes an ore/concentrate commercial purchasing context.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The award concerns an African mining project; it does not disclose the global mining-buyer share.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The award concerns an African mining project; it does not disclose the global mining-buyer share.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Large industrial equipment procurement supports the production-scale category premise.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Large industrial equipment procurement supports the production-scale category premise.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The August xx.xx 2024 announcement records an approximately EUR xx.xx HIGmill order including auxiliaries and services. It anchors package-level commercial materiality, not a mill unit price or 2025 recognized revenue. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The August xx.xx 2024 announcement records an approximately EUR xx.xx HIGmill order including auxiliaries and services. It anchors package-level commercial materiality, not a mill unit price or 2025 recognized revenue. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The stirred-package order supports the Media Mills value-weight model and continuing commercial-demand premise, with order-to-revenue timing unresolved. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The stirred-package order supports the Media Mills value-weight model and continuing commercial-demand premise, with order-to-revenue timing unresolved. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
5. HIGmill Plant - Metso
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Standalone marketing terminology does not establish the study's Standalone Mills equipment scope.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Standalone marketing terminology does not establish the study's Standalone Mills equipment scope.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: HIGmill Plant includes pre-engineered auxiliary modules, supporting classification as an equipment package.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: HIGmill Plant includes pre-engineered auxiliary modules, supporting classification as an equipment package.

6. IsaMill - About, Technology Partnership and Engineering
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Delivery alternatives permit mill-only supply or additional auxiliary equipment; actual equipment scope determines attribution.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Delivery alternatives permit mill-only supply or additional auxiliary equipment; actual equipment scope determines attribution.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Modular auxiliary-inclusive and turnkey alternatives support differentiated package scope, without proving a global adoption percentage.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Modular auxiliary-inclusive and turnkey alternatives support differentiated package scope, without proving a global adoption percentage.
7. Commission Processing - NIPPON COKE & ENGINEERING CO., LTD.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Own commercial processing portfolio identifies glass, ceramics and inorganic materials; establishes material mapping, not equipment revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own commercial processing portfolio identifies glass, ceramics and inorganic materials; establishes material mapping, not equipment revenue.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Organic pigments are named commercial processing materials.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Organic pigments are named commercial processing materials.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Metal powders are named commercial processing materials.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Metal powders are named commercial processing materials.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Carbon is identified in the operator's commercial grinding portfolio.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Carbon is identified in the operator's commercial grinding portfolio.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Thermosetting resin supports a polymer-material category premise.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Thermosetting resin supports a polymer-material category premise.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Ink-related grinding establishes a commercial reference but does not resolve whole-formulation versus constituent duty.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Ink-related grinding establishes a commercial reference but does not resolve whole-formulation versus constituent duty.

8. Micronization / Grinding - A. Ebbecke Verfahrenstechnik AG
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Commercial contract-grinding coverage includes natural materials and food ingredients; processing fees are excluded from equipment value.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Commercial contract-grinding coverage includes natural materials and food ingredients; processing fees are excluded from equipment value.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Plastic granulates and resins establish material coverage, not downstream customers' equipment ownership.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Plastic granulates and resins establish material coverage, not downstream customers' equipment ownership.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operator-side food-processing reference supports establishment attribution rather than automatically assigning equipment to its customers.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operator-side food-processing reference supports establishment attribution rather than automatically assigning equipment to its customers.
9. Manufacturing Capabilities - Asbury Advanced Materials
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Own manufacturing disclosure identifies carbon-material grinding and micronization; supports the material-duty premise only.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own manufacturing disclosure identifies carbon-material grinding and micronization; supports the material-duty premise only.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Custom formulations and dispersions are commercial outputs, but joint whole-formulation milling remains unmeasured.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Custom formulations and dispersions are commercial outputs, but joint whole-formulation milling remains unmeasured.
10. Pyrum Innovations AG - Interim Group Report January 1 to June 30, 2025
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The purchaser's 2025 report records a grinding-plant installation associated with recovered carbon black; no downstream material revenue is counted.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The purchaser's 2025 report records a grinding-plant installation associated with recovered carbon black; no downstream material revenue is counted.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The report establishes an actual recovery-business equipment context, while the exact attributable mill expenditure remains undisclosed.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The report establishes an actual recovery-business equipment context, while the exact attributable mill expenditure remains undisclosed.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The disclosed commercial-site grinding installation supports Industrial Production classification.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The disclosed commercial-site grinding installation supports Industrial Production classification.

11. NRRI Advances Efficient Grinding Technology on the Iron Range
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The institution distinguishes a planned bench-scale purchase from its loaned pilot equipment; not a completed-sale census.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The institution distinguishes a planned bench-scale purchase from its loaned pilot equipment; not a completed-sale census.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The May xx.xx 2024 account identifies a loaned pilot stirred mill; unpaid placement is not counted as equipment-sale revenue.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The May xx.xx 2024 account identifies a loaned pilot stirred mill; unpaid placement is not counted as equipment-sale revenue.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operating research institute is distinct from its mining clients, supporting buyer/material separation.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operating research institute is distinct from its mining clients, supporting buyer/material separation.
12. Planetary Ball Mill PM 100 - RETSCH
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The PM xx.xx is marketed as a benchtop instrument, supporting the small-laboratory pool classification without establishing sales weight.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The PM xx.xx is marketed as a benchtop instrument, supporting the small-laboratory pool classification without establishing sales weight.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The individual-instrument offering supports a narrower equipment-supply alternative; package incidence remains modeled.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The individual-instrument offering supports a narrower equipment-supply alternative; package incidence remains modeled.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: PM xx.xx is a marketed benchtop planetary platform, supporting laboratory-category mapping rather than shipment or price weights. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: PM xx.xx is a marketed benchtop planetary platform, supporting laboratory-category mapping rather than shipment or price weights. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The product page advertises both dry and wet capability. Actual dual-state purchase inclusion remains an explicit model assumption. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The product page advertises both dry and wet capability. Actual dual-state purchase inclusion remains an explicit model assumption. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))

13. Jet Mill - Contract History CW2408170, CanadaBuys
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: A May xx.xx 2026 laboratory jet-mill award totals CAD xx.xx; a dated procurement check, not a 2025 shipment or global average price.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: A May xx.xx 2026 laboratory jet-mill award totals CAD xx.xx; a dated procurement check, not a 2025 shipment or global average price.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The record distinguishes Natural Resources Canada as buying organization from PSPC as contracting organization, supporting establishment attribution.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The record distinguishes Natural Resources Canada as buying organization from PSPC as contracting organization, supporting establishment attribution.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The jet-mill award totals CAD xx.xx and is dated May xx.xx 2026. It is a nearby-period laboratory purchasing comparator, not a 2025 recognized sale, and supplies neither a gas-jet subtype nor a definitive channel role. ([canadabuys.canada.ca](https://canadabuys.canada.ca/en/tender-opportunities/contract-history/cw2408170-xx.xx))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The jet-mill award totals CAD xx.xx and is dated May xx.xx 2026. It is a nearby-period laboratory purchasing comparator, not a 2025 recognized sale, and supplies neither a gas-jet subtype nor a definitive channel role. ([canadabuys.canada.ca](https://canadabuys.canada.ca/en/tender-opportunities/contract-history/cw2408170-xx.xx))
14. MFC Production Equipment - FiberLean
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The manufacturer's commercial offering targets pulp, paper and related establishments; it is not a measured industry sales share.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The manufacturer's commercial offering targets pulp, paper and related establishments; it is not a measured industry sales share.
15. Pulverizing Equipment - Coperion
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The broader portfolio names power-generation applications and separately lists ultrafine equipment; this limits, rather than verifies, the assumed qualifying power-buyer allocation.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The broader portfolio names power-generation applications and separately lists ultrafine equipment; this limits, rather than verifies, the assumed qualifying power-buyer allocation.
16. LG Energy Solution Releases 2025 Financial Results - January 29, 2026
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own 2025 revenue decline and dated 2026 capital-expenditure reduction target constrain battery-related equipment-adoption assumptions.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Existing-asset reuse strategy qualifies a direct downstream-demand-to-new-carbon-material-mill investment inference.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Buyer investment restraint constrains the relative application multiplier; upstream chemical attribution remains separately assumed.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own battery-manufacturer financial and investment plans provide a counter-test, not an ultrafine equipment purchasing total.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The January 2026 emphasis on reduced new investment qualifies automatic growth in broader equipment-package adoption.

17. UNSD Classification Detail - ISIC Rev.4, Class 3830: Materials Recovery
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The official classification distinguishes secondary-material recovery from manufacture of new final products; it supplies no equipment sales weight.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The official classification distinguishes secondary-material recovery from manufacture of new final products; it supplies no equipment sales weight.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Recovered-input use alone does not classify the equipment operator as a recovery establishment rather than a product manufacturer.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Recovered-input use alone does not classify the equipment operator as a recovery establishment rather than a product manufacturer.
18. Ultrafin Mill: Super Masscolloider, Masuko MKCA6-5J CE - University of Ljubljana
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The university inventories a laboratory ultrafine mill within wood science; the institutional operator is not a wood-products manufacturer.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The university inventories a laboratory ultrafine mill within wood science; the institutional operator is not a wood-products manufacturer.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The institutional inventory expressly identifies laboratory equipment, supporting deployment classification without establishing a purchase-year value.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The institutional inventory expressly identifies laboratory equipment, supporting deployment classification without establishing a purchase-year value.
19. Contract Manufacturing of Pharmaceuticals - YUKI GOSEI KOGYO CO., LTD.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operator distinguishes production jet mills from smaller equipment, supporting industrial deployment at a pharmaceutical contract manufacturer.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operator distinguishes production jet mills from smaller equipment, supporting industrial deployment at a pharmaceutical contract manufacturer.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The actual pharmaceutical manufacturing operator is distinct from customers outsourcing production; processing-service receipts remain excluded.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The actual pharmaceutical manufacturing operator is distinct from customers outsourcing production; processing-service receipts remain excluded.

20. Record year for Metso stirred mills as mining industry opts for energy-efficient comminution technology

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Metso reports more than twenty Vertimill sales in 2025 and approximately xx.xx cumulative stirred-mill deliveries. Broader application coverage prevents treating these as ultrafine-only annual shipments; they constrain the modeled stirred/mining allocation and forecast premise.
([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Metso reports more than twenty Vertimill sales in 2025 and approximately xx.xx cumulative stirred-mill deliveries. Broader application coverage prevents treating these as ultrafine-only annual shipments; they constrain the modeled stirred/mining allocation and forecast premise.
([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The disclosed stirred-equipment activity supports material Media Mills participation, not the final modeled parent share.
([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The disclosed stirred-equipment activity supports material Media Mills participation, not the final modeled parent share.
([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))

21. Bühler strengthens its market position

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Bühler reports xx.xx% Grinding & Dispersing order growth in 2025 against a xx.xx% decline in broader Advanced Materials orders. This is a mixed commercial leading indicator, not observed market-share growth.
([buhlergroup.com](https://www.buhlergroup.com/global/en/media/media-releases/b%C3%BChler-strengthens-its-marketposition.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Bühler reports xx.xx% Grinding & Dispersing order growth in 2025 against a xx.xx% decline in broader Advanced Materials orders. This is a mixed commercial leading indicator, not observed market-share growth.
([buhlergroup.com](https://www.buhlergroup.com/global/en/media/media-releases/b%C3%BChler-strengthens-its-marketposition.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The disclosed battery-related and other application orders constrain differentiated Media Mills forecast assumptions without converting orders directly to annual equipment revenue.
([buhlergroup.com](https://www.buhlergroup.com/global/en/media/media-releases/b%C3%BChler-strengthens-its-marketposition.html))

22. Management Greetings | HOSOKAWAMICRON CORPORATION

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Hosokawa reports FY2025 net sales of JPY xx.xx, down xx.xx%, and orders down xx.xx%. The diversified-company result challenges uniform purchasing acceleration and constrains, rather than directly measures, technology-mix assumptions.
([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/ir/management_policy/management_greetings.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Hosokawa reports FY2025 net sales of JPY xx.xx, down xx.xx%, and orders down xx.xx%. The diversified-company result challenges uniform purchasing acceleration and constrains, rather than directly measures, technology-mix assumptions.
([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/ir/management_policy/management_greetings.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The same broader financial contraction is counterevidence to assuming uniform Media Mills growth across suppliers; no corporate revenue is assigned directly to the category.
([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/ir/management_policy/management_greetings.html))

23. Details of micromeritics | HOSOKAWAMICRON CORPORATION

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Hosokawa identifies its AS spiral offering, supporting subtype mapping rather than a sales weight. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Hosokawa identifies its AS spiral offering, supporting subtype mapping rather than a sales weight. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The AFG/TFG counterjet offerings support the retained Opposed-Jet commercial mapping. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The AFG/TFG counterjet offerings support the retained Opposed-Jet commercial mapping. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The manufacturer identifies Innovomizer as a mechanical ultrafine offering; ordinary impact equipment is not automatically included. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The manufacturer identifies Innovomizer as a mechanical ultrafine offering; ordinary impact equipment is not automatically included. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

24. Grinding Equipment Manufacturer Supplier Factory, Grinding System | Longly

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: LONGLY discloses current annual capacity above 2,000 equipment units and commercial wet-grinding offerings. Capacity is bridged through explicitly assumed timing, utilization and eligible-product factors; it is not reported 2025 stirred-mill shipments. ([longlymill.com](https://www.longlymill.com/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: LONGLY discloses current annual capacity above 2,000 equipment units and commercial wet-grinding offerings. Capacity is bridged through explicitly assumed timing, utilization and eligible-product factors; it is not reported 2025 stirred-mill shipments. ([longlymill.com](https://www.longlymill.com/))

25. Ultra-Fine Grinding - Hosokawa Micron Malaysia

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The inspected ultrafine portfolio identifies AWM-F table-roller equipment, supporting the qualifying Roller Mills boundary, not its assumed counts or prices. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The inspected ultrafine portfolio identifies AWM-F table-roller equipment, supporting the qualifying Roller Mills boundary, not its assumed counts or prices. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Super Orion is a marketed rotary ball-mill constituent of the combined rotary/planetary category. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Super Orion is a marketed rotary ball-mill constituent of the combined rotary/planetary category. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: MJT is explicitly listed as a target-type offering, supporting precedence of the named platform over overlapping generic jet terminology. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: MJT is explicitly listed as a target-type offering, supporting precedence of the named platform over overlapping generic jet terminology. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

26. Loop Jet Mill - Consistency. Compliance. Engineered.

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The current named Loop Jet Mill listing establishes an offered commercial platform. It supports forecast category continuity, but does not disclose subtype revenue or prove 2025 sales. ([jetmillmfg.com](https://www.jetmillmfg.com/loop-jet-mill/))

27. SWECO Vibratory Grinding and Particle Size Reduction Equipment

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: SWECO markets Vibro-Energy grinding equipment with separate wet and wet/dry offerings. This supports commercial category and configuration mapping, not the modeled frequency of purchases. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: SWECO markets Vibro-Energy grinding equipment with separate wet and wet/dry offerings. This supports commercial category and configuration mapping, not the modeled frequency of purchases. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Named wet/dry models establish dual-state availability; they do not establish the exact supplied configuration or a market-wide value share. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Named wet/dry models establish dual-state availability; they do not establish the exact supplied configuration or a market-wide value share. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))

28. Fine-cutting mill with rotating classifying feature - the sensational new development!

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The September xx.xx 2014 own-product announcement establishes a pre-base-year SecoMy S cutting offering described for ultrafine commercial applications. It is category evidence, not annual equipment revenue. ([grinding.netzsch.com](https://grinding.netzsch.com/en/news/2014/fine-cutting-mill-with-rotating-classifying-feature-the-sensational-new-development))

29. NETZSCH SecoMy S - Precision Cutting Redefined!

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The August 2026 SecoMy S brochure confirms continuing commercial ultrafine-cutting positioning and system-supply availability. It supports category persistence, not the assumed forecast spending share. ([grinding.netzsch.com](https://grinding.netzsch.com/_Resources/Persistent/xx.xx/e/xx.xx/b/8e4b5adcfc16fcc2d83974f8080d614cce1a2c01/NETZSCH_Fine_Cutting_Mill_SecoMy_S_e.pdf))

30. Wet Milling and Dispersing Device - Star Burst - Sugino Corp.

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: SUGINO's Star Burst portfolio identifies wet-jet equipment across research and production purchasing contexts. Only milling-attributable supply is included; adjacent droplet-only or dispersion activity is not automatically counted. ([suginocorp.com](https://www.suginocorp.com/star-burst/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: SUGINO's Star Burst portfolio identifies wet-jet equipment across research and production purchasing contexts. Only milling-attributable supply is included; adjacent droplet-only or dispersion activity is not automatically counted. ([suginocorp.com](https://www.suginocorp.com/star-burst/))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The wet-jet offering supports wet-state classification within the joint value model, not the total Wet Grinding share. ([suginocorp.com](https://www.suginocorp.com/star-burst/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The wet-jet offering supports wet-state classification within the joint value model, not the total Wet Grinding share. ([suginocorp.com](https://www.suginocorp.com/star-burst/))

31. IBU-tec | Mills - Milling Technology for Dry and Wet Grinding
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operator table separately lists two dry opposed-jet units. This is an installed-inventory observation, not a shipment or revenue ratio. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operator table separately lists two dry opposed-jet units. This is an installed-inventory observation, not a shipment or revenue ratio. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Three wet agitator-bead units are separately inventoried, supporting state-specific commercial classification without using their count as a market weight. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Three wet agitator-bead units are separately inventoried, supporting state-specific commercial classification without using their count as a market weight. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
32. Comminution - NTNU
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: NTNU separately records wet/dry capability for stirred and planetary equipment; the inventory is not a representative value-share dataset. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: NTNU separately records wet/dry capability for stirred and planetary equipment; the inventory is not a representative value-share dataset. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The planetary equipment is recorded as batch, supporting a laboratory batch context without assuming all laboratories are batch-only. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The planetary equipment is recorded as batch, supporting a laboratory batch context without assuming all laboratories are batch-only. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The laboratory jet rig is recorded as continuous, independently challenging equivalence between continuous mode and industrial scale. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The laboratory jet rig is recorded as continuous, independently challenging equivalence between continuous mode and industrial scale. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
33. Dry Batch Or Continuous Laboratory Mills - Union Process
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Union Process identifies SD-xx.xx as one laboratory offering for both batch and continuous service. Configuration-specific purchase inclusion and revenue are undisclosed. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Union Process identifies SD-xx.xx as one laboratory offering for both batch and continuous service. Configuration-specific purchase inclusion and revenue are undisclosed. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The same named offering advertises wet/dry capability, supporting a dual-state category premise rather than an observed adoption percentage. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The same named offering advertises wet/dry capability, supporting a dual-state category premise rather than an observed adoption percentage. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))

34. Retsch Contact & Services - Contact Partners Worldwide

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: RETSCH describes a network including daughter companies. Manufacturer affiliation, rather than contact location, informs direct-route attribution. ([retsch.com](https://www.retsch.com/contact-services/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: RETSCH describes a network including daughter companies. Manufacturer affiliation, rather than contact location, informs direct-route attribution. ([retsch.com](https://www.retsch.com/contact-services/))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The network also includes trained distributors, establishing a resale-access premise but not distributor ownership roles or annual sales weights. ([retsch.com](https://www.retsch.com/contact-services/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The network also includes trained distributors, establishing a resale-access premise but not distributor ownership roles or annual sales weights. ([retsch.com](https://www.retsch.com/contact-services/))

35. HOSOKAWA ALPINE Aktiengesellschaft - Conditions of Sale 371_00 EN

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Hosokawa requires company confirmation of representatives' transactions and makes contractual scope authoritative. The terms support agency-role attribution, not the assumed agent percentage. ([hosokawa-alpine.com](https://www.hosokawa-alpine.com/fileadmin/allgemein/Legal/AGB/AGB_Verkaufsbedingungen_en_371_00.pdf))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Hosokawa requires company confirmation of representatives' transactions and makes contractual scope authoritative. The terms support agency-role attribution, not the assumed agent percentage. ([hosokawa-alpine.com](https://www.hosokawa-alpine.com/fileadmin/allgemein/Legal/AGB/AGB_Verkaufsbedingungen_en_371_00.pdf))

36. UNSD - ISIC Rev.5, Class 4610: Wholesale on a Fee or Contract Basis

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: ISIC Rev.xx.xx class xx.xx defines fee/commission intermediation without ownership, supporting a non-title-taking agency numerator distinct from goods supplied on own account. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: ISIC Rev.xx.xx class xx.xx defines fee/commission intermediation without ownership, supporting a non-title-taking agency numerator distinct from goods supplied on own account. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Own-account wholesale is excluded from the agency class, supporting the reseller/agent partition without supplying ultrafine-mill channel shares. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own-account wholesale is excluded from the agency class, supporting the reseller/agent partition without supplying ultrafine-mill channel shares. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))

37. ITDI-PB-2024-057 - Supply, Delivery, Installation and Commissioning of Ultra-fine Friction Grinder

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The 2024 friction-grinder procurement had a PHP xx.xx budget and failed with no bidder. It establishes a configured-package spending ceiling and commercial category, not a sale or a shipment count. ([notices.philgeps.gov.ph](https://notices.philgeps.gov.ph/GEPSNONPILOT/Tender/PrintableBidNoticeAbstractUI.aspx?refid=xx.xx))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The 2024 friction-grinder procurement had a PHP xx.xx budget and failed with no bidder. It establishes a configured-package spending ceiling and commercial category, not a sale or a shipment count. ([notices.philgeps.gov.ph](https://notices.philgeps.gov.ph/GEPSNONPILOT/Tender/PrintableBidNoticeAbstractUI.aspx?refid=xx.xx))

38. Bangko Sentral ng Pilipinas - Balance of Payments Report, Q4 2024

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The central bank reports a 2024 average of PHP xx.xx per USD. Dividing the failed PHP xx.xx procurement budget by this rate gives an approximately USD xx.xx comparison ceiling, not realized equipment revenue. ([bsp.gov.ph](https://www.bsp.gov.ph/Media_And_Research/Balance%20of%20Payments%20Report/2024/BOP_4qtr2024.pdf))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The central bank reports a 2024 average of PHP xx.xx per USD. Dividing the failed PHP xx.xx procurement budget by this rate gives an approximately USD xx.xx comparison ceiling, not realized equipment revenue. ([bsp.gov.ph](https://www.bsp.gov.ph/Media_And_Research/Balance%20of%20Payments%20Report/2024/BOP_4qtr2024.pdf))

17.10. Brazil

Table 417. Brazil Ultra Fine Grinding Mill Market Size, 2017-2040 (USD Million)

Country	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Brazil	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 418. Brazil Ultra Fine Grinding Mill Market Size, by Supply Scope, 2017-2040 (USD Million)

Supply Scope	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Integrated Milling Packages	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Standalone Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 419. Brazil Ultra Fine Grinding Mill Market Size, by Mill Technology, 2017-2040 (USD Million)

Mill Technology	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Cutting Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Disc and Colloid Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Gas-Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mechanical Impact Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Media Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Roller Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wet-Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 420. Brazil Ultra Fine Grinding Mill Market Size, by Media Mills, 2017-2040 (USD Million)

Media Mills	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Rotary and Planetary Ball Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Stirred Media Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Vibratory Media Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 421. Brazil Ultra Fine Grinding Mill Market Size, by Gas-Jet Mills, 2017-2040 (USD Million)

Gas-Jet Mills	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Loop Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Opposed-Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Spiral Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Target Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 422. Brazil Ultra Fine Grinding Mill Market Size, by Processed Material, 2017-2040 (USD Million)

Processed Material	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Biomass and Natural Ingredients	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Carbonaceous Materials	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Formulations and Composites	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Industrial Minerals	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Inorganic Chemicals, Ceramics, and Glass	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Metal Ores and Concentrates	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Metals and Alloys	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Organic Chemicals	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Polymers and Elastomers	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 423. Brazil Ultra Fine Grinding Mill Market Size, by Buyer Industry, 2017-2040 (USD Million)

Buyer Industry	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Chemical and Fuel Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Electrical and Electronic Product Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Food, Beverage, and Feed Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Glass, Ceramics, and Construction Materials Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Materials Recovery and Recycling	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Metals and Fabricated Metal Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mining and Mineral Processing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Pharmaceutical Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Power and Heat Generation	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Research, Education, and Testing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Rubber and Plastics Product Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wood, Pulp, and Paper Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 424. Brazil Ultra Fine Grinding Mill Market Size, by Deployment Scale, 2017-2040 (USD Million)

Deployment Scale	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Industrial Production	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Laboratory	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Pilot	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 425. Brazil Ultra Fine Grinding Mill Market Size, by Sales Channel, 2017-2040 (USD Million)

Sales Channel	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Agent-Mediated Sales	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Independent Reseller Sales	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Manufacturer-Direct Sales	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 426. Brazil Ultra Fine Grinding Mill Market Size, by Processing State, 2017-2040 (USD Million)

Processing State	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Dry Grinding	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wet and Dry Grinding	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wet Grinding	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 427. Brazil Ultra Fine Grinding Mill Market Size, by Operating Mode, 2017-2040 (USD Million)

Operating Mode	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Batch	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Batch and Continuous	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Continuous	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Sources & Evidence

1. Business Unit Grinding & Dispersing - NETZSCH

   · Evidence informing base-year allocation inputs; displayed values and growth are calculated: Brazilian local production and commercial operations qualify reliance on imports alone, without establishing the assumed domestic sales amount.

   · Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Brazilian local production and commercial operations qualify reliance on imports alone, without establishing the assumed domestic sales amount.

2. Hosokawa Micron - FY2025 Financial Results Presentation, November 25, 2025 (Japanese)
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; material attribution modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; material attribution modeled.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; establishment attribution modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; establishment attribution modeled.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; buyer attribution assumed.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; buyer attribution assumed.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; qualifying power attribution unverified.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; qualifying power attribution unverified.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; institutional attribution assumed.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; institutional attribution assumed.

3. Metso Receives Order for Grinding Mills to a Copper Project in Africa
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Approximately EUR xx.xx 2024 HIGmill order includes auxiliaries and services; a package-scale anchor, not recognized annual revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Approximately EUR xx.xx 2024 HIGmill order includes auxiliaries and services; a package-scale anchor, not recognized annual revenue.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The copper-project award establishes an ore/concentrate commercial purchasing context.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The copper-project award establishes an ore/concentrate commercial purchasing context.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The award concerns an African mining project; it does not disclose the global mining-buyer share.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The award concerns an African mining project; it does not disclose the global mining-buyer share.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Large industrial equipment procurement supports the production-scale category premise.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Large industrial equipment procurement supports the production-scale category premise.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The August xx.xx 2024 announcement records an approximately EUR xx.xx HIGmill order including auxiliaries and services. It anchors package-level commercial materiality, not a mill unit price or 2025 recognized revenue. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The August xx.xx 2024 announcement records an approximately EUR xx.xx HIGmill order including auxiliaries and services. It anchors package-level commercial materiality, not a mill unit price or 2025 recognized revenue. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The stirred-package order supports the Media Mills value-weight model and continuing commercial-demand premise, with order-to-revenue timing unresolved. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The stirred-package order supports the Media Mills value-weight model and continuing commercial-demand premise, with order-to-revenue timing unresolved. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
4. HIGmill Plant - Metso
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Standalone marketing terminology does not establish the study's Standalone Mills equipment scope.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Standalone marketing terminology does not establish the study's Standalone Mills equipment scope.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: HIGmill Plant includes pre-engineered auxiliary modules, supporting classification as an equipment package.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: HIGmill Plant includes pre-engineered auxiliary modules, supporting classification as an equipment package.

5. IsaMill - About, Technology Partnership and Engineering
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Delivery alternatives permit mill-only supply or additional auxiliary equipment; actual equipment scope determines attribution.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Delivery alternatives permit mill-only supply or additional auxiliary equipment; actual equipment scope determines attribution.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Modular auxiliary-inclusive and turnkey alternatives support differentiated package scope, without proving a global adoption percentage.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Modular auxiliary-inclusive and turnkey alternatives support differentiated package scope, without proving a global adoption percentage.
6. Commission Processing - NIPPON COKE & ENGINEERING CO., LTD.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Own commercial processing portfolio identifies glass, ceramics and inorganic materials; establishes material mapping, not equipment revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own commercial processing portfolio identifies glass, ceramics and inorganic materials; establishes material mapping, not equipment revenue.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Organic pigments are named commercial processing materials.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Organic pigments are named commercial processing materials.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Metal powders are named commercial processing materials.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Metal powders are named commercial processing materials.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Carbon is identified in the operator's commercial grinding portfolio.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Carbon is identified in the operator's commercial grinding portfolio.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Thermosetting resin supports a polymer-material category premise.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Thermosetting resin supports a polymer-material category premise.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Ink-related grinding establishes a commercial reference but does not resolve whole-formulation versus constituent duty.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Ink-related grinding establishes a commercial reference but does not resolve whole-formulation versus constituent duty.

7. Micronization / Grinding - A. Ebbecke Verfahrenstechnik AG
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Commercial contract-grinding coverage includes natural materials and food ingredients; processing fees are excluded from equipment value.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Commercial contract-grinding coverage includes natural materials and food ingredients; processing fees are excluded from equipment value.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Plastic granulates and resins establish material coverage, not downstream customers' equipment ownership.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Plastic granulates and resins establish material coverage, not downstream customers' equipment ownership.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operator-side food-processing reference supports establishment attribution rather than automatically assigning equipment to its customers.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operator-side food-processing reference supports establishment attribution rather than automatically assigning equipment to its customers.
8. Manufacturing Capabilities - Asbury Advanced Materials
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Own manufacturing disclosure identifies carbon-material grinding and micronization; supports the material-duty premise only.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own manufacturing disclosure identifies carbon-material grinding and micronization; supports the material-duty premise only.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Custom formulations and dispersions are commercial outputs, but joint whole-formulation milling remains unmeasured.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Custom formulations and dispersions are commercial outputs, but joint whole-formulation milling remains unmeasured.
9. Pyrum Innovations AG - Interim Group Report January 1 to June 30, 2025
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The purchaser's 2025 report records a grinding-plant installation associated with recovered carbon black; no downstream material revenue is counted.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The purchaser's 2025 report records a grinding-plant installation associated with recovered carbon black; no downstream material revenue is counted.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The report establishes an actual recovery-business equipment context, while the exact attributable mill expenditure remains undisclosed.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The report establishes an actual recovery-business equipment context, while the exact attributable mill expenditure remains undisclosed.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The disclosed commercial-site grinding installation supports Industrial Production classification.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The disclosed commercial-site grinding installation supports Industrial Production classification.

10. NRRI Advances Efficient Grinding Technology on the Iron Range
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The institution distinguishes a planned bench-scale purchase from its loaned pilot equipment; not a completed-sale census.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The institution distinguishes a planned bench-scale purchase from its loaned pilot equipment; not a completed-sale census.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The May xx.xx 2024 account identifies a loaned pilot stirred mill; unpaid placement is not counted as equipment-sale revenue.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The May xx.xx 2024 account identifies a loaned pilot stirred mill; unpaid placement is not counted as equipment-sale revenue.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operating research institute is distinct from its mining clients, supporting buyer/material separation.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operating research institute is distinct from its mining clients, supporting buyer/material separation.
11. Planetary Ball Mill PM 100 - RETSCH
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The PM xx.xx is marketed as a benchtop instrument, supporting the small-laboratory pool classification without establishing sales weight.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The PM xx.xx is marketed as a benchtop instrument, supporting the small-laboratory pool classification without establishing sales weight.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The individual-instrument offering supports a narrower equipment-supply alternative; package incidence remains modeled.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The individual-instrument offering supports a narrower equipment-supply alternative; package incidence remains modeled.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: PM xx.xx is a marketed benchtop planetary platform, supporting laboratory-category mapping rather than shipment or price weights. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: PM xx.xx is a marketed benchtop planetary platform, supporting laboratory-category mapping rather than shipment or price weights. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The product page advertises both dry and wet capability. Actual dual-state purchase inclusion remains an explicit model assumption. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The product page advertises both dry and wet capability. Actual dual-state purchase inclusion remains an explicit model assumption. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))

12. Jet Mill - Contract History CW2408170, CanadaBuys
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: A May xx.xx 2026 laboratory jet-mill award totals CAD xx.xx; a dated procurement check, not a 2025 shipment or global average price.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: A May xx.xx 2026 laboratory jet-mill award totals CAD xx.xx; a dated procurement check, not a 2025 shipment or global average price.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The record distinguishes Natural Resources Canada as buying organization from PSPC as contracting organization, supporting establishment attribution.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The record distinguishes Natural Resources Canada as buying organization from PSPC as contracting organization, supporting establishment attribution.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The jet-mill award totals CAD xx.xx and is dated May xx.xx 2026. It is a nearby-period laboratory purchasing comparator, not a 2025 recognized sale, and supplies neither a gas-jet subtype nor a definitive channel role. ([canadabuys.canada.ca](https://canadabuys.canada.ca/en/tender-opportunities/contract-history/cw2408170-xx.xx))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The jet-mill award totals CAD xx.xx and is dated May xx.xx 2026. It is a nearby-period laboratory purchasing comparator, not a 2025 recognized sale, and supplies neither a gas-jet subtype nor a definitive channel role. ([canadabuys.canada.ca](https://canadabuys.canada.ca/en/tender-opportunities/contract-history/cw2408170-xx.xx))
13. MFC Production Equipment - FiberLean
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The manufacturer's commercial offering targets pulp, paper and related establishments; it is not a measured industry sales share.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The manufacturer's commercial offering targets pulp, paper and related establishments; it is not a measured industry sales share.
14. Pulverizing Equipment - Coperion
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The broader portfolio names power-generation applications and separately lists ultrafine equipment; this limits, rather than verifies, the assumed qualifying power-buyer allocation.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The broader portfolio names power-generation applications and separately lists ultrafine equipment; this limits, rather than verifies, the assumed qualifying power-buyer allocation.
15. LG Energy Solution Releases 2025 Financial Results - January 29, 2026
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own 2025 revenue decline and dated 2026 capital-expenditure reduction target constrain battery-related equipment-adoption assumptions.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Existing-asset reuse strategy qualifies a direct downstream-demand-to-new-carbon-material-mill investment inference.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Buyer investment restraint constrains the relative application multiplier; upstream chemical attribution remains separately assumed.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own battery-manufacturer financial and investment plans provide a counter-test, not an ultrafine equipment purchasing total.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The January 2026 emphasis on reduced new investment qualifies automatic growth in broader equipment-package adoption.

16. UNSD Classification Detail - ISIC Rev.4, Class 3830: Materials Recovery
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The official classification distinguishes secondary-material recovery from manufacture of new final products; it supplies no equipment sales weight.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The official classification distinguishes secondary-material recovery from manufacture of new final products; it supplies no equipment sales weight.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Recovered-input use alone does not classify the equipment operator as a recovery establishment rather than a product manufacturer.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Recovered-input use alone does not classify the equipment operator as a recovery establishment rather than a product manufacturer.
17. Ultrafin Mill: Super Masscolloider, Masuko MKCA6-5J CE - University of Ljubljana
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The university inventories a laboratory ultrafine mill within wood science; the institutional operator is not a wood-products manufacturer.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The university inventories a laboratory ultrafine mill within wood science; the institutional operator is not a wood-products manufacturer.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The institutional inventory expressly identifies laboratory equipment, supporting deployment classification without establishing a purchase-year value.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The institutional inventory expressly identifies laboratory equipment, supporting deployment classification without establishing a purchase-year value.
18. Contract Manufacturing of Pharmaceuticals - YUKI GOSEI KOGYO CO., LTD.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operator distinguishes production jet mills from smaller equipment, supporting industrial deployment at a pharmaceutical contract manufacturer.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operator distinguishes production jet mills from smaller equipment, supporting industrial deployment at a pharmaceutical contract manufacturer.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The actual pharmaceutical manufacturing operator is distinct from customers outsourcing production; processing-service receipts remain excluded.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The actual pharmaceutical manufacturing operator is distinct from customers outsourcing production; processing-service receipts remain excluded.

19. Record year for Metso stirred mills as mining industry opts for energy-efficient comminution technology

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Metso reports more than twenty Vertimill sales in 2025 and approximately xx.xx cumulative stirred-mill deliveries. Broader application coverage prevents treating these as ultrafine-only annual shipments; they constrain the modeled stirred/mining allocation and forecast premise.
([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Metso reports more than twenty Vertimill sales in 2025 and approximately xx.xx cumulative stirred-mill deliveries. Broader application coverage prevents treating these as ultrafine-only annual shipments; they constrain the modeled stirred/mining allocation and forecast premise.
([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The disclosed stirred-equipment activity supports material Media Mills participation, not the final modeled parent share.
([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The disclosed stirred-equipment activity supports material Media Mills participation, not the final modeled parent share.
([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))

20. Bühler strengthens its market position

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Bühler reports xx.xx% Grinding & Dispersing order growth in 2025 against a xx.xx% decline in broader Advanced Materials orders. This is a mixed commercial leading indicator, not observed market-share growth.
([buhlergroup.com](https://www.buhlergroup.com/global/en/media/media-releases/b%C3%BChler-strengthens-its-marketposition.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Bühler reports xx.xx% Grinding & Dispersing order growth in 2025 against a xx.xx% decline in broader Advanced Materials orders. This is a mixed commercial leading indicator, not observed market-share growth.
([buhlergroup.com](https://www.buhlergroup.com/global/en/media/media-releases/b%C3%BChler-strengthens-its-marketposition.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The disclosed battery-related and other application orders constrain differentiated Media Mills forecast assumptions without converting orders directly to annual equipment revenue.
([buhlergroup.com](https://www.buhlergroup.com/global/en/media/media-releases/b%C3%BChler-strengthens-its-marketposition.html))

21. Management Greetings | HOSOKAWAMICRON CORPORATION

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Hosokawa reports FY2025 net sales of JPY xx.xx, down xx.xx%, and orders down xx.xx%. The diversified-company result challenges uniform purchasing acceleration and constrains, rather than directly measures, technology-mix assumptions.
([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/ir/management_policy/management_greetings.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Hosokawa reports FY2025 net sales of JPY xx.xx, down xx.xx%, and orders down xx.xx%. The diversified-company result challenges uniform purchasing acceleration and constrains, rather than directly measures, technology-mix assumptions.
([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/ir/management_policy/management_greetings.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The same broader financial contraction is counterevidence to assuming uniform Media Mills growth across suppliers; no corporate revenue is assigned directly to the category.
([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/ir/management_policy/management_greetings.html))

22. Details of micromeritics | HOSOKAWAMICRON CORPORATION

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Hosokawa identifies its AS spiral offering, supporting subtype mapping rather than a sales weight. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Hosokawa identifies its AS spiral offering, supporting subtype mapping rather than a sales weight. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The AFG/TFG counterjet offerings support the retained Opposed-Jet commercial mapping. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The AFG/TFG counterjet offerings support the retained Opposed-Jet commercial mapping. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The manufacturer identifies Innovomizer as a mechanical ultrafine offering; ordinary impact equipment is not automatically included. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The manufacturer identifies Innovomizer as a mechanical ultrafine offering; ordinary impact equipment is not automatically included. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

23. Grinding Equipment Manufacturer Supplier Factory, Grinding System | Longly

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: LONGLY discloses current annual capacity above 2,000 equipment units and commercial wet-grinding offerings. Capacity is bridged through explicitly assumed timing, utilization and eligible-product factors; it is not reported 2025 stirred-mill shipments. ([longlymill.com](https://www.longlymill.com/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: LONGLY discloses current annual capacity above 2,000 equipment units and commercial wet-grinding offerings. Capacity is bridged through explicitly assumed timing, utilization and eligible-product factors; it is not reported 2025 stirred-mill shipments. ([longlymill.com](https://www.longlymill.com/))

24. Ultra-Fine Grinding - Hosokawa Micron Malaysia

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The inspected ultrafine portfolio identifies AWM-F table-roller equipment, supporting the qualifying Roller Mills boundary, not its assumed counts or prices. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The inspected ultrafine portfolio identifies AWM-F table-roller equipment, supporting the qualifying Roller Mills boundary, not its assumed counts or prices. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Super Orion is a marketed rotary ball-mill constituent of the combined rotary/planetary category. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Super Orion is a marketed rotary ball-mill constituent of the combined rotary/planetary category. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: MJT is explicitly listed as a target-type offering, supporting precedence of the named platform over overlapping generic jet terminology. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: MJT is explicitly listed as a target-type offering, supporting precedence of the named platform over overlapping generic jet terminology. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

25. Loop Jet Mill - Consistency. Compliance. Engineered.

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The current named Loop Jet Mill listing establishes an offered commercial platform. It supports forecast category continuity, but does not disclose subtype revenue or prove 2025 sales. ([jetmillmfg.com](https://www.jetmillmfg.com/loop-jet-mill/))

26. SWECO Vibratory Grinding and Particle Size Reduction Equipment

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: SWECO markets Vibro-Energy grinding equipment with separate wet and wet/dry offerings. This supports commercial category and configuration mapping, not the modeled frequency of purchases. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: SWECO markets Vibro-Energy grinding equipment with separate wet and wet/dry offerings. This supports commercial category and configuration mapping, not the modeled frequency of purchases. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Named wet/dry models establish dual-state availability; they do not establish the exact supplied configuration or a market-wide value share. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Named wet/dry models establish dual-state availability; they do not establish the exact supplied configuration or a market-wide value share. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))

27. Fine-cutting mill with rotating classifying feature - the sensational new development!

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The September xx.xx 2014 own-product announcement establishes a pre-base-year SecoMy S cutting offering described for ultrafine commercial applications. It is category evidence, not annual equipment revenue. ([grinding.netzsch.com](https://grinding.netzsch.com/en/news/2014/fine-cutting-mill-with-rotating-classifying-feature-the-sensational-new-development))

28. NETZSCH SecoMy S - Precision Cutting Redefined!

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The August 2026 SecoMy S brochure confirms continuing commercial ultrafine-cutting positioning and system-supply availability. It supports category persistence, not the assumed forecast spending share. ([grinding.netzsch.com](https://grinding.netzsch.com/_Resources/Persistent/xx.xx/e/xx.xx/b/8e4b5adcfc16fcc2d83974f8080d614cce1a2c01/NETZSCH_Fine_Cutting_Mill_SecoMy_S_e.pdf))

29. Wet Milling and Dispersing Device - Star Burst - Sugino Corp.

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: SUGINO's Star Burst portfolio identifies wet-jet equipment across research and production purchasing contexts. Only milling-attributable supply is included; adjacent droplet-only or dispersion activity is not automatically counted. ([suginocorp.com](https://www.suginocorp.com/star-burst/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: SUGINO's Star Burst portfolio identifies wet-jet equipment across research and production purchasing contexts. Only milling-attributable supply is included; adjacent droplet-only or dispersion activity is not automatically counted. ([suginocorp.com](https://www.suginocorp.com/star-burst/))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The wet-jet offering supports wet-state classification within the joint value model, not the total Wet Grinding share. ([suginocorp.com](https://www.suginocorp.com/star-burst/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The wet-jet offering supports wet-state classification within the joint value model, not the total Wet Grinding share. ([suginocorp.com](https://www.suginocorp.com/star-burst/))

30. IBU-tec | Mills - Milling Technology for Dry and Wet Grinding
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operator table separately lists two dry opposed-jet units. This is an installed-inventory observation, not a shipment or revenue ratio. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operator table separately lists two dry opposed-jet units. This is an installed-inventory observation, not a shipment or revenue ratio. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Three wet agitator-bead units are separately inventoried, supporting state-specific commercial classification without using their count as a market weight. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Three wet agitator-bead units are separately inventoried, supporting state-specific commercial classification without using their count as a market weight. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
31. Comminution - NTNU
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: NTNU separately records wet/dry capability for stirred and planetary equipment; the inventory is not a representative value-share dataset. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: NTNU separately records wet/dry capability for stirred and planetary equipment; the inventory is not a representative value-share dataset. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The planetary equipment is recorded as batch, supporting a laboratory batch context without assuming all laboratories are batch-only. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The planetary equipment is recorded as batch, supporting a laboratory batch context without assuming all laboratories are batch-only. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The laboratory jet rig is recorded as continuous, independently challenging equivalence between continuous mode and industrial scale. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The laboratory jet rig is recorded as continuous, independently challenging equivalence between continuous mode and industrial scale. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
32. Dry Batch Or Continuous Laboratory Mills - Union Process
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Union Process identifies SD-xx.xx as one laboratory offering for both batch and continuous service. Configuration-specific purchase inclusion and revenue are undisclosed. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Union Process identifies SD-xx.xx as one laboratory offering for both batch and continuous service. Configuration-specific purchase inclusion and revenue are undisclosed. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The same named offering advertises wet/dry capability, supporting a dual-state category premise rather than an observed adoption percentage. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The same named offering advertises wet/dry capability, supporting a dual-state category premise rather than an observed adoption percentage. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))

33. Retsch Contact & Services - Contact Partners Worldwide

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: RETSCH describes a network including daughter companies. Manufacturer affiliation, rather than contact location, informs direct-route attribution. ([retsch.com](https://www.retsch.com/contact-services/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: RETSCH describes a network including daughter companies. Manufacturer affiliation, rather than contact location, informs direct-route attribution. ([retsch.com](https://www.retsch.com/contact-services/))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The network also includes trained distributors, establishing a resale-access premise but not distributor ownership roles or annual sales weights. ([retsch.com](https://www.retsch.com/contact-services/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The network also includes trained distributors, establishing a resale-access premise but not distributor ownership roles or annual sales weights. ([retsch.com](https://www.retsch.com/contact-services/))

34. HOSOKAWA ALPINE Aktiengesellschaft - Conditions of Sale 371_00 EN

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Hosokawa requires company confirmation of representatives' transactions and makes contractual scope authoritative. The terms support agency-role attribution, not the assumed agent percentage. ([hosokawa-alpine.com](https://www.hosokawa-alpine.com/fileadmin/allgemein/Legal/AGB/AGB_Verkaufsbedingungen_en_371_00.pdf))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Hosokawa requires company confirmation of representatives' transactions and makes contractual scope authoritative. The terms support agency-role attribution, not the assumed agent percentage. ([hosokawa-alpine.com](https://www.hosokawa-alpine.com/fileadmin/allgemein/Legal/AGB/AGB_Verkaufsbedingungen_en_371_00.pdf))

35. UNSD - ISIC Rev.5, Class 4610: Wholesale on a Fee or Contract Basis

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: ISIC Rev.xx.xx class xx.xx defines fee/commission intermediation without ownership, supporting a non-title-taking agency numerator distinct from goods supplied on own account. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: ISIC Rev.xx.xx class xx.xx defines fee/commission intermediation without ownership, supporting a non-title-taking agency numerator distinct from goods supplied on own account. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Own-account wholesale is excluded from the agency class, supporting the reseller/agent partition without supplying ultrafine-mill channel shares. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own-account wholesale is excluded from the agency class, supporting the reseller/agent partition without supplying ultrafine-mill channel shares. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))

36. ITDI-PB-2024-057 - Supply, Delivery, Installation and Commissioning of Ultra-fine Friction Grinder

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The 2024 friction-grinder procurement had a PHP xx.xx budget and failed with no bidder. It establishes a configured-package spending ceiling and commercial category, not a sale or a shipment count. ([notices.philgeps.gov.ph](https://notices.philgeps.gov.ph/GEPSNONPILOT/Tender/PrintableBidNoticeAbstractUI.aspx?refid=xx.xx))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The 2024 friction-grinder procurement had a PHP xx.xx budget and failed with no bidder. It establishes a configured-package spending ceiling and commercial category, not a sale or a shipment count. ([notices.philgeps.gov.ph](https://notices.philgeps.gov.ph/GEPSNONPILOT/Tender/PrintableBidNoticeAbstractUI.aspx?refid=xx.xx))

37. Bangko Sentral ng Pilipinas - Balance of Payments Report, Q4 2024

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The central bank reports a 2024 average of PHP xx.xx per USD. Dividing the failed PHP xx.xx procurement budget by this rate gives an approximately USD xx.xx comparison ceiling, not realized equipment revenue. ([bsp.gov.ph](https://www.bsp.gov.ph/Media_And_Research/Balance%20of%20Payments%20Report/2024/BOP_4qtr2024.pdf))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The central bank reports a 2024 average of PHP xx.xx per USD. Dividing the failed PHP xx.xx procurement budget by this rate gives an approximately USD xx.xx comparison ceiling, not realized equipment revenue. ([bsp.gov.ph](https://www.bsp.gov.ph/Media_And_Research/Balance%20of%20Payments%20Report/2024/BOP_4qtr2024.pdf))

17.11. Italy

Table 428. Italy Ultra Fine Grinding Mill Market Size, 2017-2040 (USD Million)

Country	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Italy	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 429. Italy Ultra Fine Grinding Mill Market Size, by Supply Scope, 2017-2040 (USD Million)

Supply Scope	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Integrated Milling Packages	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Standalone Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 430. Italy Ultra Fine Grinding Mill Market Size, by Mill Technology, 2017-2040 (USD Million)

Mill Technology	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Cutting Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Disc and Colloid Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Gas-Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mechanical Impact Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Media Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Roller Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wet-Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 431. Italy Ultra Fine Grinding Mill Market Size, by Media Mills, 2017-2040 (USD Million)

Media Mills	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Rotary and Planetary Ball Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Stirred Media Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Vibratory Media Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 432. Italy Ultra Fine Grinding Mill Market Size, by Gas-Jet Mills, 2017-2040 (USD Million)

Gas-Jet Mills	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Loop Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Opposed-Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Spiral Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Target Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 433. Italy Ultra Fine Grinding Mill Market Size, by Processed Material, 2017-2040 (USD Million)

Processed Material	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Biomass and Natural Ingredients	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Carbonaceous Materials	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Formulations and Composites	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Industrial Minerals	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Inorganic Chemicals, Ceramics, and Glass	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Metal Ores and Concentrates	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Metals and Alloys	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Organic Chemicals	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Polymers and Elastomers	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 434. Italy Ultra Fine Grinding Mill Market Size, by Buyer Industry, 2017-2040 (USD Million)

Buyer Industry	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Chemical and Fuel Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Electrical and Electronic Product Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Food, Beverage, and Feed Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Glass, Ceramics, and Construction Materials Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Materials Recovery and Recycling	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Metals and Fabricated Metal Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mining and Mineral Processing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Pharmaceutical Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Power and Heat Generation	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Research, Education, and Testing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Rubber and Plastics Product Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wood, Pulp, and Paper Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 435. Italy Ultra Fine Grinding Mill Market Size, by Deployment Scale, 2017-2040 (USD Million)

Deployment Scale	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Industrial Production	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Laboratory	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Pilot	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 436. Italy Ultra Fine Grinding Mill Market Size, by Sales Channel, 2017-2040 (USD Million)

Sales Channel	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Agent-Mediated Sales	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Independent Reseller Sales	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Manufacturer-Direct Sales	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 437. Italy Ultra Fine Grinding Mill Market Size, by Processing State, 2017-2040 (USD Million)

Processing State	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Dry Grinding	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wet and Dry Grinding	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wet Grinding	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 438. Italy Ultra Fine Grinding Mill Market Size, by Operating Mode, 2017-2040 (USD Million)

Operating Mode	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Batch	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Batch and Continuous	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Continuous	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Sources & Evidence

1. Hosokawa Micron - FY2025 Financial Results Presentation, November 25, 2025 (Japanese)
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; material attribution modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; material attribution modeled.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; establishment attribution modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; establishment attribution modeled.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; buyer attribution assumed.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; buyer attribution assumed.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; qualifying power attribution unverified.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; qualifying power attribution unverified.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; institutional attribution assumed.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; institutional attribution assumed.

2. Metso Receives Order for Grinding Mills to a Copper Project in Africa
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Approximately EUR xx.xx 2024 HIGmill order includes auxiliaries and services; a package-scale anchor, not recognized annual revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Approximately EUR xx.xx 2024 HIGmill order includes auxiliaries and services; a package-scale anchor, not recognized annual revenue.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The copper-project award establishes an ore/concentrate commercial purchasing context.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The copper-project award establishes an ore/concentrate commercial purchasing context.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The award concerns an African mining project; it does not disclose the global mining-buyer share.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The award concerns an African mining project; it does not disclose the global mining-buyer share.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Large industrial equipment procurement supports the production-scale category premise.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Large industrial equipment procurement supports the production-scale category premise.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The August xx.xx 2024 announcement records an approximately EUR xx.xx HIGmill order including auxiliaries and services. It anchors package-level commercial materiality, not a mill unit price or 2025 recognized revenue. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The August xx.xx 2024 announcement records an approximately EUR xx.xx HIGmill order including auxiliaries and services. It anchors package-level commercial materiality, not a mill unit price or 2025 recognized revenue. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The stirred-package order supports the Media Mills value-weight model and continuing commercial-demand premise, with order-to-revenue timing unresolved. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The stirred-package order supports the Media Mills value-weight model and continuing commercial-demand premise, with order-to-revenue timing unresolved. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
3. HIGmill Plant - Metso
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Standalone marketing terminology does not establish the study's Standalone Mills equipment scope.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Standalone marketing terminology does not establish the study's Standalone Mills equipment scope.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: HIGmill Plant includes pre-engineered auxiliary modules, supporting classification as an equipment package.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: HIGmill Plant includes pre-engineered auxiliary modules, supporting classification as an equipment package.

4. IsaMill - About, Technology Partnership and Engineering
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Delivery alternatives permit mill-only supply or additional auxiliary equipment; actual equipment scope determines attribution.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Delivery alternatives permit mill-only supply or additional auxiliary equipment; actual equipment scope determines attribution.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Modular auxiliary-inclusive and turnkey alternatives support differentiated package scope, without proving a global adoption percentage.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Modular auxiliary-inclusive and turnkey alternatives support differentiated package scope, without proving a global adoption percentage.
5. Commission Processing - NIPPON COKE & ENGINEERING CO., LTD.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Own commercial processing portfolio identifies glass, ceramics and inorganic materials; establishes material mapping, not equipment revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own commercial processing portfolio identifies glass, ceramics and inorganic materials; establishes material mapping, not equipment revenue.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Organic pigments are named commercial processing materials.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Organic pigments are named commercial processing materials.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Metal powders are named commercial processing materials.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Metal powders are named commercial processing materials.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Carbon is identified in the operator's commercial grinding portfolio.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Carbon is identified in the operator's commercial grinding portfolio.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Thermosetting resin supports a polymer-material category premise.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Thermosetting resin supports a polymer-material category premise.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Ink-related grinding establishes a commercial reference but does not resolve whole-formulation versus constituent duty.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Ink-related grinding establishes a commercial reference but does not resolve whole-formulation versus constituent duty.

6. Micronization / Grinding - A. Ebbecke Verfahrenstechnik AG
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Commercial contract-grinding coverage includes natural materials and food ingredients; processing fees are excluded from equipment value.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Commercial contract-grinding coverage includes natural materials and food ingredients; processing fees are excluded from equipment value.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Plastic granulates and resins establish material coverage, not downstream customers' equipment ownership.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Plastic granulates and resins establish material coverage, not downstream customers' equipment ownership.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operator-side food-processing reference supports establishment attribution rather than automatically assigning equipment to its customers.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operator-side food-processing reference supports establishment attribution rather than automatically assigning equipment to its customers.
7. Manufacturing Capabilities - Asbury Advanced Materials
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Own manufacturing disclosure identifies carbon-material grinding and micronization; supports the material-duty premise only.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own manufacturing disclosure identifies carbon-material grinding and micronization; supports the material-duty premise only.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Custom formulations and dispersions are commercial outputs, but joint whole-formulation milling remains unmeasured.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Custom formulations and dispersions are commercial outputs, but joint whole-formulation milling remains unmeasured.
8. Pyrum Innovations AG - Interim Group Report January 1 to June 30, 2025
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The purchaser's 2025 report records a grinding-plant installation associated with recovered carbon black; no downstream material revenue is counted.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The purchaser's 2025 report records a grinding-plant installation associated with recovered carbon black; no downstream material revenue is counted.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The report establishes an actual recovery-business equipment context, while the exact attributable mill expenditure remains undisclosed.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The report establishes an actual recovery-business equipment context, while the exact attributable mill expenditure remains undisclosed.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The disclosed commercial-site grinding installation supports Industrial Production classification.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The disclosed commercial-site grinding installation supports Industrial Production classification.

9. NRRI Advances Efficient Grinding Technology on the Iron Range
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The institution distinguishes a planned bench-scale purchase from its loaned pilot equipment; not a completed-sale census.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The institution distinguishes a planned bench-scale purchase from its loaned pilot equipment; not a completed-sale census.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The May xx.xx 2024 account identifies a loaned pilot stirred mill; unpaid placement is not counted as equipment-sale revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The May xx.xx 2024 account identifies a loaned pilot stirred mill; unpaid placement is not counted as equipment-sale revenue.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operating research institute is distinct from its mining clients, supporting buyer/material separation.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operating research institute is distinct from its mining clients, supporting buyer/material separation.
10. Planetary Ball Mill PM 100 - RETSCH
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The PM xx.xx is marketed as a benchtop instrument, supporting the small-laboratory pool classification without establishing sales weight.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The PM xx.xx is marketed as a benchtop instrument, supporting the small-laboratory pool classification without establishing sales weight.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The individual-instrument offering supports a narrower equipment-supply alternative; package incidence remains modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The individual-instrument offering supports a narrower equipment-supply alternative; package incidence remains modeled.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: PM xx.xx is a marketed benchtop planetary platform, supporting laboratory-category mapping rather than shipment or price weights. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: PM xx.xx is a marketed benchtop planetary platform, supporting laboratory-category mapping rather than shipment or price weights. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The product page advertises both dry and wet capability. Actual dual-state purchase inclusion remains an explicit model assumption. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The product page advertises both dry and wet capability. Actual dual-state purchase inclusion remains an explicit model assumption. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))

11. Jet Mill - Contract History CW2408170, CanadaBuys
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: A May xx.xx 2026 laboratory jet-mill award totals CAD xx.xx; a dated procurement check, not a 2025 shipment or global average price.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: A May xx.xx 2026 laboratory jet-mill award totals CAD xx.xx; a dated procurement check, not a 2025 shipment or global average price.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The record distinguishes Natural Resources Canada as buying organization from PSPC as contracting organization, supporting establishment attribution.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The record distinguishes Natural Resources Canada as buying organization from PSPC as contracting organization, supporting establishment attribution.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The jet-mill award totals CAD xx.xx and is dated May xx.xx 2026. It is a nearby-period laboratory purchasing comparator, not a 2025 recognized sale, and supplies neither a gas-jet subtype nor a definitive channel role. ([canadabuys.canada.ca](https://canadabuys.canada.ca/en/tender-opportunities/contract-history/cw2408170-xx.xx))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The jet-mill award totals CAD xx.xx and is dated May xx.xx 2026. It is a nearby-period laboratory purchasing comparator, not a 2025 recognized sale, and supplies neither a gas-jet subtype nor a definitive channel role. ([canadabuys.canada.ca](https://canadabuys.canada.ca/en/tender-opportunities/contract-history/cw2408170-xx.xx))
12. MFC Production Equipment - FiberLean
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The manufacturer's commercial offering targets pulp, paper and related establishments; it is not a measured industry sales share.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The manufacturer's commercial offering targets pulp, paper and related establishments; it is not a measured industry sales share.
13. Pulverizing Equipment - Coperion
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The broader portfolio names power-generation applications and separately lists ultrafine equipment; this limits, rather than verifies, the assumed qualifying power-buyer allocation.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The broader portfolio names power-generation applications and separately lists ultrafine equipment; this limits, rather than verifies, the assumed qualifying power-buyer allocation.
14. LG Energy Solution Releases 2025 Financial Results - January 29, 2026
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own 2025 revenue decline and dated 2026 capital-expenditure reduction target constrain battery-related equipment-adoption assumptions.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Existing-asset reuse strategy qualifies a direct downstream-demand-to-new-carbon-material-mill investment inference.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Buyer investment restraint constrains the relative application multiplier; upstream chemical attribution remains separately assumed.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own battery-manufacturer financial and investment plans provide a counter-test, not an ultrafine equipment purchasing total.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The January 2026 emphasis on reduced new investment qualifies automatic growth in broader equipment-package adoption.

15. UNSD Classification Detail - ISIC Rev.4, Class 3830: Materials Recovery
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The official classification distinguishes secondary-material recovery from manufacture of new final products; it supplies no equipment sales weight.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The official classification distinguishes secondary-material recovery from manufacture of new final products; it supplies no equipment sales weight.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Recovered-input use alone does not classify the equipment operator as a recovery establishment rather than a product manufacturer.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Recovered-input use alone does not classify the equipment operator as a recovery establishment rather than a product manufacturer.
16. Ultrafin Mill: Super Masscolloider, Masuko MKCA6-5J CE - University of Ljubljana
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The university inventories a laboratory ultrafine mill within wood science; the institutional operator is not a wood-products manufacturer.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The university inventories a laboratory ultrafine mill within wood science; the institutional operator is not a wood-products manufacturer.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The institutional inventory expressly identifies laboratory equipment, supporting deployment classification without establishing a purchase-year value.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The institutional inventory expressly identifies laboratory equipment, supporting deployment classification without establishing a purchase-year value.
17. Contract Manufacturing of Pharmaceuticals - YUKI GOSEI KOGYO CO., LTD.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operator distinguishes production jet mills from smaller equipment, supporting industrial deployment at a pharmaceutical contract manufacturer.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operator distinguishes production jet mills from smaller equipment, supporting industrial deployment at a pharmaceutical contract manufacturer.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The actual pharmaceutical manufacturing operator is distinct from customers outsourcing production; processing-service receipts remain excluded.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The actual pharmaceutical manufacturing operator is distinct from customers outsourcing production; processing-service receipts remain excluded.

18. Record year for Metso stirred mills as mining industry opts for energy-efficient comminution technology

- Evidence informing base-year allocation inputs; displayed values and growth are calculated: Metso reports more than twenty Vertimill sales in 2025 and approximately xx.xx cumulative stirred-mill deliveries. Broader application coverage prevents treating these as ultrafine-only annual shipments; they constrain the modeled stirred/mining allocation and forecast premise. ([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))
- Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Metso reports more than twenty Vertimill sales in 2025 and approximately xx.xx cumulative stirred-mill deliveries. Broader application coverage prevents treating these as ultrafine-only annual shipments; they constrain the modeled stirred/mining allocation and forecast premise. ([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))
- Evidence informing base-year allocation inputs; displayed values and growth are calculated: The disclosed stirred-equipment activity supports material Media Mills participation, not the final modeled parent share. ([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))
- Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The disclosed stirred-equipment activity supports material Media Mills participation, not the final modeled parent share. ([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))

19. Bühler strengthens its market position

- Evidence informing base-year allocation inputs; displayed values and growth are calculated: Bühler reports xx.xx% Grinding & Dispersing order growth in 2025 against a xx.xx% decline in broader Advanced Materials orders. This is a mixed commercial leading indicator, not observed market-share growth. ([buhlergroup.com](https://www.buhlergroup.com/global/en/media/media-releases/b%C3%BChler-strengthens-its-marketposition.html))
- Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Bühler reports xx.xx% Grinding & Dispersing order growth in 2025 against a xx.xx% decline in broader Advanced Materials orders. This is a mixed commercial leading indicator, not observed market-share growth. ([buhlergroup.com](https://www.buhlergroup.com/global/en/media/media-releases/b%C3%BChler-strengthens-its-marketposition.html))
- Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The disclosed battery-related and other application orders constrain differentiated Media Mills forecast assumptions without converting orders directly to annual equipment revenue. ([buhlergroup.com](https://www.buhlergroup.com/global/en/media/media-releases/b%C3%BChler-strengthens-its-marketposition.html))

20. Management Greetings | HOSOKAWAMICRON CORPORATION

- Evidence informing base-year allocation inputs; displayed values and growth are calculated: Hosokawa reports FY2025 net sales of JPY xx.xx, down xx.xx%, and orders down xx.xx%. The diversified-company result challenges uniform purchasing acceleration and constrains, rather than directly measures, technology-mix assumptions. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/ir/management_policy/management_greetings.html))
- Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Hosokawa reports FY2025 net sales of JPY xx.xx, down xx.xx%, and orders down xx.xx%. The diversified-company result challenges uniform purchasing acceleration and constrains, rather than directly measures, technology-mix assumptions. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/ir/management_policy/management_greetings.html))
- Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The same broader financial contraction is counterevidence to assuming uniform Media Mills growth across suppliers; no corporate revenue is assigned directly to the category. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/ir/management_policy/management_greetings.html))

21. Details of micromeritics | HOSOKAWAMICRON CORPORATION
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Hosokawa identifies its AS spiral offering, supporting subtype mapping rather than a sales weight. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Hosokawa identifies its AS spiral offering, supporting subtype mapping rather than a sales weight. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The AFG/TFG counterjet offerings support the retained Opposed-Jet commercial mapping. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The AFG/TFG counterjet offerings support the retained Opposed-Jet commercial mapping. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The manufacturer identifies Innovomizer as a mechanical ultrafine offering; ordinary impact equipment is not automatically included. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The manufacturer identifies Innovomizer as a mechanical ultrafine offering; ordinary impact equipment is not automatically included. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))
22. Grinding Equipment Manufacturer Supplier Factory, Grinding System | Longly
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: LONGLY discloses current annual capacity above 2,000 equipment units and commercial wet-grinding offerings. Capacity is bridged through explicitly assumed timing, utilization and eligible-product factors; it is not reported 2025 stirred-mill shipments. ([longlymill.com](https://www.longlymill.com/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: LONGLY discloses current annual capacity above 2,000 equipment units and commercial wet-grinding offerings. Capacity is bridged through explicitly assumed timing, utilization and eligible-product factors; it is not reported 2025 stirred-mill shipments. ([longlymill.com](https://www.longlymill.com/))
23. Ultra-Fine Grinding - Hosokawa Micron Malaysia
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The inspected ultrafine portfolio identifies AWM-F table-roller equipment, supporting the qualifying Roller Mills boundary, not its assumed counts or prices. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The inspected ultrafine portfolio identifies AWM-F table-roller equipment, supporting the qualifying Roller Mills boundary, not its assumed counts or prices. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Super Orion is a marketed rotary ball-mill constituent of the combined rotary/planetary category. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Super Orion is a marketed rotary ball-mill constituent of the combined rotary/planetary category. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: MJT is explicitly listed as a target-type offering, supporting precedence of the named platform over overlapping generic jet terminology. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: MJT is explicitly listed as a target-type offering, supporting precedence of the named platform over overlapping generic jet terminology. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

24. Loop Jet Mill - Consistency. Compliance. Engineered.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The current named Loop Jet Mill listing establishes an offered commercial platform. It supports forecast category continuity, but does not disclose subtype revenue or prove 2025 sales. ([jetmillmfg.com](https://www.jetmillmfg.com/loop-jet-mill/))
25. SWECO Vibratory Grinding and Particle Size Reduction Equipment
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: SWECO markets Vibro-Energy grinding equipment with separate wet and wet/dry offerings. This supports commercial category and configuration mapping, not the modeled frequency of purchases. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: SWECO markets Vibro-Energy grinding equipment with separate wet and wet/dry offerings. This supports commercial category and configuration mapping, not the modeled frequency of purchases. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Named wet/dry models establish dual-state availability; they do not establish the exact supplied configuration or a market-wide value share. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Named wet/dry models establish dual-state availability; they do not establish the exact supplied configuration or a market-wide value share. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))
26. Fine-cutting mill with rotating classifying feature - the sensational new development!
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The September xx.xx 2014 own-product announcement establishes a pre-base-year SecoMy S cutting offering described for ultrafine commercial applications. It is category evidence, not annual equipment revenue. ([grinding.netzsch.com](https://grinding.netzsch.com/en/news/2014/fine-cutting-mill-with-rotating-classifying-feature-the-sensational-new-development))
27. NETZSCH SecoMy S - Precision Cutting Redefined!
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The August 2026 SecoMy S brochure confirms continuing commercial ultrafine-cutting positioning and system-supply availability. It supports category persistence, not the assumed forecast spending share. ([grinding.netzsch.com](https://grinding.netzsch.com/_Resources/Persistent/xx.xx/e/xx.xx/b/8e4b5adcfc16fcc2d83974f8080d614cce1a2c01/NETZSCH_Fine_Cutting_Mill_SecoMy_S_e.pdf))
28. Wet Milling and Dispersing Device - Star Burst - Sugino Corp.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: SUGINO's Star Burst portfolio identifies wet-jet equipment across research and production purchasing contexts. Only milling-attributable supply is included; adjacent droplet-only or dispersion activity is not automatically counted. ([suginocorp.com](https://www.suginocorp.com/star-burst/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: SUGINO's Star Burst portfolio identifies wet-jet equipment across research and production purchasing contexts. Only milling-attributable supply is included; adjacent droplet-only or dispersion activity is not automatically counted. ([suginocorp.com](https://www.suginocorp.com/star-burst/))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The wet-jet offering supports wet-state classification within the joint value model, not the total Wet Grinding share. ([suginocorp.com](https://www.suginocorp.com/star-burst/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The wet-jet offering supports wet-state classification within the joint value model, not the total Wet Grinding share. ([suginocorp.com](https://www.suginocorp.com/star-burst/))

29. IBU-tec | Mills - Milling Technology for Dry and Wet Grinding
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operator table separately lists two dry opposed-jet units. This is an installed-inventory observation, not a shipment or revenue ratio. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operator table separately lists two dry opposed-jet units. This is an installed-inventory observation, not a shipment or revenue ratio. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Three wet agitator-bead units are separately inventoried, supporting state-specific commercial classification without using their count as a market weight. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Three wet agitator-bead units are separately inventoried, supporting state-specific commercial classification without using their count as a market weight. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
30. Comminution - NTNU
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: NTNU separately records wet/dry capability for stirred and planetary equipment; the inventory is not a representative value-share dataset. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: NTNU separately records wet/dry capability for stirred and planetary equipment; the inventory is not a representative value-share dataset. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The planetary equipment is recorded as batch, supporting a laboratory batch context without assuming all laboratories are batch-only. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The planetary equipment is recorded as batch, supporting a laboratory batch context without assuming all laboratories are batch-only. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The laboratory jet rig is recorded as continuous, independently challenging equivalence between continuous mode and industrial scale. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The laboratory jet rig is recorded as continuous, independently challenging equivalence between continuous mode and industrial scale. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
31. Dry Batch Or Continuous Laboratory Mills - Union Process
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Union Process identifies SD-xx.xx as one laboratory offering for both batch and continuous service. Configuration-specific purchase inclusion and revenue are undisclosed. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Union Process identifies SD-xx.xx as one laboratory offering for both batch and continuous service. Configuration-specific purchase inclusion and revenue are undisclosed. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The same named offering advertises wet/dry capability, supporting a dual-state category premise rather than an observed adoption percentage. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The same named offering advertises wet/dry capability, supporting a dual-state category premise rather than an observed adoption percentage. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))

32. Retsch Contact & Services - Contact Partners Worldwide

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: RETSCH describes a network including daughter companies. Manufacturer affiliation, rather than contact location, informs direct-route attribution. ([retsch.com](https://www.retsch.com/contact-services/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: RETSCH describes a network including daughter companies. Manufacturer affiliation, rather than contact location, informs direct-route attribution. ([retsch.com](https://www.retsch.com/contact-services/))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The network also includes trained distributors, establishing a resale-access premise but not distributor ownership roles or annual sales weights. ([retsch.com](https://www.retsch.com/contact-services/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The network also includes trained distributors, establishing a resale-access premise but not distributor ownership roles or annual sales weights. ([retsch.com](https://www.retsch.com/contact-services/))

33. HOSOKAWA ALPINE Aktiengesellschaft - Conditions of Sale 371_00 EN

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Hosokawa requires company confirmation of representatives' transactions and makes contractual scope authoritative. The terms support agency-role attribution, not the assumed agent percentage. ([hosokawa-alpine.com](https://www.hosokawa-alpine.com/fileadmin/allgemein/Legal/AGB/AGB_Verkaufsbedingungen_en_371_00.pdf))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Hosokawa requires company confirmation of representatives' transactions and makes contractual scope authoritative. The terms support agency-role attribution, not the assumed agent percentage. ([hosokawa-alpine.com](https://www.hosokawa-alpine.com/fileadmin/allgemein/Legal/AGB/AGB_Verkaufsbedingungen_en_371_00.pdf))

34. UNSD - ISIC Rev.5, Class 4610: Wholesale on a Fee or Contract Basis

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: ISIC Rev.xx.xx class xx.xx defines fee/commission intermediation without ownership, supporting a non-title-taking agency numerator distinct from goods supplied on own account. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: ISIC Rev.xx.xx class xx.xx defines fee/commission intermediation without ownership, supporting a non-title-taking agency numerator distinct from goods supplied on own account. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Own-account wholesale is excluded from the agency class, supporting the reseller/agent partition without supplying ultrafine-mill channel shares. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own-account wholesale is excluded from the agency class, supporting the reseller/agent partition without supplying ultrafine-mill channel shares. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))

35. ITDI-PB-2024-057 - Supply, Delivery, Installation and Commissioning of Ultra-fine Friction Grinder

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The 2024 friction-grinder procurement had a PHP xx.xx budget and failed with no bidder. It establishes a configured-package spending ceiling and commercial category, not a sale or a shipment count. ([notices.philgeps.gov.ph](https://notices.philgeps.gov.ph/GEPSNONPILOT/Tender/PrintableBidNoticeAbstractUI.aspx?refid=xx.xx))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The 2024 friction-grinder procurement had a PHP xx.xx budget and failed with no bidder. It establishes a configured-package spending ceiling and commercial category, not a sale or a shipment count. ([notices.philgeps.gov.ph](https://notices.philgeps.gov.ph/GEPSNONPILOT/Tender/PrintableBidNoticeAbstractUI.aspx?refid=xx.xx))

36. Bangko Sentral ng Pilipinas - Balance of Payments Report, Q4 2024

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The central bank reports a 2024 average of PHP xx.xx per USD. Dividing the failed PHP xx.xx procurement budget by this rate gives an approximately USD xx.xx comparison ceiling, not realized equipment revenue. ([bsp.gov.ph](https://www.bsp.gov.ph/Media_And_Research/Balance%20of%20Payments%20Report/2024/BOP_4qtr2024.pdf))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The central bank reports a 2024 average of PHP xx.xx per USD. Dividing the failed PHP xx.xx procurement budget by this rate gives an approximately USD xx.xx comparison ceiling, not realized equipment revenue. ([bsp.gov.ph](https://www.bsp.gov.ph/Media_And_Research/Balance%20of%20Payments%20Report/2024/BOP_4qtr2024.pdf))

17.12. Australia

Table 439. Australia Ultra Fine Grinding Mill Market Size, 2017-2040 (USD Million)

Country	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Australia	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 440. Australia Ultra Fine Grinding Mill Market Size, by Supply Scope, 2017-2040 (USD Million)

Supply Scope	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Integrated Milling Packages	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Standalone Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 441. Australia Ultra Fine Grinding Mill Market Size, by Mill Technology, 2017-2040 (USD Million)

Mill Technology	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Cutting Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Disc and Colloid Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Gas-Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mechanical Impact Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Media Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Roller Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wet-Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 442. Australia Ultra Fine Grinding Mill Market Size, by Media Mills, 2017-2040 (USD Million)

Media Mills	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Rotary and Planetary Ball Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Stirred Media Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Vibratory Media Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 443. Australia Ultra Fine Grinding Mill Market Size, by Gas-Jet Mills, 2017-2040 (USD Million)

Gas-Jet Mills	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Loop Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Opposed-Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Spiral Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Target Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 444. Australia Ultra Fine Grinding Mill Market Size, by Processed Material, 2017-2040 (USD Million)

Processed Material	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Biomass and Natural Ingredients	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Carbonaceous Materials	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Formulations and Composites	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Industrial Minerals	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Inorganic Chemicals, Ceramics, and Glass	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Metal Ores and Concentrates	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Metals and Alloys	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Organic Chemicals	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Polymers and Elastomers	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 445. Australia Ultra Fine Grinding Mill Market Size, by Buyer Industry, 2017-2040 (USD Million)

Buyer Industry	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Chemical and Fuel Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Electrical and Electronic Product Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Food, Beverage, and Feed Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Glass, Ceramics, and Construction Materials Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Materials Recovery and Recycling	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Metals and Fabricated Metal Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mining and Mineral Processing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Pharmaceutical Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Power and Heat Generation	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Research, Education, and Testing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Rubber and Plastics Product Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wood, Pulp, and Paper Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 446. Australia Ultra Fine Grinding Mill Market Size, by Deployment Scale, 2017-2040 (USD Million)

Deployment Scale	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Industrial Production	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Laboratory	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Pilot	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 447. Australia Ultra Fine Grinding Mill Market Size, by Sales Channel, 2017-2040 (USD Million)

Sales Channel	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Agent-Mediated Sales	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Independent Reseller Sales	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Manufacturer-Direct Sales	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 448. Australia Ultra Fine Grinding Mill Market Size, by Processing State, 2017-2040 (USD Million)

Processing State	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Dry Grinding	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wet and Dry Grinding	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wet Grinding	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 449. Australia Ultra Fine Grinding Mill Market Size, by Operating Mode, 2017-2040 (USD Million)

Operating Mode	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Batch	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Batch and Continuous	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Continuous	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Sources & Evidence

1. Hosokawa Micron - FY2025 Financial Results Presentation, November 25, 2025 (Japanese)
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; material attribution modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; material attribution modeled.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; establishment attribution modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; establishment attribution modeled.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; buyer attribution assumed.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; buyer attribution assumed.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; qualifying power attribution unverified.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; qualifying power attribution unverified.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; institutional attribution assumed.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; institutional attribution assumed.

2. Metso Receives Order for Grinding Mills to a Copper Project in Africa
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Approximately EUR xx.xx 2024 HIGmill order includes auxiliaries and services; a package-scale anchor, not recognized annual revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Approximately EUR xx.xx 2024 HIGmill order includes auxiliaries and services; a package-scale anchor, not recognized annual revenue.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The copper-project award establishes an ore/concentrate commercial purchasing context.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The copper-project award establishes an ore/concentrate commercial purchasing context.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The award concerns an African mining project; it does not disclose the global mining-buyer share.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The award concerns an African mining project; it does not disclose the global mining-buyer share.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Large industrial equipment procurement supports the production-scale category premise.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Large industrial equipment procurement supports the production-scale category premise.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The August xx.xx 2024 announcement records an approximately EUR xx.xx HIGmill order including auxiliaries and services. It anchors package-level commercial materiality, not a mill unit price or 2025 recognized revenue. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The August xx.xx 2024 announcement records an approximately EUR xx.xx HIGmill order including auxiliaries and services. It anchors package-level commercial materiality, not a mill unit price or 2025 recognized revenue. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The stirred-package order supports the Media Mills value-weight model and continuing commercial-demand premise, with order-to-revenue timing unresolved. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The stirred-package order supports the Media Mills value-weight model and continuing commercial-demand premise, with order-to-revenue timing unresolved. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
3. HIGmill Plant - Metso
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Standalone marketing terminology does not establish the study's Standalone Mills equipment scope.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Standalone marketing terminology does not establish the study's Standalone Mills equipment scope.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: HIGmill Plant includes pre-engineered auxiliary modules, supporting classification as an equipment package.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: HIGmill Plant includes pre-engineered auxiliary modules, supporting classification as an equipment package.

4. IsaMill - About, Technology Partnership and Engineering
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Delivery alternatives permit mill-only supply or additional auxiliary equipment; actual equipment scope determines attribution.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Delivery alternatives permit mill-only supply or additional auxiliary equipment; actual equipment scope determines attribution.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Modular auxiliary-inclusive and turnkey alternatives support differentiated package scope, without proving a global adoption percentage.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Modular auxiliary-inclusive and turnkey alternatives support differentiated package scope, without proving a global adoption percentage.
5. Commission Processing - NIPPON COKE & ENGINEERING CO., LTD.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Own commercial processing portfolio identifies glass, ceramics and inorganic materials; establishes material mapping, not equipment revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own commercial processing portfolio identifies glass, ceramics and inorganic materials; establishes material mapping, not equipment revenue.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Organic pigments are named commercial processing materials.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Organic pigments are named commercial processing materials.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Metal powders are named commercial processing materials.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Metal powders are named commercial processing materials.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Carbon is identified in the operator's commercial grinding portfolio.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Carbon is identified in the operator's commercial grinding portfolio.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Thermosetting resin supports a polymer-material category premise.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Thermosetting resin supports a polymer-material category premise.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Ink-related grinding establishes a commercial reference but does not resolve whole-formulation versus constituent duty.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Ink-related grinding establishes a commercial reference but does not resolve whole-formulation versus constituent duty.

6. Micronization / Grinding - A. Ebbecke Verfahrenstechnik AG
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Commercial contract-grinding coverage includes natural materials and food ingredients; processing fees are excluded from equipment value.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Commercial contract-grinding coverage includes natural materials and food ingredients; processing fees are excluded from equipment value.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Plastic granulates and resins establish material coverage, not downstream customers' equipment ownership.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Plastic granulates and resins establish material coverage, not downstream customers' equipment ownership.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operator-side food-processing reference supports establishment attribution rather than automatically assigning equipment to its customers.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operator-side food-processing reference supports establishment attribution rather than automatically assigning equipment to its customers.
7. Manufacturing Capabilities - Asbury Advanced Materials
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Own manufacturing disclosure identifies carbon-material grinding and micronization; supports the material-duty premise only.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own manufacturing disclosure identifies carbon-material grinding and micronization; supports the material-duty premise only.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Custom formulations and dispersions are commercial outputs, but joint whole-formulation milling remains unmeasured.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Custom formulations and dispersions are commercial outputs, but joint whole-formulation milling remains unmeasured.
8. Pyrum Innovations AG - Interim Group Report January 1 to June 30, 2025
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The purchaser's 2025 report records a grinding-plant installation associated with recovered carbon black; no downstream material revenue is counted.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The purchaser's 2025 report records a grinding-plant installation associated with recovered carbon black; no downstream material revenue is counted.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The report establishes an actual recovery-business equipment context, while the exact attributable mill expenditure remains undisclosed.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The report establishes an actual recovery-business equipment context, while the exact attributable mill expenditure remains undisclosed.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The disclosed commercial-site grinding installation supports Industrial Production classification.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The disclosed commercial-site grinding installation supports Industrial Production classification.

9. NRRI Advances Efficient Grinding Technology on the Iron Range
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The institution distinguishes a planned bench-scale purchase from its loaned pilot equipment; not a completed-sale census.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The institution distinguishes a planned bench-scale purchase from its loaned pilot equipment; not a completed-sale census.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The May xx.xx 2024 account identifies a loaned pilot stirred mill; unpaid placement is not counted as equipment-sale revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The May xx.xx 2024 account identifies a loaned pilot stirred mill; unpaid placement is not counted as equipment-sale revenue.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operating research institute is distinct from its mining clients, supporting buyer/material separation.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operating research institute is distinct from its mining clients, supporting buyer/material separation.
10. Planetary Ball Mill PM 100 - RETSCH
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The PM xx.xx is marketed as a benchtop instrument, supporting the small-laboratory pool classification without establishing sales weight.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The PM xx.xx is marketed as a benchtop instrument, supporting the small-laboratory pool classification without establishing sales weight.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The individual-instrument offering supports a narrower equipment-supply alternative; package incidence remains modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The individual-instrument offering supports a narrower equipment-supply alternative; package incidence remains modeled.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: PM xx.xx is a marketed benchtop planetary platform, supporting laboratory-category mapping rather than shipment or price weights. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: PM xx.xx is a marketed benchtop planetary platform, supporting laboratory-category mapping rather than shipment or price weights. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The product page advertises both dry and wet capability. Actual dual-state purchase inclusion remains an explicit model assumption. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The product page advertises both dry and wet capability. Actual dual-state purchase inclusion remains an explicit model assumption. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))

11. Jet Mill - Contract History CW2408170, CanadaBuys
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: A May xx.xx 2026 laboratory jet-mill award totals CAD xx.xx; a dated procurement check, not a 2025 shipment or global average price.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: A May xx.xx 2026 laboratory jet-mill award totals CAD xx.xx; a dated procurement check, not a 2025 shipment or global average price.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The record distinguishes Natural Resources Canada as buying organization from PSPC as contracting organization, supporting establishment attribution.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The record distinguishes Natural Resources Canada as buying organization from PSPC as contracting organization, supporting establishment attribution.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The jet-mill award totals CAD xx.xx and is dated May xx.xx 2026. It is a nearby-period laboratory purchasing comparator, not a 2025 recognized sale, and supplies neither a gas-jet subtype nor a definitive channel role. ([canadabuys.canada.ca](https://canadabuys.canada.ca/en/tender-opportunities/contract-history/cw2408170-xx.xx))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The jet-mill award totals CAD xx.xx and is dated May xx.xx 2026. It is a nearby-period laboratory purchasing comparator, not a 2025 recognized sale, and supplies neither a gas-jet subtype nor a definitive channel role. ([canadabuys.canada.ca](https://canadabuys.canada.ca/en/tender-opportunities/contract-history/cw2408170-xx.xx))
12. MFC Production Equipment - FiberLean
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The manufacturer's commercial offering targets pulp, paper and related establishments; it is not a measured industry sales share.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The manufacturer's commercial offering targets pulp, paper and related establishments; it is not a measured industry sales share.
13. Pulverizing Equipment - Coperion
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The broader portfolio names power-generation applications and separately lists ultrafine equipment; this limits, rather than verifies, the assumed qualifying power-buyer allocation.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The broader portfolio names power-generation applications and separately lists ultrafine equipment; this limits, rather than verifies, the assumed qualifying power-buyer allocation.
14. LG Energy Solution Releases 2025 Financial Results - January 29, 2026
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own 2025 revenue decline and dated 2026 capital-expenditure reduction target constrain battery-related equipment-adoption assumptions.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Existing-asset reuse strategy qualifies a direct downstream-demand-to-new-carbon-material-mill investment inference.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Buyer investment restraint constrains the relative application multiplier; upstream chemical attribution remains separately assumed.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own battery-manufacturer financial and investment plans provide a counter-test, not an ultrafine equipment purchasing total.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The January 2026 emphasis on reduced new investment qualifies automatic growth in broader equipment-package adoption.

15. UNSD Classification Detail - ISIC Rev.4, Class 3830: Materials Recovery
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The official classification distinguishes secondary-material recovery from manufacture of new final products; it supplies no equipment sales weight.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The official classification distinguishes secondary-material recovery from manufacture of new final products; it supplies no equipment sales weight.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Recovered-input use alone does not classify the equipment operator as a recovery establishment rather than a product manufacturer.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Recovered-input use alone does not classify the equipment operator as a recovery establishment rather than a product manufacturer.
16. Ultrafin Mill: Super Masscolloider, Masuko MKCA6-5J CE - University of Ljubljana
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The university inventories a laboratory ultrafine mill within wood science; the institutional operator is not a wood-products manufacturer.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The university inventories a laboratory ultrafine mill within wood science; the institutional operator is not a wood-products manufacturer.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The institutional inventory expressly identifies laboratory equipment, supporting deployment classification without establishing a purchase-year value.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The institutional inventory expressly identifies laboratory equipment, supporting deployment classification without establishing a purchase-year value.
17. Contract Manufacturing of Pharmaceuticals - YUKI GOSEI KOGYO CO., LTD.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operator distinguishes production jet mills from smaller equipment, supporting industrial deployment at a pharmaceutical contract manufacturer.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operator distinguishes production jet mills from smaller equipment, supporting industrial deployment at a pharmaceutical contract manufacturer.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The actual pharmaceutical manufacturing operator is distinct from customers outsourcing production; processing-service receipts remain excluded.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The actual pharmaceutical manufacturing operator is distinct from customers outsourcing production; processing-service receipts remain excluded.

18. Record year for Metso stirred mills as mining industry opts for energy-efficient comminution technology

- Evidence informing base-year allocation inputs; displayed values and growth are calculated: Metso reports more than twenty Vertimill sales in 2025 and approximately xx.xx cumulative stirred-mill deliveries. Broader application coverage prevents treating these as ultrafine-only annual shipments; they constrain the modeled stirred/mining allocation and forecast premise. ([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))
- Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Metso reports more than twenty Vertimill sales in 2025 and approximately xx.xx cumulative stirred-mill deliveries. Broader application coverage prevents treating these as ultrafine-only annual shipments; they constrain the modeled stirred/mining allocation and forecast premise. ([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))
- Evidence informing base-year allocation inputs; displayed values and growth are calculated: The disclosed stirred-equipment activity supports material Media Mills participation, not the final modeled parent share. ([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))
- Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The disclosed stirred-equipment activity supports material Media Mills participation, not the final modeled parent share. ([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))

19. Bühler strengthens its market position

- Evidence informing base-year allocation inputs; displayed values and growth are calculated: Bühler reports xx.xx% Grinding & Dispersing order growth in 2025 against a xx.xx% decline in broader Advanced Materials orders. This is a mixed commercial leading indicator, not observed market-share growth. ([buhlergroup.com](https://www.buhlergroup.com/global/en/media/media-releases/b%C3%BChler-strengthens-its-marketposition.html))
- Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Bühler reports xx.xx% Grinding & Dispersing order growth in 2025 against a xx.xx% decline in broader Advanced Materials orders. This is a mixed commercial leading indicator, not observed market-share growth. ([buhlergroup.com](https://www.buhlergroup.com/global/en/media/media-releases/b%C3%BChler-strengthens-its-marketposition.html))
- Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The disclosed battery-related and other application orders constrain differentiated Media Mills forecast assumptions without converting orders directly to annual equipment revenue. ([buhlergroup.com](https://www.buhlergroup.com/global/en/media/media-releases/b%C3%BChler-strengthens-its-marketposition.html))

20. Management Greetings | HOSOKAWAMICRON CORPORATION

- Evidence informing base-year allocation inputs; displayed values and growth are calculated: Hosokawa reports FY2025 net sales of JPY xx.xx, down xx.xx%, and orders down xx.xx%. The diversified-company result challenges uniform purchasing acceleration and constrains, rather than directly measures, technology-mix assumptions. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/ir/management_policy/management_greetings.html))
- Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Hosokawa reports FY2025 net sales of JPY xx.xx, down xx.xx%, and orders down xx.xx%. The diversified-company result challenges uniform purchasing acceleration and constrains, rather than directly measures, technology-mix assumptions. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/ir/management_policy/management_greetings.html))
- Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The same broader financial contraction is counterevidence to assuming uniform Media Mills growth across suppliers; no corporate revenue is assigned directly to the category. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/ir/management_policy/management_greetings.html))

21. Details of micromeritics | HOSOKAWAMICRON CORPORATION

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Hosokawa identifies its AS spiral offering, supporting subtype mapping rather than a sales weight. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Hosokawa identifies its AS spiral offering, supporting subtype mapping rather than a sales weight. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The AFG/TFG counterjet offerings support the retained Opposed-Jet commercial mapping. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The AFG/TFG counterjet offerings support the retained Opposed-Jet commercial mapping. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The manufacturer identifies Innovomizer as a mechanical ultrafine offering; ordinary impact equipment is not automatically included. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The manufacturer identifies Innovomizer as a mechanical ultrafine offering; ordinary impact equipment is not automatically included. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

22. Grinding Equipment Manufacturer Supplier Factory, Grinding System | Longly

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: LONGLY discloses current annual capacity above 2,000 equipment units and commercial wet-grinding offerings. Capacity is bridged through explicitly assumed timing, utilization and eligible-product factors; it is not reported 2025 stirred-mill shipments. ([longlymill.com](https://www.longlymill.com/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: LONGLY discloses current annual capacity above 2,000 equipment units and commercial wet-grinding offerings. Capacity is bridged through explicitly assumed timing, utilization and eligible-product factors; it is not reported 2025 stirred-mill shipments. ([longlymill.com](https://www.longlymill.com/))

23. Ultra-Fine Grinding - Hosokawa Micron Malaysia

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The inspected ultrafine portfolio identifies AWM-F table-roller equipment, supporting the qualifying Roller Mills boundary, not its assumed counts or prices. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The inspected ultrafine portfolio identifies AWM-F table-roller equipment, supporting the qualifying Roller Mills boundary, not its assumed counts or prices. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Super Orion is a marketed rotary ball-mill constituent of the combined rotary/planetary category. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Super Orion is a marketed rotary ball-mill constituent of the combined rotary/planetary category. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: MJT is explicitly listed as a target-type offering, supporting precedence of the named platform over overlapping generic jet terminology. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: MJT is explicitly listed as a target-type offering, supporting precedence of the named platform over overlapping generic jet terminology. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

24. Loop Jet Mill - Consistency. Compliance. Engineered.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The current named Loop Jet Mill listing establishes an offered commercial platform. It supports forecast category continuity, but does not disclose subtype revenue or prove 2025 sales. ([jetmillmfg.com](https://www.jetmillmfg.com/loop-jet-mill/))
25. SWECO Vibratory Grinding and Particle Size Reduction Equipment
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: SWECO markets Vibro-Energy grinding equipment with separate wet and wet/dry offerings. This supports commercial category and configuration mapping, not the modeled frequency of purchases. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: SWECO markets Vibro-Energy grinding equipment with separate wet and wet/dry offerings. This supports commercial category and configuration mapping, not the modeled frequency of purchases. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Named wet/dry models establish dual-state availability; they do not establish the exact supplied configuration or a market-wide value share. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Named wet/dry models establish dual-state availability; they do not establish the exact supplied configuration or a market-wide value share. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))
26. Fine-cutting mill with rotating classifying feature - the sensational new development!
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The September xx.xx 2014 own-product announcement establishes a pre-base-year SecoMy S cutting offering described for ultrafine commercial applications. It is category evidence, not annual equipment revenue. ([grinding.netzsch.com](https://grinding.netzsch.com/en/news/2014/fine-cutting-mill-with-rotating-classifying-feature-the-sensational-new-development))
27. NETZSCH SecoMy S - Precision Cutting Redefined!
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The August 2026 SecoMy S brochure confirms continuing commercial ultrafine-cutting positioning and system-supply availability. It supports category persistence, not the assumed forecast spending share. ([grinding.netzsch.com](https://grinding.netzsch.com/_Resources/Persistent/xx.xx/e/xx.xx/b/8e4b5adcfc16fcc2d83974f8080d614cce1a2c01/NETZSCH_Fine_Cutting_Mill_SecoMy_S_e.pdf))
28. Wet Milling and Dispersing Device - Star Burst - Sugino Corp.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: SUGINO's Star Burst portfolio identifies wet-jet equipment across research and production purchasing contexts. Only milling-attributable supply is included; adjacent droplet-only or dispersion activity is not automatically counted. ([suginocorp.com](https://www.suginocorp.com/star-burst/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: SUGINO's Star Burst portfolio identifies wet-jet equipment across research and production purchasing contexts. Only milling-attributable supply is included; adjacent droplet-only or dispersion activity is not automatically counted. ([suginocorp.com](https://www.suginocorp.com/star-burst/))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The wet-jet offering supports wet-state classification within the joint value model, not the total Wet Grinding share. ([suginocorp.com](https://www.suginocorp.com/star-burst/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The wet-jet offering supports wet-state classification within the joint value model, not the total Wet Grinding share. ([suginocorp.com](https://www.suginocorp.com/star-burst/))

29. IBU-tec | Mills - Milling Technology for Dry and Wet Grinding
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operator table separately lists two dry opposed-jet units. This is an installed-inventory observation, not a shipment or revenue ratio. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operator table separately lists two dry opposed-jet units. This is an installed-inventory observation, not a shipment or revenue ratio. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Three wet agitator-bead units are separately inventoried, supporting state-specific commercial classification without using their count as a market weight. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Three wet agitator-bead units are separately inventoried, supporting state-specific commercial classification without using their count as a market weight. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
30. Comminution - NTNU
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: NTNU separately records wet/dry capability for stirred and planetary equipment; the inventory is not a representative value-share dataset. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: NTNU separately records wet/dry capability for stirred and planetary equipment; the inventory is not a representative value-share dataset. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The planetary equipment is recorded as batch, supporting a laboratory batch context without assuming all laboratories are batch-only. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The planetary equipment is recorded as batch, supporting a laboratory batch context without assuming all laboratories are batch-only. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The laboratory jet rig is recorded as continuous, independently challenging equivalence between continuous mode and industrial scale. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The laboratory jet rig is recorded as continuous, independently challenging equivalence between continuous mode and industrial scale. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
31. Dry Batch Or Continuous Laboratory Mills - Union Process
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Union Process identifies SD-xx.xx as one laboratory offering for both batch and continuous service. Configuration-specific purchase inclusion and revenue are undisclosed. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Union Process identifies SD-xx.xx as one laboratory offering for both batch and continuous service. Configuration-specific purchase inclusion and revenue are undisclosed. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The same named offering advertises wet/dry capability, supporting a dual-state category premise rather than an observed adoption percentage. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The same named offering advertises wet/dry capability, supporting a dual-state category premise rather than an observed adoption percentage. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))

32. Retsch Contact & Services - Contact Partners Worldwide

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: RETSCH describes a network including daughter companies. Manufacturer affiliation, rather than contact location, informs direct-route attribution. ([retsch.com](https://www.retsch.com/contact-services/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: RETSCH describes a network including daughter companies. Manufacturer affiliation, rather than contact location, informs direct-route attribution. ([retsch.com](https://www.retsch.com/contact-services/))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The network also includes trained distributors, establishing a resale-access premise but not distributor ownership roles or annual sales weights. ([retsch.com](https://www.retsch.com/contact-services/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The network also includes trained distributors, establishing a resale-access premise but not distributor ownership roles or annual sales weights. ([retsch.com](https://www.retsch.com/contact-services/))

33. HOSOKAWA ALPINE Aktiengesellschaft - Conditions of Sale 371_00 EN

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Hosokawa requires company confirmation of representatives' transactions and makes contractual scope authoritative. The terms support agency-role attribution, not the assumed agent percentage. ([hosokawa-alpine.com](https://www.hosokawa-alpine.com/fileadmin/allgemein/Legal/AGB/AGB_Verkaufsbedingungen_en_371_00.pdf))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Hosokawa requires company confirmation of representatives' transactions and makes contractual scope authoritative. The terms support agency-role attribution, not the assumed agent percentage. ([hosokawa-alpine.com](https://www.hosokawa-alpine.com/fileadmin/allgemein/Legal/AGB/AGB_Verkaufsbedingungen_en_371_00.pdf))

34. UNSD - ISIC Rev.5, Class 4610: Wholesale on a Fee or Contract Basis

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: ISIC Rev.xx.xx class xx.xx defines fee/commission intermediation without ownership, supporting a non-title-taking agency numerator distinct from goods supplied on own account. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: ISIC Rev.xx.xx class xx.xx defines fee/commission intermediation without ownership, supporting a non-title-taking agency numerator distinct from goods supplied on own account. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Own-account wholesale is excluded from the agency class, supporting the reseller/agent partition without supplying ultrafine-mill channel shares. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own-account wholesale is excluded from the agency class, supporting the reseller/agent partition without supplying ultrafine-mill channel shares. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))

35. ITDI-PB-2024-057 - Supply, Delivery, Installation and Commissioning of Ultra-fine Friction Grinder

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The 2024 friction-grinder procurement had a PHP xx.xx budget and failed with no bidder. It establishes a configured-package spending ceiling and commercial category, not a sale or a shipment count. ([notices.philgeps.gov.ph](https://notices.philgeps.gov.ph/GEPSNONPILOT/Tender/PrintableBidNoticeAbstractUI.aspx?refid=xx.xx))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The 2024 friction-grinder procurement had a PHP xx.xx budget and failed with no bidder. It establishes a configured-package spending ceiling and commercial category, not a sale or a shipment count. ([notices.philgeps.gov.ph](https://notices.philgeps.gov.ph/GEPSNONPILOT/Tender/PrintableBidNoticeAbstractUI.aspx?refid=xx.xx))

36. Bangko Sentral ng Pilipinas - Balance of Payments Report, Q4 2024

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The central bank reports a 2024 average of PHP xx.xx per USD. Dividing the failed PHP xx.xx procurement budget by this rate gives an approximately USD xx.xx comparison ceiling, not realized equipment revenue. ([bsp.gov.ph](https://www.bsp.gov.ph/Media_And_Research/Balance%20of%20Payments%20Report/2024/BOP_4qtr2024.pdf))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The central bank reports a 2024 average of PHP xx.xx per USD. Dividing the failed PHP xx.xx procurement budget by this rate gives an approximately USD xx.xx comparison ceiling, not realized equipment revenue. ([bsp.gov.ph](https://www.bsp.gov.ph/Media_And_Research/Balance%20of%20Payments%20Report/2024/BOP_4qtr2024.pdf))

17.13. Canada

Table 450. Canada Ultra Fine Grinding Mill Market Size, 2017-2040 (USD Million)

Country	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Canada	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 451. Canada Ultra Fine Grinding Mill Market Size, by Supply Scope, 2017-2040 (USD Million)

Supply Scope	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Integrated Milling Packages	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Standalone Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 452. Canada Ultra Fine Grinding Mill Market Size, by Mill Technology, 2017-2040 (USD Million)

Mill Technology	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Cutting Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Disc and Colloid Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Gas-Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mechanical Impact Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Media Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Roller Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wet-Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 453. Canada Ultra Fine Grinding Mill Market Size, by Media Mills, 2017-2040 (USD Million)

Media Mills	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Rotary and Planetary Ball Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Stirred Media Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Vibratory Media Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 454. Canada Ultra Fine Grinding Mill Market Size, by Gas-Jet Mills, 2017-2040 (USD Million)

Gas-Jet Mills	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Loop Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Opposed-Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Spiral Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Target Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 455. Canada Ultra Fine Grinding Mill Market Size, by Processed Material, 2017-2040 (USD Million)

Processed Material	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Biomass and Natural Ingredients	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Carbonaceous Materials	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Formulations and Composites	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Industrial Minerals	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Inorganic Chemicals, Ceramics, and Glass	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Metal Ores and Concentrates	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Metals and Alloys	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Organic Chemicals	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Polymers and Elastomers	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 456. Canada Ultra Fine Grinding Mill Market Size, by Buyer Industry, 2017-2040 (USD Million)

Buyer Industry	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Chemical and Fuel Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Electrical and Electronic Product Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Food, Beverage, and Feed Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Glass, Ceramics, and Construction Materials Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Materials Recovery and Recycling	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Metals and Fabricated Metal Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mining and Mineral Processing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Pharmaceutical Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Power and Heat Generation	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Research, Education, and Testing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Rubber and Plastics Product Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wood, Pulp, and Paper Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 457. Canada Ultra Fine Grinding Mill Market Size, by Deployment Scale, 2017-2040 (USD Million)

Deployment Scale	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Industrial Production	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Laboratory	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Pilot	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 458. Canada Ultra Fine Grinding Mill Market Size, by Sales Channel, 2017-2040 (USD Million)

Sales Channel	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Agent-Mediated Sales	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Independent Reseller Sales	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Manufacturer-Direct Sales	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 459. Canada Ultra Fine Grinding Mill Market Size, by Processing State, 2017-2040 (USD Million)

Processing State	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Dry Grinding	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wet and Dry Grinding	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wet Grinding	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 460. Canada Ultra Fine Grinding Mill Market Size, by Operating Mode, 2017-2040 (USD Million)

Operating Mode	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Batch	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Batch and Continuous	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Continuous	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Sources & Evidence

1. Hosokawa Micron - FY2025 Financial Results Presentation, November 25, 2025 (Japanese)
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; material attribution modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; material attribution modeled.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; establishment attribution modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; establishment attribution modeled.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; buyer attribution assumed.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; buyer attribution assumed.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; qualifying power attribution unverified.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; qualifying power attribution unverified.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; institutional attribution assumed.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; institutional attribution assumed.

2. Metso Receives Order for Grinding Mills to a Copper Project in Africa
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Approximately EUR xx.xx 2024 HIGmill order includes auxiliaries and services; a package-scale anchor, not recognized annual revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Approximately EUR xx.xx 2024 HIGmill order includes auxiliaries and services; a package-scale anchor, not recognized annual revenue.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The copper-project award establishes an ore/concentrate commercial purchasing context.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The copper-project award establishes an ore/concentrate commercial purchasing context.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The award concerns an African mining project; it does not disclose the global mining-buyer share.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The award concerns an African mining project; it does not disclose the global mining-buyer share.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Large industrial equipment procurement supports the production-scale category premise.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Large industrial equipment procurement supports the production-scale category premise.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The August xx.xx 2024 announcement records an approximately EUR xx.xx HIGmill order including auxiliaries and services. It anchors package-level commercial materiality, not a mill unit price or 2025 recognized revenue. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The August xx.xx 2024 announcement records an approximately EUR xx.xx HIGmill order including auxiliaries and services. It anchors package-level commercial materiality, not a mill unit price or 2025 recognized revenue. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The stirred-package order supports the Media Mills value-weight model and continuing commercial-demand premise, with order-to-revenue timing unresolved. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The stirred-package order supports the Media Mills value-weight model and continuing commercial-demand premise, with order-to-revenue timing unresolved. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
3. HIGmill Plant - Metso
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Standalone marketing terminology does not establish the study's Standalone Mills equipment scope.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Standalone marketing terminology does not establish the study's Standalone Mills equipment scope.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: HIGmill Plant includes pre-engineered auxiliary modules, supporting classification as an equipment package.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: HIGmill Plant includes pre-engineered auxiliary modules, supporting classification as an equipment package.

4. IsaMill - About, Technology Partnership and Engineering
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Delivery alternatives permit mill-only supply or additional auxiliary equipment; actual equipment scope determines attribution.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Delivery alternatives permit mill-only supply or additional auxiliary equipment; actual equipment scope determines attribution.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Modular auxiliary-inclusive and turnkey alternatives support differentiated package scope, without proving a global adoption percentage.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Modular auxiliary-inclusive and turnkey alternatives support differentiated package scope, without proving a global adoption percentage.
5. Commission Processing - NIPPON COKE & ENGINEERING CO., LTD.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Own commercial processing portfolio identifies glass, ceramics and inorganic materials; establishes material mapping, not equipment revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own commercial processing portfolio identifies glass, ceramics and inorganic materials; establishes material mapping, not equipment revenue.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Organic pigments are named commercial processing materials.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Organic pigments are named commercial processing materials.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Metal powders are named commercial processing materials.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Metal powders are named commercial processing materials.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Carbon is identified in the operator's commercial grinding portfolio.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Carbon is identified in the operator's commercial grinding portfolio.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Thermosetting resin supports a polymer-material category premise.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Thermosetting resin supports a polymer-material category premise.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Ink-related grinding establishes a commercial reference but does not resolve whole-formulation versus constituent duty.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Ink-related grinding establishes a commercial reference but does not resolve whole-formulation versus constituent duty.

6. Micronization / Grinding - A. Ebbecke Verfahrenstechnik AG
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Commercial contract-grinding coverage includes natural materials and food ingredients; processing fees are excluded from equipment value.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Commercial contract-grinding coverage includes natural materials and food ingredients; processing fees are excluded from equipment value.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Plastic granulates and resins establish material coverage, not downstream customers' equipment ownership.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Plastic granulates and resins establish material coverage, not downstream customers' equipment ownership.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operator-side food-processing reference supports establishment attribution rather than automatically assigning equipment to its customers.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operator-side food-processing reference supports establishment attribution rather than automatically assigning equipment to its customers.
7. Manufacturing Capabilities - Asbury Advanced Materials
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Own manufacturing disclosure identifies carbon-material grinding and micronization; supports the material-duty premise only.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own manufacturing disclosure identifies carbon-material grinding and micronization; supports the material-duty premise only.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Custom formulations and dispersions are commercial outputs, but joint whole-formulation milling remains unmeasured.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Custom formulations and dispersions are commercial outputs, but joint whole-formulation milling remains unmeasured.
8. Pyrum Innovations AG - Interim Group Report January 1 to June 30, 2025
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The purchaser's 2025 report records a grinding-plant installation associated with recovered carbon black; no downstream material revenue is counted.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The purchaser's 2025 report records a grinding-plant installation associated with recovered carbon black; no downstream material revenue is counted.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The report establishes an actual recovery-business equipment context, while the exact attributable mill expenditure remains undisclosed.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The report establishes an actual recovery-business equipment context, while the exact attributable mill expenditure remains undisclosed.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The disclosed commercial-site grinding installation supports Industrial Production classification.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The disclosed commercial-site grinding installation supports Industrial Production classification.

9. NRRI Advances Efficient Grinding Technology on the Iron Range
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The institution distinguishes a planned bench-scale purchase from its loaned pilot equipment; not a completed-sale census.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The institution distinguishes a planned bench-scale purchase from its loaned pilot equipment; not a completed-sale census.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The May xx.xx 2024 account identifies a loaned pilot stirred mill; unpaid placement is not counted as equipment-sale revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The May xx.xx 2024 account identifies a loaned pilot stirred mill; unpaid placement is not counted as equipment-sale revenue.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operating research institute is distinct from its mining clients, supporting buyer/material separation.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operating research institute is distinct from its mining clients, supporting buyer/material separation.
10. Planetary Ball Mill PM 100 - RETSCH
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The PM xx.xx is marketed as a benchtop instrument, supporting the small-laboratory pool classification without establishing sales weight.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The PM xx.xx is marketed as a benchtop instrument, supporting the small-laboratory pool classification without establishing sales weight.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The individual-instrument offering supports a narrower equipment-supply alternative; package incidence remains modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The individual-instrument offering supports a narrower equipment-supply alternative; package incidence remains modeled.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: PM xx.xx is a marketed benchtop planetary platform, supporting laboratory-category mapping rather than shipment or price weights. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: PM xx.xx is a marketed benchtop planetary platform, supporting laboratory-category mapping rather than shipment or price weights. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The product page advertises both dry and wet capability. Actual dual-state purchase inclusion remains an explicit model assumption. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The product page advertises both dry and wet capability. Actual dual-state purchase inclusion remains an explicit model assumption. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))

11. Jet Mill - Contract History CW2408170, CanadaBuys
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: A May xx.xx 2026 laboratory jet-mill award totals CAD xx.xx; a dated procurement check, not a 2025 shipment or global average price.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: A May xx.xx 2026 laboratory jet-mill award totals CAD xx.xx; a dated procurement check, not a 2025 shipment or global average price.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The record distinguishes Natural Resources Canada as buying organization from PSPC as contracting organization, supporting establishment attribution.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The record distinguishes Natural Resources Canada as buying organization from PSPC as contracting organization, supporting establishment attribution.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The jet-mill award totals CAD xx.xx and is dated May xx.xx 2026. It is a nearby-period laboratory purchasing comparator, not a 2025 recognized sale, and supplies neither a gas-jet subtype nor a definitive channel role. ([canadabuys.canada.ca](https://canadabuys.canada.ca/en/tender-opportunities/contract-history/cw2408170-xx.xx))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The jet-mill award totals CAD xx.xx and is dated May xx.xx 2026. It is a nearby-period laboratory purchasing comparator, not a 2025 recognized sale, and supplies neither a gas-jet subtype nor a definitive channel role. ([canadabuys.canada.ca](https://canadabuys.canada.ca/en/tender-opportunities/contract-history/cw2408170-xx.xx))
12. MFC Production Equipment - FiberLean
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The manufacturer's commercial offering targets pulp, paper and related establishments; it is not a measured industry sales share.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The manufacturer's commercial offering targets pulp, paper and related establishments; it is not a measured industry sales share.
13. Pulverizing Equipment - Coperion
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The broader portfolio names power-generation applications and separately lists ultrafine equipment; this limits, rather than verifies, the assumed qualifying power-buyer allocation.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The broader portfolio names power-generation applications and separately lists ultrafine equipment; this limits, rather than verifies, the assumed qualifying power-buyer allocation.
14. LG Energy Solution Releases 2025 Financial Results - January 29, 2026
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own 2025 revenue decline and dated 2026 capital-expenditure reduction target constrain battery-related equipment-adoption assumptions.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Existing-asset reuse strategy qualifies a direct downstream-demand-to-new-carbon-material-mill investment inference.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Buyer investment restraint constrains the relative application multiplier; upstream chemical attribution remains separately assumed.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own battery-manufacturer financial and investment plans provide a counter-test, not an ultrafine equipment purchasing total.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The January 2026 emphasis on reduced new investment qualifies automatic growth in broader equipment-package adoption.

15. UNSD Classification Detail - ISIC Rev.4, Class 3830: Materials Recovery
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The official classification distinguishes secondary-material recovery from manufacture of new final products; it supplies no equipment sales weight.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The official classification distinguishes secondary-material recovery from manufacture of new final products; it supplies no equipment sales weight.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Recovered-input use alone does not classify the equipment operator as a recovery establishment rather than a product manufacturer.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Recovered-input use alone does not classify the equipment operator as a recovery establishment rather than a product manufacturer.
16. Ultrafin Mill: Super Masscolloider, Masuko MKCA6-5J CE - University of Ljubljana
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The university inventories a laboratory ultrafine mill within wood science; the institutional operator is not a wood-products manufacturer.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The university inventories a laboratory ultrafine mill within wood science; the institutional operator is not a wood-products manufacturer.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The institutional inventory expressly identifies laboratory equipment, supporting deployment classification without establishing a purchase-year value.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The institutional inventory expressly identifies laboratory equipment, supporting deployment classification without establishing a purchase-year value.
17. Contract Manufacturing of Pharmaceuticals - YUKI GOSEI KOGYO CO., LTD.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operator distinguishes production jet mills from smaller equipment, supporting industrial deployment at a pharmaceutical contract manufacturer.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operator distinguishes production jet mills from smaller equipment, supporting industrial deployment at a pharmaceutical contract manufacturer.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The actual pharmaceutical manufacturing operator is distinct from customers outsourcing production; processing-service receipts remain excluded.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The actual pharmaceutical manufacturing operator is distinct from customers outsourcing production; processing-service receipts remain excluded.

18. Record year for Metso stirred mills as mining industry opts for energy-efficient comminution technology

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Metso reports more than twenty Vertimill sales in 2025 and approximately xx.xx cumulative stirred-mill deliveries. Broader application coverage prevents treating these as ultrafine-only annual shipments; they constrain the modeled stirred/mining allocation and forecast premise.
([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Metso reports more than twenty Vertimill sales in 2025 and approximately xx.xx cumulative stirred-mill deliveries. Broader application coverage prevents treating these as ultrafine-only annual shipments; they constrain the modeled stirred/mining allocation and forecast premise.
([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The disclosed stirred-equipment activity supports material Media Mills participation, not the final modeled parent share.
([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The disclosed stirred-equipment activity supports material Media Mills participation, not the final modeled parent share.
([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))

19. Bühler strengthens its market position

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Bühler reports xx.xx% Grinding & Dispersing order growth in 2025 against a xx.xx% decline in broader Advanced Materials orders. This is a mixed commercial leading indicator, not observed market-share growth.
([buhlergroup.com](https://www.buhlergroup.com/global/en/media/media-releases/b%C3%BChler-strengthens-its-marketposition.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Bühler reports xx.xx% Grinding & Dispersing order growth in 2025 against a xx.xx% decline in broader Advanced Materials orders. This is a mixed commercial leading indicator, not observed market-share growth.
([buhlergroup.com](https://www.buhlergroup.com/global/en/media/media-releases/b%C3%BChler-strengthens-its-marketposition.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The disclosed battery-related and other application orders constrain differentiated Media Mills forecast assumptions without converting orders directly to annual equipment revenue.
([buhlergroup.com](https://www.buhlergroup.com/global/en/media/media-releases/b%C3%BChler-strengthens-its-marketposition.html))

20. Management Greetings | HOSOKAWAMICRON CORPORATION

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Hosokawa reports FY2025 net sales of JPY xx.xx, down xx.xx%, and orders down xx.xx%. The diversified-company result challenges uniform purchasing acceleration and constrains, rather than directly measures, technology-mix assumptions.
([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/ir/management_policy/management_greetings.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Hosokawa reports FY2025 net sales of JPY xx.xx, down xx.xx%, and orders down xx.xx%. The diversified-company result challenges uniform purchasing acceleration and constrains, rather than directly measures, technology-mix assumptions.
([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/ir/management_policy/management_greetings.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The same broader financial contraction is counterevidence to assuming uniform Media Mills growth across suppliers; no corporate revenue is assigned directly to the category.
([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/ir/management_policy/management_greetings.html))

21. Details of micromeritics | HOSOKAWAMICRON CORPORATION

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Hosokawa identifies its AS spiral offering, supporting subtype mapping rather than a sales weight. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Hosokawa identifies its AS spiral offering, supporting subtype mapping rather than a sales weight. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The AFG/TFG counterjet offerings support the retained Opposed-Jet commercial mapping. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The AFG/TFG counterjet offerings support the retained Opposed-Jet commercial mapping. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The manufacturer identifies Innovomizer as a mechanical ultrafine offering; ordinary impact equipment is not automatically included. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The manufacturer identifies Innovomizer as a mechanical ultrafine offering; ordinary impact equipment is not automatically included. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

22. Grinding Equipment Manufacturer Supplier Factory, Grinding System | Longly

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: LONGLY discloses current annual capacity above 2,000 equipment units and commercial wet-grinding offerings. Capacity is bridged through explicitly assumed timing, utilization and eligible-product factors; it is not reported 2025 stirred-mill shipments. ([longlymill.com](https://www.longlymill.com/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: LONGLY discloses current annual capacity above 2,000 equipment units and commercial wet-grinding offerings. Capacity is bridged through explicitly assumed timing, utilization and eligible-product factors; it is not reported 2025 stirred-mill shipments. ([longlymill.com](https://www.longlymill.com/))

23. Ultra-Fine Grinding - Hosokawa Micron Malaysia

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The inspected ultrafine portfolio identifies AWM-F table-roller equipment, supporting the qualifying Roller Mills boundary, not its assumed counts or prices. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The inspected ultrafine portfolio identifies AWM-F table-roller equipment, supporting the qualifying Roller Mills boundary, not its assumed counts or prices. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Super Orion is a marketed rotary ball-mill constituent of the combined rotary/planetary category. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Super Orion is a marketed rotary ball-mill constituent of the combined rotary/planetary category. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: MJT is explicitly listed as a target-type offering, supporting precedence of the named platform over overlapping generic jet terminology. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: MJT is explicitly listed as a target-type offering, supporting precedence of the named platform over overlapping generic jet terminology. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

24. Loop Jet Mill - Consistency. Compliance. Engineered.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The current named Loop Jet Mill listing establishes an offered commercial platform. It supports forecast category continuity, but does not disclose subtype revenue or prove 2025 sales. ([jetmillmfg.com](https://www.jetmillmfg.com/loop-jet-mill/))
25. SWECO Vibratory Grinding and Particle Size Reduction Equipment
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: SWECO markets Vibro-Energy grinding equipment with separate wet and wet/dry offerings. This supports commercial category and configuration mapping, not the modeled frequency of purchases. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: SWECO markets Vibro-Energy grinding equipment with separate wet and wet/dry offerings. This supports commercial category and configuration mapping, not the modeled frequency of purchases. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Named wet/dry models establish dual-state availability; they do not establish the exact supplied configuration or a market-wide value share. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Named wet/dry models establish dual-state availability; they do not establish the exact supplied configuration or a market-wide value share. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))
26. Fine-cutting mill with rotating classifying feature - the sensational new development!
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The September xx.xx 2014 own-product announcement establishes a pre-base-year SecoMy S cutting offering described for ultrafine commercial applications. It is category evidence, not annual equipment revenue. ([grinding.netzsch.com](https://grinding.netzsch.com/en/news/2014/fine-cutting-mill-with-rotating-classifying-feature-the-sensational-new-development))
27. NETZSCH SecoMy S - Precision Cutting Redefined!
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The August 2026 SecoMy S brochure confirms continuing commercial ultrafine-cutting positioning and system-supply availability. It supports category persistence, not the assumed forecast spending share. ([grinding.netzsch.com](https://grinding.netzsch.com/_Resources/Persistent/xx.xx/e/xx.xx/b/8e4b5adcfc16fcc2d83974f8080d614cce1a2c01/NETZSCH_Fine_Cutting_Mill_SecoMy_S_e.pdf))
28. Wet Milling and Dispersing Device - Star Burst - Sugino Corp.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: SUGINO's Star Burst portfolio identifies wet-jet equipment across research and production purchasing contexts. Only milling-attributable supply is included; adjacent droplet-only or dispersion activity is not automatically counted. ([suginocorp.com](https://www.suginocorp.com/star-burst/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: SUGINO's Star Burst portfolio identifies wet-jet equipment across research and production purchasing contexts. Only milling-attributable supply is included; adjacent droplet-only or dispersion activity is not automatically counted. ([suginocorp.com](https://www.suginocorp.com/star-burst/))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The wet-jet offering supports wet-state classification within the joint value model, not the total Wet Grinding share. ([suginocorp.com](https://www.suginocorp.com/star-burst/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The wet-jet offering supports wet-state classification within the joint value model, not the total Wet Grinding share. ([suginocorp.com](https://www.suginocorp.com/star-burst/))

29. IBU-tec | Mills - Milling Technology for Dry and Wet Grinding
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operator table separately lists two dry opposed-jet units. This is an installed-inventory observation, not a shipment or revenue ratio. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operator table separately lists two dry opposed-jet units. This is an installed-inventory observation, not a shipment or revenue ratio. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Three wet agitator-bead units are separately inventoried, supporting state-specific commercial classification without using their count as a market weight. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Three wet agitator-bead units are separately inventoried, supporting state-specific commercial classification without using their count as a market weight. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
30. Comminution - NTNU
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: NTNU separately records wet/dry capability for stirred and planetary equipment; the inventory is not a representative value-share dataset. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: NTNU separately records wet/dry capability for stirred and planetary equipment; the inventory is not a representative value-share dataset. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The planetary equipment is recorded as batch, supporting a laboratory batch context without assuming all laboratories are batch-only. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The planetary equipment is recorded as batch, supporting a laboratory batch context without assuming all laboratories are batch-only. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The laboratory jet rig is recorded as continuous, independently challenging equivalence between continuous mode and industrial scale. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The laboratory jet rig is recorded as continuous, independently challenging equivalence between continuous mode and industrial scale. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
31. Dry Batch Or Continuous Laboratory Mills - Union Process
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Union Process identifies SD-xx.xx as one laboratory offering for both batch and continuous service. Configuration-specific purchase inclusion and revenue are undisclosed. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Union Process identifies SD-xx.xx as one laboratory offering for both batch and continuous service. Configuration-specific purchase inclusion and revenue are undisclosed. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The same named offering advertises wet/dry capability, supporting a dual-state category premise rather than an observed adoption percentage. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The same named offering advertises wet/dry capability, supporting a dual-state category premise rather than an observed adoption percentage. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))

32. Retsch Contact & Services - Contact Partners Worldwide

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: RETSCH describes a network including daughter companies. Manufacturer affiliation, rather than contact location, informs direct-route attribution. ([retsch.com](https://www.retsch.com/contact-services/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: RETSCH describes a network including daughter companies. Manufacturer affiliation, rather than contact location, informs direct-route attribution. ([retsch.com](https://www.retsch.com/contact-services/))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The network also includes trained distributors, establishing a resale-access premise but not distributor ownership roles or annual sales weights. ([retsch.com](https://www.retsch.com/contact-services/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The network also includes trained distributors, establishing a resale-access premise but not distributor ownership roles or annual sales weights. ([retsch.com](https://www.retsch.com/contact-services/))

33. HOSOKAWA ALPINE Aktiengesellschaft - Conditions of Sale 371_00 EN

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Hosokawa requires company confirmation of representatives' transactions and makes contractual scope authoritative. The terms support agency-role attribution, not the assumed agent percentage. ([hosokawa-alpine.com](https://www.hosokawa-alpine.com/fileadmin/allgemein/Legal/AGB/AGB_Verkaufsbedingungen_en_371_00.pdf))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Hosokawa requires company confirmation of representatives' transactions and makes contractual scope authoritative. The terms support agency-role attribution, not the assumed agent percentage. ([hosokawa-alpine.com](https://www.hosokawa-alpine.com/fileadmin/allgemein/Legal/AGB/AGB_Verkaufsbedingungen_en_371_00.pdf))

34. UNSD - ISIC Rev.5, Class 4610: Wholesale on a Fee or Contract Basis

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: ISIC Rev.xx.xx class xx.xx defines fee/commission intermediation without ownership, supporting a non-title-taking agency numerator distinct from goods supplied on own account. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: ISIC Rev.xx.xx class xx.xx defines fee/commission intermediation without ownership, supporting a non-title-taking agency numerator distinct from goods supplied on own account. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Own-account wholesale is excluded from the agency class, supporting the reseller/agent partition without supplying ultrafine-mill channel shares. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own-account wholesale is excluded from the agency class, supporting the reseller/agent partition without supplying ultrafine-mill channel shares. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))

35. ITDI-PB-2024-057 - Supply, Delivery, Installation and Commissioning of Ultra-fine Friction Grinder

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The 2024 friction-grinder procurement had a PHP xx.xx budget and failed with no bidder. It establishes a configured-package spending ceiling and commercial category, not a sale or a shipment count. ([notices.philgeps.gov.ph](https://notices.philgeps.gov.ph/GEPSNONPILOT/Tender/PrintableBidNoticeAbstractUI.aspx?refid=xx.xx))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The 2024 friction-grinder procurement had a PHP xx.xx budget and failed with no bidder. It establishes a configured-package spending ceiling and commercial category, not a sale or a shipment count. ([notices.philgeps.gov.ph](https://notices.philgeps.gov.ph/GEPSNONPILOT/Tender/PrintableBidNoticeAbstractUI.aspx?refid=xx.xx))

36. Bangko Sentral ng Pilipinas - Balance of Payments Report, Q4 2024

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The central bank reports a 2024 average of PHP xx.xx per USD. Dividing the failed PHP xx.xx procurement budget by this rate gives an approximately USD xx.xx comparison ceiling, not realized equipment revenue. ([bsp.gov.ph](https://www.bsp.gov.ph/Media_And_Research/Balance%20of%20Payments%20Report/2024/BOP_4qtr2024.pdf))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The central bank reports a 2024 average of PHP xx.xx per USD. Dividing the failed PHP xx.xx procurement budget by this rate gives an approximately USD xx.xx comparison ceiling, not realized equipment revenue. ([bsp.gov.ph](https://www.bsp.gov.ph/Media_And_Research/Balance%20of%20Payments%20Report/2024/BOP_4qtr2024.pdf))

17.14. Mexico

Table 461. Mexico Ultra Fine Grinding Mill Market Size, 2017-2040 (USD Million)

Country	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Mexico	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 462. Mexico Ultra Fine Grinding Mill Market Size, by Supply Scope, 2017-2040 (USD Million)

Supply Scope	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Integrated Milling Packages	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Standalone Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 463. Mexico Ultra Fine Grinding Mill Market Size, by Mill Technology, 2017-2040 (USD Million)

Mill Technology	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Cutting Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Disc and Colloid Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Gas-Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mechanical Impact Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Media Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Roller Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wet-Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 464. Mexico Ultra Fine Grinding Mill Market Size, by Media Mills, 2017-2040 (USD Million)

Media Mills	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Rotary and Planetary Ball Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Stirred Media Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Vibratory Media Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 465. Mexico Ultra Fine Grinding Mill Market Size, by Gas-Jet Mills, 2017-2040 (USD Million)

Gas-Jet Mills	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Loop Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Opposed-Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Spiral Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Target Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 466. Mexico Ultra Fine Grinding Mill Market Size, by Processed Material, 2017-2040 (USD Million)

Processed Material	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Biomass and Natural Ingredients	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Carbonaceous Materials	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Formulations and Composites	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Industrial Minerals	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Inorganic Chemicals, Ceramics, and Glass	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Metal Ores and Concentrates	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Metals and Alloys	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Organic Chemicals	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Polymers and Elastomers	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 467. Mexico Ultra Fine Grinding Mill Market Size, by Buyer Industry, 2017-2040 (USD Million)

Buyer Industry	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Chemical and Fuel Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Electrical and Electronic Product Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Food, Beverage, and Feed Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Glass, Ceramics, and Construction Materials Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Materials Recovery and Recycling	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Metals and Fabricated Metal Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mining and Mineral Processing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Pharmaceutical Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Power and Heat Generation	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Research, Education, and Testing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Rubber and Plastics Product Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wood, Pulp, and Paper Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 468. Mexico Ultra Fine Grinding Mill Market Size, by Deployment Scale, 2017-2040 (USD Million)

Deployment Scale	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Industrial Production	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Laboratory	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Pilot	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 469. Mexico Ultra Fine Grinding Mill Market Size, by Sales Channel, 2017-2040 (USD Million)

Sales Channel	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Agent-Mediated Sales	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Independent Reseller Sales	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Manufacturer-Direct Sales	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 470. Mexico Ultra Fine Grinding Mill Market Size, by Processing State, 2017-2040 (USD Million)

Processing State	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Dry Grinding	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wet and Dry Grinding	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wet Grinding	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 471. Mexico Ultra Fine Grinding Mill Market Size, by Operating Mode, 2017-2040 (USD Million)

Operating Mode	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Batch	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Batch and Continuous	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Continuous	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Sources & Evidence

1. Hosokawa Micron - FY2025 Financial Results Presentation, November 25, 2025 (Japanese)
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; material attribution modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; material attribution modeled.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; establishment attribution modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; establishment attribution modeled.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; buyer attribution assumed.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; buyer attribution assumed.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; qualifying power attribution unverified.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; qualifying power attribution unverified.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; institutional attribution assumed.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; institutional attribution assumed.

2. Metso Receives Order for Grinding Mills to a Copper Project in Africa
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Approximately EUR xx.xx 2024 HIGmill order includes auxiliaries and services; a package-scale anchor, not recognized annual revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Approximately EUR xx.xx 2024 HIGmill order includes auxiliaries and services; a package-scale anchor, not recognized annual revenue.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The copper-project award establishes an ore/concentrate commercial purchasing context.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The copper-project award establishes an ore/concentrate commercial purchasing context.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The award concerns an African mining project; it does not disclose the global mining-buyer share.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The award concerns an African mining project; it does not disclose the global mining-buyer share.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Large industrial equipment procurement supports the production-scale category premise.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Large industrial equipment procurement supports the production-scale category premise.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The August xx.xx 2024 announcement records an approximately EUR xx.xx HIGmill order including auxiliaries and services. It anchors package-level commercial materiality, not a mill unit price or 2025 recognized revenue. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The August xx.xx 2024 announcement records an approximately EUR xx.xx HIGmill order including auxiliaries and services. It anchors package-level commercial materiality, not a mill unit price or 2025 recognized revenue. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The stirred-package order supports the Media Mills value-weight model and continuing commercial-demand premise, with order-to-revenue timing unresolved. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The stirred-package order supports the Media Mills value-weight model and continuing commercial-demand premise, with order-to-revenue timing unresolved. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
3. HIGmill Plant - Metso
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Standalone marketing terminology does not establish the study's Standalone Mills equipment scope.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Standalone marketing terminology does not establish the study's Standalone Mills equipment scope.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: HIGmill Plant includes pre-engineered auxiliary modules, supporting classification as an equipment package.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: HIGmill Plant includes pre-engineered auxiliary modules, supporting classification as an equipment package.

4. IsaMill - About, Technology Partnership and Engineering
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Delivery alternatives permit mill-only supply or additional auxiliary equipment; actual equipment scope determines attribution.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Delivery alternatives permit mill-only supply or additional auxiliary equipment; actual equipment scope determines attribution.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Modular auxiliary-inclusive and turnkey alternatives support differentiated package scope, without proving a global adoption percentage.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Modular auxiliary-inclusive and turnkey alternatives support differentiated package scope, without proving a global adoption percentage.
5. Commission Processing - NIPPON COKE & ENGINEERING CO., LTD.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Own commercial processing portfolio identifies glass, ceramics and inorganic materials; establishes material mapping, not equipment revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own commercial processing portfolio identifies glass, ceramics and inorganic materials; establishes material mapping, not equipment revenue.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Organic pigments are named commercial processing materials.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Organic pigments are named commercial processing materials.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Metal powders are named commercial processing materials.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Metal powders are named commercial processing materials.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Carbon is identified in the operator's commercial grinding portfolio.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Carbon is identified in the operator's commercial grinding portfolio.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Thermosetting resin supports a polymer-material category premise.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Thermosetting resin supports a polymer-material category premise.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Ink-related grinding establishes a commercial reference but does not resolve whole-formulation versus constituent duty.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Ink-related grinding establishes a commercial reference but does not resolve whole-formulation versus constituent duty.

6. Micronization / Grinding - A. Ebbecke Verfahrenstechnik AG
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Commercial contract-grinding coverage includes natural materials and food ingredients; processing fees are excluded from equipment value.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Commercial contract-grinding coverage includes natural materials and food ingredients; processing fees are excluded from equipment value.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Plastic granulates and resins establish material coverage, not downstream customers' equipment ownership.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Plastic granulates and resins establish material coverage, not downstream customers' equipment ownership.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operator-side food-processing reference supports establishment attribution rather than automatically assigning equipment to its customers.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operator-side food-processing reference supports establishment attribution rather than automatically assigning equipment to its customers.
7. Manufacturing Capabilities - Asbury Advanced Materials
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Own manufacturing disclosure identifies carbon-material grinding and micronization; supports the material-duty premise only.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own manufacturing disclosure identifies carbon-material grinding and micronization; supports the material-duty premise only.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Custom formulations and dispersions are commercial outputs, but joint whole-formulation milling remains unmeasured.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Custom formulations and dispersions are commercial outputs, but joint whole-formulation milling remains unmeasured.
8. Pyrum Innovations AG - Interim Group Report January 1 to June 30, 2025
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The purchaser's 2025 report records a grinding-plant installation associated with recovered carbon black; no downstream material revenue is counted.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The purchaser's 2025 report records a grinding-plant installation associated with recovered carbon black; no downstream material revenue is counted.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The report establishes an actual recovery-business equipment context, while the exact attributable mill expenditure remains undisclosed.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The report establishes an actual recovery-business equipment context, while the exact attributable mill expenditure remains undisclosed.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The disclosed commercial-site grinding installation supports Industrial Production classification.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The disclosed commercial-site grinding installation supports Industrial Production classification.

9. NRRI Advances Efficient Grinding Technology on the Iron Range
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The institution distinguishes a planned bench-scale purchase from its loaned pilot equipment; not a completed-sale census.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The institution distinguishes a planned bench-scale purchase from its loaned pilot equipment; not a completed-sale census.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The May xx.xx 2024 account identifies a loaned pilot stirred mill; unpaid placement is not counted as equipment-sale revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The May xx.xx 2024 account identifies a loaned pilot stirred mill; unpaid placement is not counted as equipment-sale revenue.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operating research institute is distinct from its mining clients, supporting buyer/material separation.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operating research institute is distinct from its mining clients, supporting buyer/material separation.
10. Planetary Ball Mill PM 100 - RETSCH
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The PM xx.xx is marketed as a benchtop instrument, supporting the small-laboratory pool classification without establishing sales weight.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The PM xx.xx is marketed as a benchtop instrument, supporting the small-laboratory pool classification without establishing sales weight.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The individual-instrument offering supports a narrower equipment-supply alternative; package incidence remains modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The individual-instrument offering supports a narrower equipment-supply alternative; package incidence remains modeled.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: PM xx.xx is a marketed benchtop planetary platform, supporting laboratory-category mapping rather than shipment or price weights. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: PM xx.xx is a marketed benchtop planetary platform, supporting laboratory-category mapping rather than shipment or price weights. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The product page advertises both dry and wet capability. Actual dual-state purchase inclusion remains an explicit model assumption. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The product page advertises both dry and wet capability. Actual dual-state purchase inclusion remains an explicit model assumption. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))

11. Jet Mill - Contract History CW2408170, CanadaBuys
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: A May xx.xx 2026 laboratory jet-mill award totals CAD xx.xx; a dated procurement check, not a 2025 shipment or global average price.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: A May xx.xx 2026 laboratory jet-mill award totals CAD xx.xx; a dated procurement check, not a 2025 shipment or global average price.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The record distinguishes Natural Resources Canada as buying organization from PSPC as contracting organization, supporting establishment attribution.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The record distinguishes Natural Resources Canada as buying organization from PSPC as contracting organization, supporting establishment attribution.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The jet-mill award totals CAD xx.xx and is dated May xx.xx 2026. It is a nearby-period laboratory purchasing comparator, not a 2025 recognized sale, and supplies neither a gas-jet subtype nor a definitive channel role. ([canadabuys.canada.ca](https://canadabuys.canada.ca/en/tender-opportunities/contract-history/cw2408170-xx.xx))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The jet-mill award totals CAD xx.xx and is dated May xx.xx 2026. It is a nearby-period laboratory purchasing comparator, not a 2025 recognized sale, and supplies neither a gas-jet subtype nor a definitive channel role. ([canadabuys.canada.ca](https://canadabuys.canada.ca/en/tender-opportunities/contract-history/cw2408170-xx.xx))
12. MFC Production Equipment - FiberLean
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The manufacturer's commercial offering targets pulp, paper and related establishments; it is not a measured industry sales share.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The manufacturer's commercial offering targets pulp, paper and related establishments; it is not a measured industry sales share.
13. Pulverizing Equipment - Coperion
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The broader portfolio names power-generation applications and separately lists ultrafine equipment; this limits, rather than verifies, the assumed qualifying power-buyer allocation.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The broader portfolio names power-generation applications and separately lists ultrafine equipment; this limits, rather than verifies, the assumed qualifying power-buyer allocation.
14. LG Energy Solution Releases 2025 Financial Results - January 29, 2026
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own 2025 revenue decline and dated 2026 capital-expenditure reduction target constrain battery-related equipment-adoption assumptions.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Existing-asset reuse strategy qualifies a direct downstream-demand-to-new-carbon-material-mill investment inference.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Buyer investment restraint constrains the relative application multiplier; upstream chemical attribution remains separately assumed.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own battery-manufacturer financial and investment plans provide a counter-test, not an ultrafine equipment purchasing total.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The January 2026 emphasis on reduced new investment qualifies automatic growth in broader equipment-package adoption.

15. UNSD Classification Detail - ISIC Rev.4, Class 3830: Materials Recovery
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The official classification distinguishes secondary-material recovery from manufacture of new final products; it supplies no equipment sales weight.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The official classification distinguishes secondary-material recovery from manufacture of new final products; it supplies no equipment sales weight.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Recovered-input use alone does not classify the equipment operator as a recovery establishment rather than a product manufacturer.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Recovered-input use alone does not classify the equipment operator as a recovery establishment rather than a product manufacturer.
16. Ultrafin Mill: Super Masscolloider, Masuko MKCA6-5J CE - University of Ljubljana
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The university inventories a laboratory ultrafine mill within wood science; the institutional operator is not a wood-products manufacturer.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The university inventories a laboratory ultrafine mill within wood science; the institutional operator is not a wood-products manufacturer.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The institutional inventory expressly identifies laboratory equipment, supporting deployment classification without establishing a purchase-year value.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The institutional inventory expressly identifies laboratory equipment, supporting deployment classification without establishing a purchase-year value.
17. Contract Manufacturing of Pharmaceuticals - YUKI GOSEI KOGYO CO., LTD.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operator distinguishes production jet mills from smaller equipment, supporting industrial deployment at a pharmaceutical contract manufacturer.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operator distinguishes production jet mills from smaller equipment, supporting industrial deployment at a pharmaceutical contract manufacturer.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The actual pharmaceutical manufacturing operator is distinct from customers outsourcing production; processing-service receipts remain excluded.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The actual pharmaceutical manufacturing operator is distinct from customers outsourcing production; processing-service receipts remain excluded.

18. Record year for Metso stirred mills as mining industry opts for energy-efficient comminution technology

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Metso reports more than twenty Vertimill sales in 2025 and approximately xx.xx cumulative stirred-mill deliveries. Broader application coverage prevents treating these as ultrafine-only annual shipments; they constrain the modeled stirred/mining allocation and forecast premise.
([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Metso reports more than twenty Vertimill sales in 2025 and approximately xx.xx cumulative stirred-mill deliveries. Broader application coverage prevents treating these as ultrafine-only annual shipments; they constrain the modeled stirred/mining allocation and forecast premise.
([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The disclosed stirred-equipment activity supports material Media Mills participation, not the final modeled parent share.
([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The disclosed stirred-equipment activity supports material Media Mills participation, not the final modeled parent share.
([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))

19. Bühler strengthens its market position

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Bühler reports xx.xx% Grinding & Dispersing order growth in 2025 against a xx.xx% decline in broader Advanced Materials orders. This is a mixed commercial leading indicator, not observed market-share growth.
([buhlergroup.com](https://www.buhlergroup.com/global/en/media/media-releases/b%C3%BChler-strengthens-its-marketposition.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Bühler reports xx.xx% Grinding & Dispersing order growth in 2025 against a xx.xx% decline in broader Advanced Materials orders. This is a mixed commercial leading indicator, not observed market-share growth.
([buhlergroup.com](https://www.buhlergroup.com/global/en/media/media-releases/b%C3%BChler-strengthens-its-marketposition.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The disclosed battery-related and other application orders constrain differentiated Media Mills forecast assumptions without converting orders directly to annual equipment revenue.
([buhlergroup.com](https://www.buhlergroup.com/global/en/media/media-releases/b%C3%BChler-strengthens-its-marketposition.html))

20. Management Greetings | HOSOKAWAMICRON CORPORATION

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Hosokawa reports FY2025 net sales of JPY xx.xx, down xx.xx%, and orders down xx.xx%. The diversified-company result challenges uniform purchasing acceleration and constrains, rather than directly measures, technology-mix assumptions.
([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/ir/management_policy/management_greetings.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Hosokawa reports FY2025 net sales of JPY xx.xx, down xx.xx%, and orders down xx.xx%. The diversified-company result challenges uniform purchasing acceleration and constrains, rather than directly measures, technology-mix assumptions.
([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/ir/management_policy/management_greetings.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The same broader financial contraction is counterevidence to assuming uniform Media Mills growth across suppliers; no corporate revenue is assigned directly to the category.
([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/ir/management_policy/management_greetings.html))

21. Details of micromeritics | HOSOKAWAMICRON CORPORATION

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Hosokawa identifies its AS spiral offering, supporting subtype mapping rather than a sales weight. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Hosokawa identifies its AS spiral offering, supporting subtype mapping rather than a sales weight. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The AFG/TFG counterjet offerings support the retained Opposed-Jet commercial mapping. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The AFG/TFG counterjet offerings support the retained Opposed-Jet commercial mapping. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The manufacturer identifies Innovomizer as a mechanical ultrafine offering; ordinary impact equipment is not automatically included. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The manufacturer identifies Innovomizer as a mechanical ultrafine offering; ordinary impact equipment is not automatically included. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

22. Grinding Equipment Manufacturer Supplier Factory, Grinding System | Longly

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: LONGLY discloses current annual capacity above 2,000 equipment units and commercial wet-grinding offerings. Capacity is bridged through explicitly assumed timing, utilization and eligible-product factors; it is not reported 2025 stirred-mill shipments. ([longlymill.com](https://www.longlymill.com/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: LONGLY discloses current annual capacity above 2,000 equipment units and commercial wet-grinding offerings. Capacity is bridged through explicitly assumed timing, utilization and eligible-product factors; it is not reported 2025 stirred-mill shipments. ([longlymill.com](https://www.longlymill.com/))

23. Ultra-Fine Grinding - Hosokawa Micron Malaysia

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The inspected ultrafine portfolio identifies AWM-F table-roller equipment, supporting the qualifying Roller Mills boundary, not its assumed counts or prices. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The inspected ultrafine portfolio identifies AWM-F table-roller equipment, supporting the qualifying Roller Mills boundary, not its assumed counts or prices. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Super Orion is a marketed rotary ball-mill constituent of the combined rotary/planetary category. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Super Orion is a marketed rotary ball-mill constituent of the combined rotary/planetary category. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: MJT is explicitly listed as a target-type offering, supporting precedence of the named platform over overlapping generic jet terminology. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: MJT is explicitly listed as a target-type offering, supporting precedence of the named platform over overlapping generic jet terminology. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

24. Loop Jet Mill - Consistency. Compliance. Engineered.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The current named Loop Jet Mill listing establishes an offered commercial platform. It supports forecast category continuity, but does not disclose subtype revenue or prove 2025 sales. ([jetmillmfg.com](https://www.jetmillmfg.com/loop-jet-mill/))
25. SWECO Vibratory Grinding and Particle Size Reduction Equipment
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: SWECO markets Vibro-Energy grinding equipment with separate wet and wet/dry offerings. This supports commercial category and configuration mapping, not the modeled frequency of purchases. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: SWECO markets Vibro-Energy grinding equipment with separate wet and wet/dry offerings. This supports commercial category and configuration mapping, not the modeled frequency of purchases. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Named wet/dry models establish dual-state availability; they do not establish the exact supplied configuration or a market-wide value share. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Named wet/dry models establish dual-state availability; they do not establish the exact supplied configuration or a market-wide value share. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))
26. Fine-cutting mill with rotating classifying feature - the sensational new development!
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The September xx.xx 2014 own-product announcement establishes a pre-base-year SecoMy S cutting offering described for ultrafine commercial applications. It is category evidence, not annual equipment revenue. ([grinding.netzsch.com](https://grinding.netzsch.com/en/news/2014/fine-cutting-mill-with-rotating-classifying-feature-the-sensational-new-development))
27. NETZSCH SecoMy S - Precision Cutting Redefined!
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The August 2026 SecoMy S brochure confirms continuing commercial ultrafine-cutting positioning and system-supply availability. It supports category persistence, not the assumed forecast spending share. ([grinding.netzsch.com](https://grinding.netzsch.com/_Resources/Persistent/xx.xx/e/xx.xx/b/8e4b5adcfc16fcc2d83974f8080d614cce1a2c01/NETZSCH_Fine_Cutting_Mill_SecoMy_S_e.pdf))
28. Wet Milling and Dispersing Device - Star Burst - Sugino Corp.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: SUGINO's Star Burst portfolio identifies wet-jet equipment across research and production purchasing contexts. Only milling-attributable supply is included; adjacent droplet-only or dispersion activity is not automatically counted. ([suginocorp.com](https://www.suginocorp.com/star-burst/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: SUGINO's Star Burst portfolio identifies wet-jet equipment across research and production purchasing contexts. Only milling-attributable supply is included; adjacent droplet-only or dispersion activity is not automatically counted. ([suginocorp.com](https://www.suginocorp.com/star-burst/))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The wet-jet offering supports wet-state classification within the joint value model, not the total Wet Grinding share. ([suginocorp.com](https://www.suginocorp.com/star-burst/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The wet-jet offering supports wet-state classification within the joint value model, not the total Wet Grinding share. ([suginocorp.com](https://www.suginocorp.com/star-burst/))

29. IBU-tec | Mills - Milling Technology for Dry and Wet Grinding
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operator table separately lists two dry opposed-jet units. This is an installed-inventory observation, not a shipment or revenue ratio. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operator table separately lists two dry opposed-jet units. This is an installed-inventory observation, not a shipment or revenue ratio. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Three wet agitator-bead units are separately inventoried, supporting state-specific commercial classification without using their count as a market weight. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Three wet agitator-bead units are separately inventoried, supporting state-specific commercial classification without using their count as a market weight. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
30. Comminution - NTNU
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: NTNU separately records wet/dry capability for stirred and planetary equipment; the inventory is not a representative value-share dataset. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: NTNU separately records wet/dry capability for stirred and planetary equipment; the inventory is not a representative value-share dataset. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The planetary equipment is recorded as batch, supporting a laboratory batch context without assuming all laboratories are batch-only. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The planetary equipment is recorded as batch, supporting a laboratory batch context without assuming all laboratories are batch-only. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The laboratory jet rig is recorded as continuous, independently challenging equivalence between continuous mode and industrial scale. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The laboratory jet rig is recorded as continuous, independently challenging equivalence between continuous mode and industrial scale. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
31. Dry Batch Or Continuous Laboratory Mills - Union Process
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Union Process identifies SD-xx.xx as one laboratory offering for both batch and continuous service. Configuration-specific purchase inclusion and revenue are undisclosed. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Union Process identifies SD-xx.xx as one laboratory offering for both batch and continuous service. Configuration-specific purchase inclusion and revenue are undisclosed. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The same named offering advertises wet/dry capability, supporting a dual-state category premise rather than an observed adoption percentage. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The same named offering advertises wet/dry capability, supporting a dual-state category premise rather than an observed adoption percentage. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))

32. Retsch Contact & Services - Contact Partners Worldwide

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: RETSCH describes a network including daughter companies. Manufacturer affiliation, rather than contact location, informs direct-route attribution. ([retsch.com](https://www.retsch.com/contact-services/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: RETSCH describes a network including daughter companies. Manufacturer affiliation, rather than contact location, informs direct-route attribution. ([retsch.com](https://www.retsch.com/contact-services/))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The network also includes trained distributors, establishing a resale-access premise but not distributor ownership roles or annual sales weights. ([retsch.com](https://www.retsch.com/contact-services/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The network also includes trained distributors, establishing a resale-access premise but not distributor ownership roles or annual sales weights. ([retsch.com](https://www.retsch.com/contact-services/))

33. HOSOKAWA ALPINE Aktiengesellschaft - Conditions of Sale 371_00 EN

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Hosokawa requires company confirmation of representatives' transactions and makes contractual scope authoritative. The terms support agency-role attribution, not the assumed agent percentage. ([hosokawa-alpine.com](https://www.hosokawa-alpine.com/fileadmin/allgemein/Legal/AGB/AGB_Verkaufsbedingungen_en_371_00.pdf))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Hosokawa requires company confirmation of representatives' transactions and makes contractual scope authoritative. The terms support agency-role attribution, not the assumed agent percentage. ([hosokawa-alpine.com](https://www.hosokawa-alpine.com/fileadmin/allgemein/Legal/AGB/AGB_Verkaufsbedingungen_en_371_00.pdf))

34. UNSD - ISIC Rev.5, Class 4610: Wholesale on a Fee or Contract Basis

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: ISIC Rev.xx.xx class xx.xx defines fee/commission intermediation without ownership, supporting a non-title-taking agency numerator distinct from goods supplied on own account. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: ISIC Rev.xx.xx class xx.xx defines fee/commission intermediation without ownership, supporting a non-title-taking agency numerator distinct from goods supplied on own account. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Own-account wholesale is excluded from the agency class, supporting the reseller/agent partition without supplying ultrafine-mill channel shares. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own-account wholesale is excluded from the agency class, supporting the reseller/agent partition without supplying ultrafine-mill channel shares. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))

35. ITDI-PB-2024-057 - Supply, Delivery, Installation and Commissioning of Ultra-fine Friction Grinder

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The 2024 friction-grinder procurement had a PHP xx.xx budget and failed with no bidder. It establishes a configured-package spending ceiling and commercial category, not a sale or a shipment count. ([notices.philgeps.gov.ph](https://notices.philgeps.gov.ph/GEPSNONPILOT/Tender/PrintableBidNoticeAbstractUI.aspx?refid=xx.xx))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The 2024 friction-grinder procurement had a PHP xx.xx budget and failed with no bidder. It establishes a configured-package spending ceiling and commercial category, not a sale or a shipment count. ([notices.philgeps.gov.ph](https://notices.philgeps.gov.ph/GEPSNONPILOT/Tender/PrintableBidNoticeAbstractUI.aspx?refid=xx.xx))

36. Bangko Sentral ng Pilipinas - Balance of Payments Report, Q4 2024
· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The central bank reports a 2024 average of PHP xx.xx per USD. Dividing the failed PHP xx.xx procurement budget by this rate gives an approximately USD xx.xx comparison ceiling, not realized equipment revenue. ([bsp.gov.ph](https://www.bsp.gov.ph/Media_And_Research/Balance%20of%20Payments%20Report/2024/BOP_4qtr2024.pdf))
· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The central bank reports a 2024 average of PHP xx.xx per USD. Dividing the failed PHP xx.xx procurement budget by this rate gives an approximately USD xx.xx comparison ceiling, not realized equipment revenue. ([bsp.gov.ph](https://www.bsp.gov.ph/Media_And_Research/Balance%20of%20Payments%20Report/2024/BOP_4qtr2024.pdf))

17.15. Spain

Table 472. Spain Ultra Fine Grinding Mill Market Size, 2017-2040 (USD Million)

Country	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Spain	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 473. Spain Ultra Fine Grinding Mill Market Size, by Supply Scope, 2017-2040 (USD Million)

Supply Scope	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Integrated Milling Packages	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Standalone Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 474. Spain Ultra Fine Grinding Mill Market Size, by Mill Technology, 2017-2040 (USD Million)

Mill Technology	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Cutting Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Disc and Colloid Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Gas-Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mechanical Impact Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Media Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Roller Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wet-Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 475. Spain Ultra Fine Grinding Mill Market Size, by Media Mills, 2017-2040 (USD Million)

Media Mills	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Rotary and Planetary Ball Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Stirred Media Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Vibratory Media Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 476. Spain Ultra Fine Grinding Mill Market Size, by Gas-Jet Mills, 2017-2040 (USD Million)

Gas-Jet Mills	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Loop Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Opposed-Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Spiral Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Target Jet Mills	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 477. Spain Ultra Fine Grinding Mill Market Size, by Processed Material, 2017-2040 (USD Million)

Processed Material	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Biomass and Natural Ingredients	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Carbonaceous Materials	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Formulations and Composites	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Industrial Minerals	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Inorganic Chemicals, Ceramics, and Glass	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Metal Ores and Concentrates	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Metals and Alloys	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Organic Chemicals	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Polymers and Elastomers	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 478. Spain Ultra Fine Grinding Mill Market Size, by Buyer Industry, 2017-2040 (USD Million)

Buyer Industry	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Chemical and Fuel Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Electrical and Electronic Product Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Food, Beverage, and Feed Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Glass, Ceramics, and Construction Materials Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Materials Recovery and Recycling	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Metals and Fabricated Metal Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Mining and Mineral Processing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Pharmaceutical Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Power and Heat Generation	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Research, Education, and Testing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Rubber and Plastics Product Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wood, Pulp, and Paper Manufacturing	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 479. Spain Ultra Fine Grinding Mill Market Size, by Deployment Scale, 2017-2040 (USD Million)

Deployment Scale	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Industrial Production	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Laboratory	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Pilot	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 480. Spain Ultra Fine Grinding Mill Market Size, by Sales Channel, 2017-2040 (USD Million)

Sales Channel	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Agent-Mediated Sales	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Independent Reseller Sales	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Manufacturer-Direct Sales	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 481. Spain Ultra Fine Grinding Mill Market Size, by Processing State, 2017-2040 (USD Million)

Processing State	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Dry Grinding	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wet and Dry Grinding	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Wet Grinding	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Table 482. Spain Ultra Fine Grinding Mill Market Size, by Operating Mode, 2017-2040 (USD Million)

Operating Mode	2017	2024	2025	2026	2027	2032	2040	CAGR (%)
Batch	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Batch and Continuous	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Continuous	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx	xx.xx
Total	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**	**xx.xx**

Sources & Evidence

1. Hosokawa Micron - FY2025 Financial Results Presentation, November 25, 2025 (Japanese)
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; material attribution modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; material attribution modeled.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; establishment attribution modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Application-booking calibration input; establishment attribution modeled.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; buyer attribution assumed.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; buyer attribution assumed.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; qualifying power attribution unverified.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; qualifying power attribution unverified.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; institutional attribution assumed.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Miscellaneous-application envelope; institutional attribution assumed.

2. Metso Receives Order for Grinding Mills to a Copper Project in Africa
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Approximately EUR xx.xx 2024 HIGmill order includes auxiliaries and services; a package-scale anchor, not recognized annual revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Approximately EUR xx.xx 2024 HIGmill order includes auxiliaries and services; a package-scale anchor, not recognized annual revenue.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The copper-project award establishes an ore/concentrate commercial purchasing context.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The copper-project award establishes an ore/concentrate commercial purchasing context.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The award concerns an African mining project; it does not disclose the global mining-buyer share.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The award concerns an African mining project; it does not disclose the global mining-buyer share.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Large industrial equipment procurement supports the production-scale category premise.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Large industrial equipment procurement supports the production-scale category premise.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The August xx.xx 2024 announcement records an approximately EUR xx.xx HIGmill order including auxiliaries and services. It anchors package-level commercial materiality, not a mill unit price or 2025 recognized revenue. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The August xx.xx 2024 announcement records an approximately EUR xx.xx HIGmill order including auxiliaries and services. It anchors package-level commercial materiality, not a mill unit price or 2025 recognized revenue. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The stirred-package order supports the Media Mills value-weight model and continuing commercial-demand premise, with order-to-revenue timing unresolved. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The stirred-package order supports the Media Mills value-weight model and continuing commercial-demand premise, with order-to-revenue timing unresolved. ([metso.com](https://www.metso.com/corporate/media/news/2024/xx.xx/metso-receives-order-for-grinding-mills-to-a-copper-project-in-africa/))
3. HIGmill Plant - Metso
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Standalone marketing terminology does not establish the study's Standalone Mills equipment scope.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Standalone marketing terminology does not establish the study's Standalone Mills equipment scope.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: HIGmill Plant includes pre-engineered auxiliary modules, supporting classification as an equipment package.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: HIGmill Plant includes pre-engineered auxiliary modules, supporting classification as an equipment package.

4. IsaMill - About, Technology Partnership and Engineering
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Delivery alternatives permit mill-only supply or additional auxiliary equipment; actual equipment scope determines attribution.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Delivery alternatives permit mill-only supply or additional auxiliary equipment; actual equipment scope determines attribution.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Modular auxiliary-inclusive and turnkey alternatives support differentiated package scope, without proving a global adoption percentage.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Modular auxiliary-inclusive and turnkey alternatives support differentiated package scope, without proving a global adoption percentage.
5. Commission Processing - NIPPON COKE & ENGINEERING CO., LTD.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Own commercial processing portfolio identifies glass, ceramics and inorganic materials; establishes material mapping, not equipment revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own commercial processing portfolio identifies glass, ceramics and inorganic materials; establishes material mapping, not equipment revenue.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Organic pigments are named commercial processing materials.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Organic pigments are named commercial processing materials.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Metal powders are named commercial processing materials.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Metal powders are named commercial processing materials.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Carbon is identified in the operator's commercial grinding portfolio.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Carbon is identified in the operator's commercial grinding portfolio.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Thermosetting resin supports a polymer-material category premise.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Thermosetting resin supports a polymer-material category premise.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Ink-related grinding establishes a commercial reference but does not resolve whole-formulation versus constituent duty.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Ink-related grinding establishes a commercial reference but does not resolve whole-formulation versus constituent duty.

6. Micronization / Grinding - A. Ebbecke Verfahrenstechnik AG
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Commercial contract-grinding coverage includes natural materials and food ingredients; processing fees are excluded from equipment value.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Commercial contract-grinding coverage includes natural materials and food ingredients; processing fees are excluded from equipment value.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Plastic granulates and resins establish material coverage, not downstream customers' equipment ownership.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Plastic granulates and resins establish material coverage, not downstream customers' equipment ownership.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operator-side food-processing reference supports establishment attribution rather than automatically assigning equipment to its customers.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operator-side food-processing reference supports establishment attribution rather than automatically assigning equipment to its customers.
7. Manufacturing Capabilities - Asbury Advanced Materials
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Own manufacturing disclosure identifies carbon-material grinding and micronization; supports the material-duty premise only.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own manufacturing disclosure identifies carbon-material grinding and micronization; supports the material-duty premise only.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Custom formulations and dispersions are commercial outputs, but joint whole-formulation milling remains unmeasured.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Custom formulations and dispersions are commercial outputs, but joint whole-formulation milling remains unmeasured.
8. Pyrum Innovations AG - Interim Group Report January 1 to June 30, 2025
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The purchaser's 2025 report records a grinding-plant installation associated with recovered carbon black; no downstream material revenue is counted.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The purchaser's 2025 report records a grinding-plant installation associated with recovered carbon black; no downstream material revenue is counted.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The report establishes an actual recovery-business equipment context, while the exact attributable mill expenditure remains undisclosed.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The report establishes an actual recovery-business equipment context, while the exact attributable mill expenditure remains undisclosed.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The disclosed commercial-site grinding installation supports Industrial Production classification.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The disclosed commercial-site grinding installation supports Industrial Production classification.

9. NRRI Advances Efficient Grinding Technology on the Iron Range
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The institution distinguishes a planned bench-scale purchase from its loaned pilot equipment; not a completed-sale census.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The institution distinguishes a planned bench-scale purchase from its loaned pilot equipment; not a completed-sale census.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The May xx.xx 2024 account identifies a loaned pilot stirred mill; unpaid placement is not counted as equipment-sale revenue.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The May xx.xx 2024 account identifies a loaned pilot stirred mill; unpaid placement is not counted as equipment-sale revenue.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operating research institute is distinct from its mining clients, supporting buyer/material separation.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operating research institute is distinct from its mining clients, supporting buyer/material separation.
10. Planetary Ball Mill PM 100 - RETSCH
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The PM xx.xx is marketed as a benchtop instrument, supporting the small-laboratory pool classification without establishing sales weight.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The PM xx.xx is marketed as a benchtop instrument, supporting the small-laboratory pool classification without establishing sales weight.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The individual-instrument offering supports a narrower equipment-supply alternative; package incidence remains modeled.
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The individual-instrument offering supports a narrower equipment-supply alternative; package incidence remains modeled.
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: PM xx.xx is a marketed benchtop planetary platform, supporting laboratory-category mapping rather than shipment or price weights. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: PM xx.xx is a marketed benchtop planetary platform, supporting laboratory-category mapping rather than shipment or price weights. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))
   - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The product page advertises both dry and wet capability. Actual dual-state purchase inclusion remains an explicit model assumption. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))
   - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The product page advertises both dry and wet capability. Actual dual-state purchase inclusion remains an explicit model assumption. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))

11. Jet Mill - Contract History CW2408170, CanadaBuys
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: A May xx.xx 2026 laboratory jet-mill award totals CAD xx.xx; a dated procurement check, not a 2025 shipment or global average price.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: A May xx.xx 2026 laboratory jet-mill award totals CAD xx.xx; a dated procurement check, not a 2025 shipment or global average price.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The record distinguishes Natural Resources Canada as buying organization from PSPC as contracting organization, supporting establishment attribution.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The record distinguishes Natural Resources Canada as buying organization from PSPC as contracting organization, supporting establishment attribution.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The jet-mill award totals CAD xx.xx and is dated May xx.xx 2026. It is a nearby-period laboratory purchasing comparator, not a 2025 recognized sale, and supplies neither a gas-jet subtype nor a definitive channel role. ([canadabuys.canada.ca](https://canadabuys.canada.ca/en/tender-opportunities/contract-history/cw2408170-xx.xx))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The jet-mill award totals CAD xx.xx and is dated May xx.xx 2026. It is a nearby-period laboratory purchasing comparator, not a 2025 recognized sale, and supplies neither a gas-jet subtype nor a definitive channel role. ([canadabuys.canada.ca](https://canadabuys.canada.ca/en/tender-opportunities/contract-history/cw2408170-xx.xx))
12. MFC Production Equipment - FiberLean
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The manufacturer's commercial offering targets pulp, paper and related establishments; it is not a measured industry sales share.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The manufacturer's commercial offering targets pulp, paper and related establishments; it is not a measured industry sales share.
13. Pulverizing Equipment - Coperion
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The broader portfolio names power-generation applications and separately lists ultrafine equipment; this limits, rather than verifies, the assumed qualifying power-buyer allocation.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The broader portfolio names power-generation applications and separately lists ultrafine equipment; this limits, rather than verifies, the assumed qualifying power-buyer allocation.
14. LG Energy Solution Releases 2025 Financial Results - January 29, 2026
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own 2025 revenue decline and dated 2026 capital-expenditure reduction target constrain battery-related equipment-adoption assumptions.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Existing-asset reuse strategy qualifies a direct downstream-demand-to-new-carbon-material-mill investment inference.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Buyer investment restraint constrains the relative application multiplier; upstream chemical attribution remains separately assumed.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own battery-manufacturer financial and investment plans provide a counter-test, not an ultrafine equipment purchasing total.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The January 2026 emphasis on reduced new investment qualifies automatic growth in broader equipment-package adoption.

15. UNSD Classification Detail - ISIC Rev.4, Class 3830: Materials Recovery
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The official classification distinguishes secondary-material recovery from manufacture of new final products; it supplies no equipment sales weight.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The official classification distinguishes secondary-material recovery from manufacture of new final products; it supplies no equipment sales weight.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Recovered-input use alone does not classify the equipment operator as a recovery establishment rather than a product manufacturer.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Recovered-input use alone does not classify the equipment operator as a recovery establishment rather than a product manufacturer.
16. Ultrafin Mill: Super Masscolloider, Masuko MKCA6-5J CE - University of Ljubljana
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The university inventories a laboratory ultrafine mill within wood science; the institutional operator is not a wood-products manufacturer.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The university inventories a laboratory ultrafine mill within wood science; the institutional operator is not a wood-products manufacturer.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The institutional inventory expressly identifies laboratory equipment, supporting deployment classification without establishing a purchase-year value.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The institutional inventory expressly identifies laboratory equipment, supporting deployment classification without establishing a purchase-year value.
17. Contract Manufacturing of Pharmaceuticals - YUKI GOSEI KOGYO CO., LTD.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operator distinguishes production jet mills from smaller equipment, supporting industrial deployment at a pharmaceutical contract manufacturer.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operator distinguishes production jet mills from smaller equipment, supporting industrial deployment at a pharmaceutical contract manufacturer.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The actual pharmaceutical manufacturing operator is distinct from customers outsourcing production; processing-service receipts remain excluded.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The actual pharmaceutical manufacturing operator is distinct from customers outsourcing production; processing-service receipts remain excluded.

18. Record year for Metso stirred mills as mining industry opts for energy-efficient comminution technology

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Metso reports more than twenty Vertimill sales in 2025 and approximately xx.xx cumulative stirred-mill deliveries. Broader application coverage prevents treating these as ultrafine-only annual shipments; they constrain the modeled stirred/mining allocation and forecast premise.
([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Metso reports more than twenty Vertimill sales in 2025 and approximately xx.xx cumulative stirred-mill deliveries. Broader application coverage prevents treating these as ultrafine-only annual shipments; they constrain the modeled stirred/mining allocation and forecast premise.
([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The disclosed stirred-equipment activity supports material Media Mills participation, not the final modeled parent share.
([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The disclosed stirred-equipment activity supports material Media Mills participation, not the final modeled parent share.
([metso.com](https://www.metso.com/corporate/media/news/2026/xx.xx/record-year-for-metso-stirred-mills-as-mining-industry-opts-for-energy-efficient-comminution-technology/))

19. Bühler strengthens its market position

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Bühler reports xx.xx% Grinding & Dispersing order growth in 2025 against a xx.xx% decline in broader Advanced Materials orders. This is a mixed commercial leading indicator, not observed market-share growth.
([buhlergroup.com](https://www.buhlergroup.com/global/en/media/media-releases/b%C3%BChler-strengthens-its-marketposition.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Bühler reports xx.xx% Grinding & Dispersing order growth in 2025 against a xx.xx% decline in broader Advanced Materials orders. This is a mixed commercial leading indicator, not observed market-share growth.
([buhlergroup.com](https://www.buhlergroup.com/global/en/media/media-releases/b%C3%BChler-strengthens-its-marketposition.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The disclosed battery-related and other application orders constrain differentiated Media Mills forecast assumptions without converting orders directly to annual equipment revenue.
([buhlergroup.com](https://www.buhlergroup.com/global/en/media/media-releases/b%C3%BChler-strengthens-its-marketposition.html))

20. Management Greetings | HOSOKAWAMICRON CORPORATION

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Hosokawa reports FY2025 net sales of JPY xx.xx, down xx.xx%, and orders down xx.xx%. The diversified-company result challenges uniform purchasing acceleration and constrains, rather than directly measures, technology-mix assumptions.
([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/ir/management_policy/management_greetings.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Hosokawa reports FY2025 net sales of JPY xx.xx, down xx.xx%, and orders down xx.xx%. The diversified-company result challenges uniform purchasing acceleration and constrains, rather than directly measures, technology-mix assumptions.
([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/ir/management_policy/management_greetings.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The same broader financial contraction is counterevidence to assuming uniform Media Mills growth across suppliers; no corporate revenue is assigned directly to the category.
([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/ir/management_policy/management_greetings.html))

21. Details of micromeritics | HOSOKAWAMICRON CORPORATION

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Hosokawa identifies its AS spiral offering, supporting subtype mapping rather than a sales weight. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Hosokawa identifies its AS spiral offering, supporting subtype mapping rather than a sales weight. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The AFG/TFG counterjet offerings support the retained Opposed-Jet commercial mapping. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The AFG/TFG counterjet offerings support the retained Opposed-Jet commercial mapping. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The manufacturer identifies Innovomizer as a mechanical ultrafine offering; ordinary impact equipment is not automatically included. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The manufacturer identifies Innovomizer as a mechanical ultrafine offering; ordinary impact equipment is not automatically included. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/tech/milling/micromeritics.html))

22. Grinding Equipment Manufacturer Supplier Factory, Grinding System | Longly

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: LONGLY discloses current annual capacity above 2,000 equipment units and commercial wet-grinding offerings. Capacity is bridged through explicitly assumed timing, utilization and eligible-product factors; it is not reported 2025 stirred-mill shipments. ([longlymill.com](https://www.longlymill.com/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: LONGLY discloses current annual capacity above 2,000 equipment units and commercial wet-grinding offerings. Capacity is bridged through explicitly assumed timing, utilization and eligible-product factors; it is not reported 2025 stirred-mill shipments. ([longlymill.com](https://www.longlymill.com/))

23. Ultra-Fine Grinding - Hosokawa Micron Malaysia

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The inspected ultrafine portfolio identifies AWM-F table-roller equipment, supporting the qualifying Roller Mills boundary, not its assumed counts or prices. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The inspected ultrafine portfolio identifies AWM-F table-roller equipment, supporting the qualifying Roller Mills boundary, not its assumed counts or prices. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: Super Orion is a marketed rotary ball-mill constituent of the combined rotary/planetary category. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Super Orion is a marketed rotary ball-mill constituent of the combined rotary/planetary category. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: MJT is explicitly listed as a target-type offering, supporting precedence of the named platform over overlapping generic jet terminology. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: MJT is explicitly listed as a target-type offering, supporting precedence of the named platform over overlapping generic jet terminology. ([hosokawa.com.my](https://hosokawa.com.my/ultra-fine-grinding/))

24. Loop Jet Mill - Consistency. Compliance. Engineered.
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The current named Loop Jet Mill listing establishes an offered commercial platform. It supports forecast category continuity, but does not disclose subtype revenue or prove 2025 sales. ([jetmillmfg.com](https://www.jetmillmfg.com/loop-jet-mill/))
25. SWECO Vibratory Grinding and Particle Size Reduction Equipment
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: SWECO markets Vibro-Energy grinding equipment with separate wet and wet/dry offerings. This supports commercial category and configuration mapping, not the modeled frequency of purchases. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: SWECO markets Vibro-Energy grinding equipment with separate wet and wet/dry offerings. This supports commercial category and configuration mapping, not the modeled frequency of purchases. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Named wet/dry models establish dual-state availability; they do not establish the exact supplied configuration or a market-wide value share. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Named wet/dry models establish dual-state availability; they do not establish the exact supplied configuration or a market-wide value share. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))
26. Fine-cutting mill with rotating classifying feature - the sensational new development!
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The September xx.xx 2014 own-product announcement establishes a pre-base-year SecoMy S cutting offering described for ultrafine commercial applications. It is category evidence, not annual equipment revenue. ([grinding.netzsch.com](https://grinding.netzsch.com/en/news/2014/fine-cutting-mill-with-rotating-classifying-feature-the-sensational-new-development))
27. NETZSCH SecoMy S - Precision Cutting Redefined!
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The August 2026 SecoMy S brochure confirms continuing commercial ultrafine-cutting positioning and system-supply availability. It supports category persistence, not the assumed forecast spending share. ([grinding.netzsch.com](https://grinding.netzsch.com/_Resources/Persistent/xx.xx/e/xx.xx/b/8e4b5adcfc16fcc2d83974f8080d614cce1a2c01/NETZSCH_Fine_Cutting_Mill_SecoMy_S_e.pdf))
28. Wet Milling and Dispersing Device - Star Burst - Sugino Corp.
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: SUGINO's Star Burst portfolio identifies wet-jet equipment across research and production purchasing contexts. Only milling-attributable supply is included; adjacent droplet-only or dispersion activity is not automatically counted. ([suginocorp.com](https://www.suginocorp.com/star-burst/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: SUGINO's Star Burst portfolio identifies wet-jet equipment across research and production purchasing contexts. Only milling-attributable supply is included; adjacent droplet-only or dispersion activity is not automatically counted. ([suginocorp.com](https://www.suginocorp.com/star-burst/))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The wet-jet offering supports wet-state classification within the joint value model, not the total Wet Grinding share. ([suginocorp.com](https://www.suginocorp.com/star-burst/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The wet-jet offering supports wet-state classification within the joint value model, not the total Wet Grinding share. ([suginocorp.com](https://www.suginocorp.com/star-burst/))

29. IBU-tec | Mills - Milling Technology for Dry and Wet Grinding
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The operator table separately lists two dry opposed-jet units. This is an installed-inventory observation, not a shipment or revenue ratio. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The operator table separately lists two dry opposed-jet units. This is an installed-inventory observation, not a shipment or revenue ratio. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Three wet agitator-bead units are separately inventoried, supporting state-specific commercial classification without using their count as a market weight. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Three wet agitator-bead units are separately inventoried, supporting state-specific commercial classification without using their count as a market weight. ([ibu-tec.com](https://www.ibu-tec.com/facilities/mills/))
30. Comminution - NTNU
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: NTNU separately records wet/dry capability for stirred and planetary equipment; the inventory is not a representative value-share dataset. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: NTNU separately records wet/dry capability for stirred and planetary equipment; the inventory is not a representative value-share dataset. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The planetary equipment is recorded as batch, supporting a laboratory batch context without assuming all laboratories are batch-only. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The planetary equipment is recorded as batch, supporting a laboratory batch context without assuming all laboratories are batch-only. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The laboratory jet rig is recorded as continuous, independently challenging equivalence between continuous mode and industrial scale. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The laboratory jet rig is recorded as continuous, independently challenging equivalence between continuous mode and industrial scale. ([ntnu.edu](https://www.ntnu.edu/igv/comminution))
31. Dry Batch Or Continuous Laboratory Mills - Union Process
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Union Process identifies SD-xx.xx as one laboratory offering for both batch and continuous service. Configuration-specific purchase inclusion and revenue are undisclosed. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Union Process identifies SD-xx.xx as one laboratory offering for both batch and continuous service. Configuration-specific purchase inclusion and revenue are undisclosed. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The same named offering advertises wet/dry capability, supporting a dual-state category premise rather than an observed adoption percentage. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The same named offering advertises wet/dry capability, supporting a dual-state category premise rather than an observed adoption percentage. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))

32. Retsch Contact & Services - Contact Partners Worldwide
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: RETSCH describes a network including daughter companies. Manufacturer affiliation, rather than contact location, informs direct-route attribution. ([retsch.com](https://www.retsch.com/contact-services/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: RETSCH describes a network including daughter companies. Manufacturer affiliation, rather than contact location, informs direct-route attribution. ([retsch.com](https://www.retsch.com/contact-services/))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The network also includes trained distributors, establishing a resale-access premise but not distributor ownership roles or annual sales weights. ([retsch.com](https://www.retsch.com/contact-services/))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The network also includes trained distributors, establishing a resale-access premise but not distributor ownership roles or annual sales weights. ([retsch.com](https://www.retsch.com/contact-services/))
33. HOSOKAWA ALPINE Aktiengesellschaft - Conditions of Sale 371_00 EN
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Hosokawa requires company confirmation of representatives' transactions and makes contractual scope authoritative. The terms support agency-role attribution, not the assumed agent percentage. ([hosokawa-alpine.com](https://www.hosokawa-alpine.com/fileadmin/allgemein/Legal/AGB/AGB_Verkaufsbedingungen_en_371_00.pdf))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Hosokawa requires company confirmation of representatives' transactions and makes contractual scope authoritative. The terms support agency-role attribution, not the assumed agent percentage. ([hosokawa-alpine.com](https://www.hosokawa-alpine.com/fileadmin/allgemein/Legal/AGB/AGB_Verkaufsbedingungen_en_371_00.pdf))
34. UNSD - ISIC Rev.5, Class 4610: Wholesale on a Fee or Contract Basis
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: ISIC Rev.xx.xx class xx.xx defines fee/commission intermediation without ownership, supporting a non-title-taking agency numerator distinct from goods supplied on own account. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: ISIC Rev.xx.xx class xx.xx defines fee/commission intermediation without ownership, supporting a non-title-taking agency numerator distinct from goods supplied on own account. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: Own-account wholesale is excluded from the agency class, supporting the reseller/agent partition without supplying ultrafine-mill channel shares. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: Own-account wholesale is excluded from the agency class, supporting the reseller/agent partition without supplying ultrafine-mill channel shares. ([unstats.un.org](https://unstats.un.org/unsd/classifications/Econ/Structure/Detail/EN/2095/xx.xx))
35. ITDI-PB-2024-057 - Supply, Delivery, Installation and Commissioning of Ultra-fine Friction Grinder
    - Evidence informing base-year allocation inputs; displayed values and growth are calculated: The 2024 friction-grinder procurement had a PHP xx.xx budget and failed with no bidder. It establishes a configured-package spending ceiling and commercial category, not a sale or a shipment count. ([notices.philgeps.gov.ph](https://notices.philgeps.gov.ph/GEPSNONPILOT/Tender/PrintableBidNoticeAbstractUI.aspx?refid=xx.xx))
    - Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The 2024 friction-grinder procurement had a PHP xx.xx budget and failed with no bidder. It establishes a configured-package spending ceiling and commercial category, not a sale or a shipment count. ([notices.philgeps.gov.ph](https://notices.philgeps.gov.ph/GEPSNONPILOT/Tender/PrintableBidNoticeAbstractUI.aspx?refid=xx.xx))

36. Bangko Sentral ng Pilipinas - Balance of Payments Report, Q4 2024

· Evidence informing base-year allocation inputs; displayed values and growth are calculated: The central bank reports a 2024 average of PHP xx.xx per USD. Dividing the failed PHP xx.xx procurement budget by this rate gives an approximately USD xx.xx comparison ceiling, not realized equipment revenue. ([bsp.gov.ph](https://www.bsp.gov.ph/Media_And_Research/Balance%20of%20Payments%20Report/2024/BOP_4qtr2024.pdf))

· Evidence informing forecast-year allocation inputs; displayed values and growth are calculated: The central bank reports a 2024 average of PHP xx.xx per USD. Dividing the failed PHP xx.xx procurement budget by this rate gives an approximately USD xx.xx comparison ceiling, not realized equipment revenue. ([bsp.gov.ph](https://www.bsp.gov.ph/Media_And_Research/Balance%20of%20Payments%20Report/2024/BOP_4qtr2024.pdf))

18. Competitive Landscape

18.1. Market Share Analysis, 2025

Competitive positioning in the Global Ultra Fine Grinding Mill market depends on access to a commercially qualified account, not on inclusion in a broad equipment roster. Mining purchasers can compare named propositions from Metso, FLSmidth & Co. ▪▪▪▪ ▪▪▪ ▪▪▪▪▪▪▪ ▪▪▪▪▪ ▪▪▪▪▪▪▪▪ ▪▪▪ ▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪▪▪ ▪▪ ▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪ ▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪ ▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪ ▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪ ▪▪ ▪▪▪▪▪▪▪▪ ▪▪▪▪ ▪▪▪ ▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪ ▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪ ▪▪▪ ▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪ ▪▪ ▪▪▪ ▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪

Suppliers can differentiate through the delivery obligations they expressly accept. HIGmill Plant's basic-to-EPC service choices and IsaMill's local-installation and turnkey models make this distinction explicit. ▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪ ▪▪▪ ▪ ▪▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪ ▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪ ▪▪▪▪ ▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪ ▪▪ ▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪ ▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪ ▪▪▪ ▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪ ▪▪ ▪▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪ ▪▪▪▪ ▪▪▪ ▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪ ▪ ▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪

▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪ ▪▪ ▪ ▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪ ▪▪▪▪▪▪ ▪▪▪▪▪ ▪▪▪ ▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪ ▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪ ▪▪▪ ▪▪▪▪▪▪▪ ▪▪▪ ▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪ ▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪ ▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪ ▪▪▪ ▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪ ▪ ▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪ An entrant seeking comparable accounts would need documented offering rights and the ability to accept the relevant local delivery and support obligations. Customer reach alone is not a substitute for those capabilities, and the published examples do not establish that equivalent partnerships are available to another entrant.

Multi-manufacturer channels address equipment discovery without automatically transferring OEM accountability. ▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪ ▪▪ ▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪ ▪▪▪▪▪ ▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪ ▪ ▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪ ▪▪▪▪ ▪ ▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪ ▪▪▪▪▪ ▪▪▪ ▪▪▪▪▪▪ ▪▪▪▪▪▪ ▪▪▪ ▪▪▪ ▪▪▪▪ ▪▪▪▪▪ ▪▪ ▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪ ▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪ ▪▪▪ ▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪ ▪▪▪▪ ▪▪▪▪▪ ▪▪▪ ▪▪▪▪▪▪▪▪ ▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪ Direct manufacturer inquiry remains an alternative where the buyer can manage communications and local obligations.

Support and acquisition choices create additional account-access distinctions. ▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪ ▪▪▪▪▪ ▪▪▪▪▪▪ ▪▪▪▪ ▪▪▪ ▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪ ▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪ ▪▪▪ ▪▪▪▪▪▪ ▪▪▪▪▪▪▪ ▪▪ ▪▪▪▪▪▪▪▪ ▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪ ▪▪▪ ▪▪▪▪▪▪ ▪▪ ▪▪▪▪▪▪▪ ▪▪▪▪▪ ▪▪▪▪▪▪▪ ▪▪▪ ▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪ ▪▪▪ ▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪ ▪▪ ▪▪ ▪▪▪▪▪▪▪▪ ▪▪▪▪▪ ▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪ They do not establish universal availability, lower total cost, or equivalent control.

Dry-powder competition also includes different package and application propositions. ▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪ ▪▪ ▪▪▪▪▪▪▪▪▪▪ ▪▪▪ ▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪

[illegible] Broad application coverage does not establish regulated acceptance or purchase-specific ultrafine equivalence.

[illegible] Buyers considering it should obtain an authenticated model-and-scope offer before comparison. Neither listing establishes an interchangeable advanced-materials package or destination-specific support.

Switching should be assessed as a change in accepted obligations, not assumed to be frictionless because another supplier has a similarly named mill. [illegible] Portfolio breadth and promotional performance claims do not establish the outcome.

Figure 30. Global Ultra Fine Grinding Mill Market Share, by Key Player, 2025

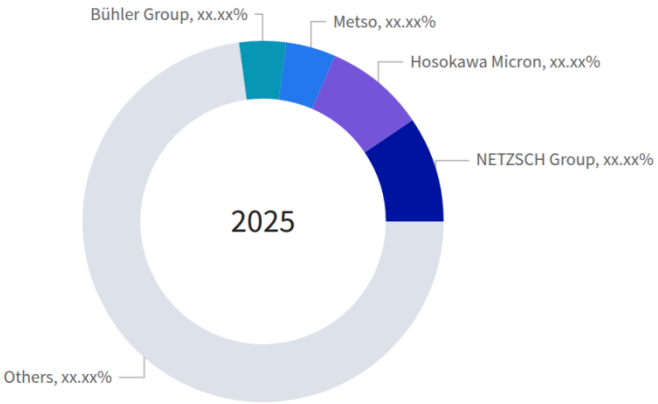


Table 483. Global Ultra Fine Grinding Mill Market Share, by Key Player, 2025

Key Player	Share (%)
AIMEX	xx.xx
ALPA Powder Technology	xx.xx

Table 483 - continued

Key Player	Share (%)
ANIVI	xx.xx
Ashizawa Finetech Ltd.	xx.xx
Aufbereitungstechnologie NOLL GmbH	xx.xx
Boyee (Shenzhen) Industrial Technology Co., Ltd.	xx.xx
Bühler Group	xx.xx
CB Mills	xx.xx
CIMMA Morandotti S.P.A.	xx.xx
Classifier Milling Systems	xx.xx
CLIRIK	xx.xx
CPM	xx.xx
Daesung Chemical Machinery Ind. Co.	xx.xx
Daswell Powder Technology Co., Ltd.	xx.xx
Dec Group	xx.xx
Disperset	xx.xx
DP Pulveriser Industries	xx.xx
Eirich Group	xx.xx
F.P.S. Food and Pharma Systems s.r.l.	xx.xx
FLSmidth & Co. A/S	xx.xx
FREUND-TURBO CORPORATION	xx.xx
Frewitt manufacturer of machines Ltd.	xx.xx
FRITSCH	xx.xx
Fujian Longyi Powder Equipment Manufacturing Co., Ltd.	xx.xx
General Kinematics Corporation	xx.xx
Glencore Technology	xx.xx
Guangdong INFOR Intelligent Equipment Co., Ltd.	xx.xx
Guilin Hongcheng Mining Equipment Manufacturing Co., Ltd.	xx.xx
Hiroshima Metal & Machinery Co., Ltd.	xx.xx
Hongji Group	xx.xx
Hosokawa Micron Corporation	xx.xx
Huyser Industries	xx.xx
INMIMEX	xx.xx
INOUE MFG., INC.	xx.xx

Table 483 - continued

Key Player	Share (%)
Jaygo Inc.	xx.xx
JEHMLICH GmbH	xx.xx
Jiangyin Powder Mill Technology Co., Ltd.	xx.xx
Kaps Engineers	xx.xx
Kurimoto, Ltd.	xx.xx
Lleal S.A.U.	xx.xx
LONGLY Group	xx.xx
Metso	xx.xx
Mill Powder Tech	xx.xx
Modern Process Equipment	xx.xx
MorehouseCowles	xx.xx
Munson Machinery, Inc.	xx.xx
Myers Mixers	xx.xx
Nara Machinery Co., Ltd.	xx.xx
NETZSCH Group	xx.xx
Nippon Coke & Engineering Co., Ltd.	xx.xx
Nippon Pneumatic Mfg. Co., Ltd.	xx.xx
Oliver + Batlle	xx.xx
POITTEMILL Group	xx.xx
ProXES GmbH	xx.xx
RETSCH	xx.xx
RICHI Machinery	xx.xx
Riera Nadeu	xx.xx
RSG Inc.	xx.xx
Schold Manufacturing	xx.xx
Seishin Enterprise Co., Ltd.	xx.xx
Shanghai ELE Mechanical and Electrical Equipment Co., Ltd.	xx.xx
Shanghai Farfly Energy Technology Co., Ltd.	xx.xx
Shanghai Root Mechanical and Electrical Equipment Co., Ltd.	xx.xx
SIEBTECHNIK TEMA	xx.xx
STM Microtec	xx.xx
Sturtevant, Inc.	xx.xx

Table 483 - continued

Key Player	Share (%)
Superfine LTD	xx.xx
Sözer Makina	xx.xx
TOKUJU	xx.xx
Tsukishima Kikai Co., Ltd.	xx.xx
Union Process	xx.xx
VMA-GETZMANN GmbH	xx.xx
WILHELM NIEMANN GmbH & Co. KG	xx.xx
Willy A. Bachofen AG	xx.xx
Zhejiang Jacan Technology Co., Ltd.	xx.xx
Zhengchang	xx.xx
福建丰力机械科技有限公司	xx.xx
Others	xx.xx

Sources & Evidence

1. IsaMill - About
   - Glencore Technology offers different IsaMill delivery models. ([glencoretechnology.com](https://www.glencoretechnology.com/en/technologies/isamill/about))
   - Evidence informing base-year company-share estimates: The page identifies xx.xx operating IsaMills within Glencore facilities and distinguishes mill-only, auxiliary-inclusive modular and turnkey delivery models. These support the captive-stock exclusion and final-package attribution assumptions, not measured 2025 receipts.
2. IsaMill - NETZSCH Grinding & Dispersing
   - NETZSCH identifies its IsaMill manufacturing and design expertise separately from Glencore Technology's integration, installation, and commissioning support.
3. Technical Service - RETSCH
   - RETSCH offers individual services and service plans, with plans unavailable in some countries.
   - Evidence informing base-year company-share estimates: The commercial service page separates individual services from service plans and limits plan availability by country. This supports excluding independently purchased support and retaining the Knowledge limitation; it does not measure replacement demand.
4. Rental and Used Machines - Hosokawa Alpine
   - Rental and refurbished machinery are advertised acquisition alternatives.
   - Evidence informing base-year company-share estimates: Documents rental and used-equipment acquisition alternatives. Supports inclusion of a bounded eligible annual-access allowance and exclusion of used-equipment resale, but does not quantify rental revenue.
5. HIGmill Plant - Metso
   - Metso advertises HIGmill Plant installation packages from basic support to EPC. ([metso.com](https://www.metso.com/portfolio/higmill-plant/))
6. Pulverisette 7 Planetary Micro Mill Premium Line - FRITSCH Milling and Sizing
   - FRITSCH lists PULVERISETTE xx.xx planetary laboratory equipment.

7. Emax - High Energy Ball Mill - RETSCH
   - RETSCH markets Emax as a named ultrafine-grinding instrument.
   - Evidence informing base-year company-share estimates: The manufacturer offers Emax for ultrafine laboratory milling. This supports qualifying portfolio participation, not the annual sales mix, installed population or realized equipment price.
8. Products - Attrition Mills - Roytec Global
   - Roytec markets GJM equipment using BGRIMM-MAT technology and associated regional equipment, service, and spares.
9. Products - Comminution - AAAmachine
   - AAAmachine attributes comminution equipment to Nisshin Engineering, Fluid Energy, Nippon Coke & Engineering, and JOKOH, establishing catalog access rather than binding manufacturer authority.
10. Vertical fine grinding mills - FLS
    - FLS lists Tower Mill and VXPmill for fine and ultrafine applications.
11. Legal Notice - FLS
    - The legal notice identifies FLSmidth & Co. A/S as website owner, supporting attribution to the captured identity.
12. Vertical Agitated Media Mill - Eirich
    - Eirich identifies TowerMill as a mineral-grinding offering developed and marketed by Nippon Eirich within Eirich Group.
13. Milling Systems - HaF Equipment
    - HaF states that it supplies STM Microtec mills exclusively in the United States and Canada within integrated HaF systems supported by local engineering and service.
    - Evidence informing base-year company-share estimates: HaF states that STM technology forms part of HaF integrated systems and identifies United States/Canadian exclusivity. This supports avoiding duplicate OEM/package attribution, not the model's assumed xx.xx% transfer deduction. ([hafequipment.com](https://hafequipment.com/milling-systems/))
14. Hosokawa Micron Powder Systems - Polimin
    - Polimin describes a Hosokawa representation and application route in Chile; the statement does not establish every transaction's manufacturer-confirmed authority.
15. Quem Somos - Micron
    - Micron Locação de Maquinas LTDA describes equipment sales and rental in Brazil.
16. Air Swept Classifier Milling Systems
    - Classifier Milling Systems advertises its Air Swept Classifier Mill System as an integrated equipment package; this does not establish the customer's negotiated installation obligations. ([classifiermillingsystems.com](https://classifiermillingsystems.com/milling-equipment/air-swept-classifier-system/))
17. Cell Mill - Atritor
    - Atritor markets Cell Mill for mineral, chemical, pigment, and food applications, with an integral classifier offered as an option.
18. Ultrafine Products - ANIVI
    - ANIVI markets Super Centauro plants for ultrafine products, identifying a ball mill and associated classification equipment. No comparative efficiency claim is adopted. ([anivi.com](https://www.anivi.com/ultrafine-products/?lang=en))
    - Evidence informing base-year company-share estimates: ANIVI markets Super Centauro ultrafine ball-milling plants, supporting eligible integrated-package attribution without establishing annual package sales. ([anivi.com](https://www.anivi.com/ultrafine-products/?lang=en))
19. Ultrafine Machine (UFM) - Ultra Febtech
    - Ultra Febtech markets the UFM Ultrafine Machine for food, pharmaceutical, chemical, and mineral applications. Application marketing does not establish regulatory acceptance. ([ultrafebtech.com](https://ultrafebtech.com/ultrafine-machineufm/))

20. MR Series Mini-efficient Pulverizer (Air Classifying Mill)
    - Jiangyin Powder Mill Technology Co., Ltd. lists the MR Series Mini-efficient Pulverizer as an air-classifying-mill offering with auxiliary equipment. Purchase-specific ultrafine duty remains to be established.
21. SBM Series Basket-Mill Machines - Sözer Makina
    - Sözer Makina markets SBM basket mills for wet-milling applications including paints, coatings, and inks. The listing does not establish equivalence to another quoted ultrafine offering.
22. FSP High Flux Sand Mill - Shanghai Farfly
    - Shanghai Farfly's page identifies an FSP High Flux Sand Mill inquiry, but also contains unrelated generic descriptive copy. Only the named listing is used; its performance claims are not adopted.
    - Evidence informing base-year company-share estimates: The page identifies an FSP High Flux Sand Mill inquiry under the Farfly business. Only offering identity is used; the record does not validate the modeled qualifying mix, price or generic descriptive claims.
23. Company - RETSCH
    - Evidence informing base-year company-share estimates: The company reports more than xx.xx installed products across a mixed equipment portfolio. This anchors the modeled commercial stock, not annual qualifying shipments or the assumed survival and eligibility fractions.
24. Your Local Contact - RETSCH
    - Evidence informing base-year company-share estimates: RETSCH describes commercialization through affiliated companies and distributors. This supports distinguishing final-seller roles; it does not establish the modeled xx.xx% retained share or whether each distributor takes title.
25. About Daswell Powder Technology Co., Ltd.
    - Evidence informing base-year company-share estimates: The supplier reports more than xx.xx delivered powder systems and lists Egyptian and Tanzanian references under 2025. These constrain cumulative commercial scale and participation; annual purchasing, prices and qualifying milling attribution remain modeled.
26. Daswell Powder Team Visits Egypt to Strengthen Cooperation with Calcium Carbonate Powder Producers, 2026
    - Evidence informing base-year company-share estimates: The March 2026 company announcement describes powder-business continuity from 2009 and establishment of the dedicated company in 2025. This supports the disclosed predecessor-attribution assumption, not a precise transfer date or observed 2025 revenue.
27. Record year for Metso stirred mills as mining industry opts for energy-efficient comminution technology
    - Evidence informing base-year company-share estimates: Reports approximately xx.xx cumulative stirred-mill deliveries and more than twenty Vertimill sales during 2025. The disclosed application range includes non-ultrafine duties, so these are qualified stock and activity anchors, not qualifying revenue observations.
28. Metso strengthens its position as a leading comminution technology and services supplier for mining industry; completes acquisition of Swiss Tower Mills Minerals
    - Evidence informing base-year company-share estimates: Documents acquisition completion on April xx.xx 2025 and preceding exclusive HIGmill sales rights from 2012, supporting single-group attribution rather than an additional independent HIGmill numerator.
29. Metso receives order for grinding mills to a copper project in Africa
    - Evidence informing base-year company-share estimates: Identifies an approximately EUR xx.xx 2024 HIGmill order including auxiliary equipment and services. Supports material package purchasing, but neither mill count nor 2025 revenue recognition.
30. FLSmidth to deliver 18 of the world's largest steel media tower mills, plus pumps and cyclones to one of largest and most efficient iron ore plants
    - Evidence informing base-year company-share estimates: Identifies eighteen tower mills ordered in February 2025, accompanying pumps and cyclones, undisclosed order value and installation during 2026-2027. Supports a commercial scale proxy while preventing direct treatment as 2025 sales.

31. FLSmidth 2025 Annual Report: Solid performance provides strong foundation for the next phase, focused on accelerating growth
    - Evidence informing base-year company-share estimates: Reports 2025 group revenue of DKK xx.xx and weaker Products activity. Provides an outer business envelope and recognition caution, not an ultrafine-equipment sales fraction.
32. NETZSCH Sustainability Report 2024/2025
    - Evidence informing base-year company-share estimates: FY2024/xx.xx turnover is EUR xx.xx; disclosed spare-parts and repair/refurbishment categories total EUR xx.xx. These constrain the modeled initial-equipment envelope but do not disclose Grinding & Dispersing's own aftermarket mix.
    - Evidence informing base-year company-share estimates: Reported group spare-parts and repair/refurbishment turnover provides a directional check on the modeled exclusion of standalone installed-asset receipts. ([netzsch.com](https://www.netzsch.com/_Resources/Persistent/e/xx.xx/c/xx.xx/e6c219fd59fb128f30bb8446322fc6dc0e618ca6/NETZSCH_2025_Sustainability_Report_final_en-US.pdf))
    - Evidence informing base-year company-share estimates: Constrains the common equipment-versus-aftermarket adjustment; its diversified group mix is not General Kinematics' own mix. ([netzsch.com](https://www.netzsch.com/_Resources/Persistent/e/xx.xx/c/xx.xx/e6c219fd59fb128f30bb8446322fc6dc0e618ca6/NETZSCH_2025_Sustainability_Report_final_en-US.pdf))
    - Evidence informing base-year company-share estimates: Supports treating aftermarket as economically material and excluding it from the common new-equipment calibration. ([netzsch.com](https://www.netzsch.com/_Resources/Persistent/e/xx.xx/c/xx.xx/e6c219fd59fb128f30bb8446322fc6dc0e618ca6/NETZSCH_2025_Sustainability_Report_final_en-US.pdf))
    - Evidence informing base-year company-share estimates: Provides an independent financial check on the common equipment adjustment, not a measured Disperset product-sales percentage. ([netzsch.com](https://www.netzsch.com/_Resources/Persistent/e/xx.xx/c/xx.xx/e6c219fd59fb128f30bb8446322fc6dc0e618ca6/NETZSCH_2025_Sustainability_Report_final_en-US.pdf))
    - Evidence informing base-year company-share estimates: FY2024/xx.xx group turnover is a peer-calibration input; initial-equipment and company attribution remain modeled.
33. NETZSCH Group Portrait - Business development FY2024
    - Evidence informing base-year company-share estimates: The inspected FY2024 sales-distribution chart identifies Grinding & Dispersing at xx.xx% of group sales. Carry-forward to FY2025 is explicitly modeled.
34. NETZSCH Grinding & Dispersing - An Introduction to the Business Unit
    - Evidence informing base-year company-share estimates: January-2024 Grinding & Dispersing brochure gives EUR xx.xx turnover and xx.xx-plus employees, supplying a specialist machinery-business revenue-per-employee benchmark rather than observed Eirich revenue.
    - Evidence informing base-year company-share estimates: The same business-specific turnover and workforce benchmark calibrates WAB's dated operations-staff bridge; WAB's scope and price/value adjustments remain assumptions.
35. Hosokawa Micron Corporation - FY2025 Financial Results Presentation, November 25, 2025
    - Evidence informing base-year company-share estimates: FY2025 presentation reports powder-business revenue at JPY xx.xx and group booking shares of xx.xx% film, xx.xx% aftermarket and xx.xx% toll processing. Supports a qualified equipment-versus-adjacent-activity proxy, not direct qualifying revenue.
36. Bühler strengthens its market position
    - Evidence informing base-year company-share estimates: Reports Advanced Materials order decline of xx.xx%, constituent order changes of −xx.xx%, xx.xx% and −xx.xx%, and group Customer Service share of xx.xx%. Supports the constrained business-area mix and aftermarket proxy.
37. Advanced Materials - Bühler Annual Report 2025
    - Evidence informing base-year company-share estimates: Reports 2025 Advanced Materials turnover of CHF xx.xx and describes Grinding & Dispersing commercial activity separately from die casting and optics. The division total is not itself qualifying mill revenue.

38. Eirich Machines Company, History & Global Presence
    - Evidence informing base-year company-share estimates: Official group-business page states xx.xx employees worldwide and identifies broad mixing and grinding operations. The undated workforce is used as a qualified scale proxy, not a sales allocation.
39. Corporate Profile - Nippon Eirich
    - Evidence informing base-year company-share estimates: Identifies xx.xx Nippon Eirich employees in January 2026, approximately xx.xx German-location employees, TowerMill/MaxxMill offerings and third-party bead-mill representation. Supports distinct activity and overlap adjustments, not observed milling effort percentages.
40. Willy A. Bachofen AG - Head of Operations recruitment notice, May 2025
    - Evidence informing base-year company-share estimates: May-2025 official recruitment document identifies approximately xx.xx operations employees, six subsidiaries and more than forty local sales partners. Supplies a dated staffing anchor, not consolidated revenue or shipment counts.
41. Union Process - Laboratory Grinding Mills, October 2024
    - Evidence informing base-year company-share estimates: Official laboratory brochure describes thousands of Attritors designed and built worldwide. Supports a cumulative commercial-stock modeling route, but not the assumed exact stock, active fraction or annual replacement rate.
42. Federal Reserve - Foreign Exchange Rates, G.5A Annual, January 5, 2026
    - Evidence informing base-year company-share estimates: Official 2025 annual average of USD xx.xx per euro supports translation of the modeled business-unit numerator.
    - Evidence informing base-year company-share estimates: Official 2025 annual average of JPY xx.xx per USD supports the calendar-currency bridge for the fiscal powder-business proxy.
    - Evidence informing base-year company-share estimates: Official 2025 annual average of CHF xx.xx per USD supports translation of the modeled qualifying equipment envelope.
    - Evidence informing base-year company-share estimates: Official calendar-2025 EUR/USD average translates the euro-denominated specialist-business calibration.
    - Evidence informing base-year company-share estimates: Official calendar-2025 EUR/USD average translates the staffing-based machinery-business calibration.
43. IsaMill - Glencore Technology
    - Evidence informing base-year company-share estimates: The IsaMill commercial page reports xx.xx cumulative installations. This is a stock/history anchor for the modeled 2025 external-supply numerator, not an observed annual shipment or revenue figure.
44. CLUM Ultrafine Vertical Roller Mill - CLIRIK
    - Evidence informing base-year company-share estimates: CLIRIK reports more than xx.xx CLUM ultrafine lines installed over five years. The model conservatively uses xx.xx as an undated cumulative calibration point before a stated base-year timing adjustment.
45. Expert On-site Guidance - CLIRIK
    - Evidence informing base-year company-share estimates: Two separately named service profiles report HGM commissioning totals of xx.xx and xx.xx CLUM totals of four and three, and experience of xx.xx and xx.xx years. Repeated page blocks are counted once; age adjustment and representativeness are model assumptions.
46. Guilin Hongcheng invitation to the Fourth Coal Gangue Comprehensive Utilization Forum - August 12, 2022
    - Evidence informing base-year company-share estimates: The August xx.xx 2022 company disclosure reports xx.xx equipment sets of annual manufacturing capacity and output value up to RMB xx.xx, separately describing planned xx.xx-set expansion. Only the existing xx.xx-set envelope anchors the estimate; utilization, eligibility and 2025 continuity are assumptions.
47. EPC powder processing project general contract - Guilin Hongcheng
    - Evidence informing base-year company-share estimates: The company advertises EPC powder-processing project supply, including broader equipment and support scope. This supports possible integrated-package attribution, not the assumed xx.xx% vertical-package unit mix or realized ticket.

48. Which ultrafine grinding mill brand is good, and how much does an 800-mesh mill cost? - SBM, January 8, 2021

· Evidence informing base-year company-share estimates: SBM's January xx.xx 2021 article quotes RMB xx.xx-xx.xx for ultrafine mills. It is a broad comparable-price check for the assumed lower-ticket HGM component, not a CLIRIK invoice, 2025 price or share observation.

· Evidence informing base-year company-share estimates: The dated ultrafine-mill quotation range provides a broad cross-supplier check on the USD xx.xx lower-ticket assumption. It does not establish Hongcheng prices, vertical-package premiums or annual sales.

49. AIMEX - Order Intake Trend, 2015-2025

· Evidence informing base-year company-share estimates: AIMEX's company-owned chart reports JPY xx.xx of 2024 orders and JPY xx.xx of 2025 orders. These calibrate the peer commercial-scale proxy, not observed Sturtevant revenue.
([aimex-apema.co.jp](https://www.aimex-apema.co.jp/dcms_media/image/aimex_jyutyu_2025.png))

· Evidence informing base-year company-share estimates: The dated AIMEX order quantities calibrate the monetary-activity reference used for Mill Powder Tech; company-specific scale and scope adjustments remain assumptions.

· Evidence informing base-year company-share estimates: The 2024/2025 order quantities constrain AIMEX's modeled delivery-equivalent flow; they do not establish recognized revenue.

50. AIMEX - Personnel Composition, 2025

· Evidence informing base-year company-share estimates: The company-owned organization chart totals xx.xx people, supporting the denominator of the specialist-equipment commercial-scale calibration.
([aimex-apema.co.jp](https://www.aimex-apema.co.jp/dcms_media/image/aimex_syozoku2025.png))

· Evidence informing base-year company-share estimates: AIMEX's xx.xx-person organization is the observed peer-scale input; Mill Powder Tech's workforce and relative activity adjustments are modeled.

· Evidence informing base-year company-share estimates: The xx.xx-person organization provides a business-scale check on AIMEX's order-intake anchor, not a shipment or revenue observation.

51. Sturtevant Inc. - Company-Maintained Business Profile

· Evidence informing base-year company-share estimates: The employer-maintained profile states an xx.xx-xx.xx employee business-size band. It supports a bounded specialist-scale assumption, not the model's exact xx.xx employee-equivalents or revenue.
([linkedin.com](https://www.linkedin.com/company/sturtevantinc/))

52. About Us - Sturtevant Inc.

· Evidence informing base-year company-share estimates: Sturtevant's own business history identifies Micronizer and distinguishes equipment manufacturing, classification and processing services, supporting scope exclusions rather than a published sales fraction. ([sturtevantinc.com](https://sturtevantinc.com/about/))

53. STM Microtec - Company Statement on Environmental-System Installations

· Evidence informing base-year company-share estimates: STM's company-authored statement reports more than xx.xx environmental-system installations. This is a mixed cumulative installation anchor, not annual qualifying mill sales.
([linkedin.com](https://www.linkedin.com/posts/stm-microtec_stm-microtec-provides-storage-dosing-and-activity-xx.xx-xx.xx))

54. Mills - STM Microtec

· Evidence informing base-year company-share estimates: The official portfolio identifies multiple dry-milling equipment families and the STM legal business, supporting milling eligibility while leaving commercial product mix unmeasured. ([stm-microtec.com](https://www.stm-microtec.com/mills/))

55. RSG Inc Alabama - Company-Maintained Business Profile

· Evidence informing base-year company-share estimates: RSG's company-maintained profile reports more than xx.xx installations across four continents and distinguishes mills, classifiers and processing activity. The model adjusts this mixed cumulative anchor before estimating annual supply.
([linkedin.com](https://www.linkedin.com/company/rsg-inc-alabama))

56. About RSG Inc - Manufacturer of Fine Grinding Mills

· Evidence informing base-year company-share estimates: RSG identifies worldwide mineral-equipment supply and describes early installations remaining in operation after xx.xx years. This supports a long-lived-equipment counterforce, not a measured replacement rate. ([ultrafinegrind.com](https://www.ultrafinegrind.com/about))

57. Mill Powder Tech Solution - Company-Maintained Business Profile

· Evidence informing base-year company-share estimates: The company-maintained profile states an xx.xx-xx.xx employee business-size band. It constrains the modeled business scale but does not establish actual 2025 workforce or sales. ([linkedin.com](https://www.linkedin.com/company/mill-powder-tech-solution))

58. Impact Classified Mill ICM Series - Mill Powder Tech

· Evidence informing base-year company-share estimates: The official ICM listing establishes an ultrafine grinding-system offering. It supports eligible portfolio scope, not the assumed xx.xx% qualifying revenue mix. ([mill.com.tw](https://www.mill.com.tw/en/product/xx.xx.html))

59. Mill Powder Tech Solutions - Company Commercial History, August 28, 2024

· Evidence informing base-year company-share estimates: The August xx.xx 2024 company account describes international sales and a past export-order contraction, supporting global commercial reach while qualifying extrapolation from reach to stable sales. ([mill.com.tw](https://www.mill.com.tw/en/news/xx.xx.html))

60. Bead Mill - AIMEX

· Evidence informing base-year company-share estimates: AIMEX's official portfolio lists Neo-ALPHA MILL and EASYNANO within its wet-milling business. This supports equipment eligibility but not order realization or qualifying sales percentages. ([aimex-apema.co.jp](https://www.aimex-apema.co.jp/en/beadmill.html))

61. Nippon Coke & Engineering - Three-Year Business Plan, FY2026-FY2028

· Evidence informing base-year company-share estimates: The business-plan presentation reports FY2025 actual chemical-machinery/Ariake Kiden sales of JPY xx.xx. This is the modeled numerator's financial envelope, not ultrafine-only revenue. ([n-coke.com](https://www.n-coke.com/wp-content/uploads/xx.xx%E3%xx.xx%8B%E5%B9%B4%E4%BA%8B%E6%A5%AD%E8%A8%xx.xx%E7%xx.xx%BB%EF%BC%xx.xx%E5%B9%B4%E5%BA%A6%E3%xx.xx%9C2028%E5%B9%B4%E5%BA%A6%EF%BC%xx.xx%E8%AA%AC%E6%xx.xx%8E%E8%B3%xx.xx%E6%xx.xx%xx.xx-.pdf))

62. Nippon Coke & Engineering - Financial Results for the Year Ended March 31, 2025

· Evidence informing base-year company-share estimates: The FY ended March xx.xx 2025 filing reports JPY xx.xx comprehensive-engineering revenue and separates coke, fuel/recycling and other businesses. It supports scope checks; it is not added to the narrower chemical-machinery anchor. ([n-coke.com](https://www.n-coke.com/wp-content/uploads/2025%E5%B9%B43%E6%9C%xx.xx%E6%9C%9F%E6%B1%BA%E7%AE%xx.xx%E7%9F%AD%E4%BF%A1.pdf))

63. Federal Reserve - Foreign Exchange Rates, G.5A Annual, January 5, 2026
    - Evidence informing base-year company-share estimates: The official 2025 JPY xx.xx/USD average independently checks the explicitly modeled JPY xx.xx/USD peer-calibration bridge. ([federalreserve.gov](https://www.federalreserve.gov/releases/g5a/current/))
    - Evidence informing base-year company-share estimates: The official yen average checks the working currency bridge used in the AIMEX-based scale reference.
    - Evidence informing base-year company-share estimates: The official yen average checks, but is distinguished from, the model's working realized-currency conversion.
    - Evidence informing base-year company-share estimates: The official yen average provides a currency sensitivity check on the chemical-machinery numerator.
    - Evidence informing base-year company-share estimates: The January xx.xx 2026 annual release reports a 2025 average of USD xx.xx per euro, supporting the conversion of the modeled FRITSCH equipment numerator into nominal USD.
    - Evidence informing base-year company-share estimates: The calendar-2025 USD xx.xx/EUR average supplies the currency conversion for the modeled numerator.
    - Evidence informing base-year company-share estimates: Annual foreign-exchange publication supplies the currency-translation reference for the JPY-denominated peer anchor; no company market share is reported.
    - Evidence informing base-year company-share estimates: Annual foreign-exchange publication supplies the currency-translation reference for the JPY-denominated peer anchor used in the TOKUJU model.
    - Evidence informing base-year company-share estimates: Annual foreign-exchange publication supplies the translation reference for the corporate financial envelope; actual transaction FX remains unmeasured.
64. FRITSCH Milling and Sizing - History
    - Evidence informing base-year company-share estimates: The official history reports approximately EUR xx.xx of sales with global trade partners in its 2020 anniversary account, supporting a historical business-scale anchor rather than observed 2025 qualifying revenue.
    - Evidence informing base-year company-share estimates: The history identifies sample-preparation and particle-sizing activities, requiring product-scope exclusions in the modeled numerator.
65. Planetary Ball Mills for Fine Grinding | Fritsch Milling and Sizing
    - Evidence informing base-year company-share estimates: The official U.S. portfolio lists PULVERISETTE planetary laboratory mills, supporting qualifying commercial participation and the laboratory-equipment attribution premise.
    - Evidence informing base-year company-share estimates: The catalog establishes offerings, not annual delivered units, realized prices or market share.
66. About Us - Zhejiang Jacan Technology Co., Ltd.
    - Evidence informing base-year company-share estimates: The exact company's official history describes a 2020 Zhejiang-plant project covering xx.xx lithium-battery-material grinding machines annually.
    - Evidence informing base-year company-share estimates: The history identifies the 2022 renaming to Zhejiang Jacan Technology Co., Ltd.; the xx.xx-set project is used as historical equipment-scale context, not observed 2025 shipments.
67. Custom Ultra fine Grinding Mill Manufacturers, Factory
    - Evidence informing base-year company-share estimates: The company's catalog lists ultrafine grinding equipment and adjacent classification, conveying, shaping and modification categories.
    - Evidence informing base-year company-share estimates: These distinctions support the model's qualifying-equipment and attributable-package exclusions; they do not establish the assumed eligibility or application mix.
68. Company Profile - JACAN
    - Evidence informing base-year company-share estimates: The group profile identifies Zhejiang Jacan and separate Shengzhou and Shanghai wholly owned subsidiaries.
    - Evidence informing base-year company-share estimates: The model therefore does not attribute the entire group footprint or all subsidiary receipts to the captured Zhejiang company.

69. About-Hongji Group
    - Evidence informing base-year company-share estimates: The manufacturer's official overview reports annual output exceeding xx.xx equipment sets across a broad mining, metallurgy and building-material machinery business.
    - Evidence informing base-year company-share estimates: This undated broad-output benchmark constrains the modeled company scale but does not directly measure 2025 ultrafine equipment deliveries.
70. Ultra Fine MIill-Hongji Group
    - Evidence informing base-year company-share estimates: The official product page lists an Ultra Fine Mill under the same manufacturer domain, supporting the qualifying commercial offering.
    - Evidence informing base-year company-share estimates: The page does not establish annual sales or the model's qualifying proportion within broad equipment output.
71. TSK Techno Review No. 15, 2011 - Boulton Vibratory Machines
    - Evidence informing base-year company-share estimates: The 2011 company publication reports more than xx.xx cumulative Boulton vibratory-machine sales, including mills, sieves, polishers and mixers.
    - Evidence informing base-year company-share estimates: The commercial abstract identifies licensed manufacturing continuity; the mixed cumulative count is a historical stock-scale anchor, not annual mill revenue.
72. Corporate Information｜Tsukishima Holdings Co., Ltd.
    - Evidence informing base-year company-share estimates: The official corporate history states that Tsukishima Machine Sales succeeded to the industrial business and adopted the Tsukishima Kikai name in April 2023.
    - Evidence informing base-year company-share estimates: This supports continuity of the operating equipment business without substituting total Tsukishima Holdings revenue for the company numerator.
73. Vibrating Mill | Tsukishima Kikai Co., Ltd.
    - Evidence informing base-year company-share estimates: The official operating-company page markets vibrating mills and identifies a fine-particle commercial capability.
    - Evidence informing base-year company-share estimates: The offering supports possible market inclusion but does not establish the assumed qualifying-duty proportion, current installed fleet or annual purchases.
74. Ashizawa Finetech - 会社案内＆製品カタログ（2025.11）
    - Evidence informing base-year company-share estimates: The company brochure reports JPY xx.xx revenue for the year ended March 2025, xx.xx employees in April 2025 and xx.xx% ownership by Ashizawa Holdings. These constrain business scale and corporate attribution, not the modeled qualifying-equipment percentages. ([ashizawa.com](https://ashizawa.com/pdf/dl/COM.pdf))
75. Yearly average currency exchange rates - Internal Revenue Service
    - Evidence informing base-year company-share estimates: The official 2025 yearly-average rate is JPY xx.xx per USD, supporting conversion of the modeled attributable yen receipts into the frozen denominator's currency. ([irs.gov](https://www.irs.gov/individuals/international-taxpayers/yearly-average-currency-exchange-rates))
    - Evidence informing base-year company-share estimates: The 2025 average conversion table gives JPY xx.xx per USD; dividing the modeled yen numerator by this rate converts Nara's attributable value into the common USD denominator basis. ([irs.gov](https://www.irs.gov/individuals/international-taxpayers/yearly-average-currency-exchange-rates))
    - Evidence informing base-year company-share estimates: The 2025 JPY-per-USD rate of xx.xx supports the currency bridge for Seishin's modeled equipment numerator, not its product-scope assumptions. ([irs.gov](https://www.irs.gov/individuals/international-taxpayers/yearly-average-currency-exchange-rates))
    - Evidence informing base-year company-share estimates: The 2025 JPY-per-USD rate of xx.xx supports conversion of Kurimoto's period- and scope-adjusted numerator into USD. ([irs.gov](https://www.irs.gov/individuals/international-taxpayers/yearly-average-currency-exchange-rates))
76. Support Outside Japan and Partnership with NETZSCH - Ashizawa Finetech Ltd.
    - Evidence informing base-year company-share estimates: Ashizawa's statement distinguishes manufacturing, selling and maintenance in Japan from NETZSCH customer support outside Japan. It supports role-aware attribution and exclusion of separately supplied partner support, but does not measure resale or support revenue. ([ashizawa.com](https://www.ashizawa.com/en/support/index.html))

77. 75 Years of Excellence: Schold's Journey from 1949 to Today
    - Evidence informing base-year company-share estimates: The anniversary disclosure identifies more than xx.xx cumulative machines and more than xx.xx customers, supplying the mixed-equipment stock-scale anchor. It also identifies the 2023 EMI Mills acquisition; none of these quantities is annual qualifying revenue. ([schold.com](https://schold.com/xx.xx-years-of-excellence/))
78. Media Mills / Bead Mills - SCHOLD
    - Evidence informing base-year company-share estimates: The portfolio distinguishes laboratory and production media-milling equipment and identifies EMI Mills as a Schold division. It supports the modeled equipment categories and consolidated attribution, not their assumed purchasing mix. ([schold.com](https://schold.com/product-category/all/mills/))
79. Schold Acquires EMI Mills (Engineered Mills Inc.)
    - Evidence informing base-year company-share estimates: Schold's acquisition announcement establishes EMI Mills within its commercial boundary. The model does not add a separate EMI company numerator or duplicate its activity. ([schold.com](https://schold.com/schold-acquires-emi-mills/))
80. New in Bremen: NETZSCH Vakumix moves to the airport city - NETZSCH Grinding & Dispersing
    - Evidence informing base-year company-share estimates: Provides the matched FY2022/xx.xx grinding-business turnover and xx.xx-employee calibration used in the modeled monetization bridge, not Munson revenue. ([grinding.netzsch.com](https://grinding.netzsch.com/en/news/2024/netzsch-vakumix-moves-to-the-airport-city/))
    - Evidence informing base-year company-share estimates: Supports the financial/workforce calibration applied to General Kinematics' assumed fine-grinding business equivalents; does not report its share. ([grinding.netzsch.com](https://grinding.netzsch.com/en/news/2024/netzsch-vakumix-moves-to-the-airport-city/))
    - Evidence informing base-year company-share estimates: Supplies the comparable grinding-business economic-scale primitive used for CMS, subject to explicit equipment, scope and timing assumptions. ([grinding.netzsch.com](https://grinding.netzsch.com/en/news/2024/netzsch-vakumix-moves-to-the-airport-city/))
    - Evidence informing base-year company-share estimates: Supports the common monetization benchmark before Disperset's separately modeled workload and lower-ticket adjustments. ([grinding.netzsch.com](https://grinding.netzsch.com/en/news/2024/netzsch-vakumix-moves-to-the-airport-city/))
    - Evidence informing base-year company-share estimates: Historical grinding-business turnover mix and xx.xx employees calibrate the financial staffing proxy.
    - Evidence informing base-year company-share estimates: Disclosed processing-equipment business turnover and workforce constrain the shared historical commercial-productivity benchmark; they do not report CIMMA revenue or share.
    - Evidence informing base-year company-share estimates: Disclosed processing-equipment business turnover and workforce constrain the shared productivity benchmark, not SIEBTECHNIK TEMA's eligible staffing allocation.
    - Evidence informing base-year company-share estimates: The disclosed benchmark constrains processing-machinery business scale per employee; Oliver + Batlle's workforce and milling mix remain modeled.
    - Evidence informing base-year company-share estimates: The disclosed benchmark constrains processing-machinery business scale per employee; Lleal's eligible milling allocation is not observed.
81. Munson Machinery Co., Inc. | LinkedIn
    - Evidence informing base-year company-share estimates: The company-authored profile reports an xx.xx-xx.xx employee band. The model's xx.xx workforce-equivalent point and 2025 timing bridge are assumptions. ([linkedin.com](https://www.linkedin.com/company/munson-machinery))
82. Pin Mills - Size Reduction Equipment for Bulk Materials - Munson Machinery, Inc.
    - Evidence informing base-year company-share estimates: Identifies CIM fine/ultrafine pin-mill offerings and broader duties, supporting eligible-product attribution but not annual sales or the assumed workload fraction. ([munsonmachinery.com](https://www.munsonmachinery.com/Pin-Mills/))

83. FOR IMMEDIATE RELEASE: General Kinematics Celebrates 65 Years of Innovation | General Kinematics
    · Evidence informing base-year company-share estimates: The September xx.xx 2025 announcement reports more than xx.xx employees and a xx.xx-square-foot headquarters, anchoring the conservative xx.xx-workforce-equivalent scale point. ([generalkinematics.com](https://www.generalkinematics.com/blog/gk-celebrates-xx.xx-years/))
84. General Kinematics Mining Industry Overview
    · Evidence informing base-year company-share estimates: Documents historical micron-grinding participation and non-grinding VIBRA-DRUM uses, supporting a narrow eligibility adjustment rather than counting the whole branded portfolio. ([generalkinematics.com](https://www.generalkinematics.com/wp-content/uploads/2015/xx.xx/GKM-xx.xx-Industry-Overview.pdf))
85. CMS Classifier Milling Systems | LinkedIn
    · Evidence informing base-year company-share estimates: The company-authored CMS profile reports an xx.xx-xx.xx employee band and describes equipment manufacture alongside toll processing; it does not disclose 2025 revenue. ([ca.linkedin.com](https://ca.linkedin.com/company/cms-classifier-milling-systems))
86. About Us - Classifier Milling Systems Inc.
    · Evidence informing base-year company-share estimates: Distinguishes milling-system manufacture and supply from tolling, materials operations, air-quality products and captive assembly, supporting the model's exclusions and non-duplication premises. ([classifiermillingsystems.com](https://classifiermillingsystems.com/about/))
87. DISPERSET | LinkedIn
    · Evidence informing base-year company-share estimates: The company-authored profile reports an xx.xx-xx.xx employee band for the Mexican machinery business, anchoring an explicitly modeled workforce-equivalent point. ([linkedin.com](https://www.linkedin.com/company/disperset))
88. Equipos de Dispersión y Molienda - Disperset
    · Evidence informing base-year company-share estimates: Identifies bead/ball milling offerings separately from dispersers, mixers and consumables, supporting a milling-only numerator and an assumed lower-ticket product bridge. ([disperset.com](https://www.disperset.com/equipos))
89. INMIMEX MOLINOS Y MEZCLADORAS - company profile
    · Evidence informing base-year company-share estimates: Company-presented xx.xx-xx.xx employee band constrains the working staffing scale; it is not audited 2025 employment.
90. Molinos Pulverizadores Industriales | INMIMEX México
    · Evidence informing base-year company-share estimates: Mexican-made pulverizer offerings and named fine-grinding/micronization applications support milling participation, not annual sales or universal ultrafine qualification.
91. INMIMEX | Fabricantes de Equipos Industriales en México
    · Evidence informing base-year company-share estimates: Own foundry/manufacturing and grinding/mixing roles support the modeled exclusion of non-milling commercial effort.
92. CB Mills - company profile
    · Evidence informing base-year company-share estimates: Company-presented xx.xx-xx.xx employee band and mixed equipment activities constrain staffing scale and non-milling exclusions.
93. Horizontal Media Mill - RH Series Horizontal Mill | CB Mills
    · Evidence informing base-year company-share estimates: Own-brand Red Head laboratory and production media equipment supports the modeled milling-supply scope; quantities and revenue are not disclosed.
94. History of CB Mills
    · Evidence informing base-year company-share estimates: Historical WAB/DYNO-MILL manufacturing relationship identifies potential overlap; the model excludes that manufacturing activity from own-brand attribution.
95. Morehouse-Cowles - company profile
    · Evidence informing base-year company-share estimates: Company-presented xx.xx-xx.xx employee band constrains the modeled staffing scale, without establishing actual 2025 payroll.

96. Media Mill Equipment | Horizontal Media Mills
    · Evidence informing base-year company-share estimates: Zinger is expressly offered for fine and ultrafine dispersions, supporting specialist media-mill inclusion rather than a generic mixing inference.
97. Mills | Customization Equipment by Morehouse Cowles
    · Evidence informing base-year company-share estimates: Horizontal, vertical, stone and laboratory milling categories support the company-specific scope adjustment; portfolio breadth does not measure their sales mix.
98. MYERS MIXERS, LLC - company profile
    · Evidence informing base-year company-share estimates: Company-presented xx.xx-xx.xx employee band constrains the working staffing model, not directly observed 2025 employment.
99. Basket Mill Model M850 - Myers Mixers
    · Evidence informing base-year company-share estimates: M850 basket media mills in laboratory and production formats support milling participation; qualifying-order incidence and receipts remain modeled.
100. Modern Process Equipment Corporation - company profile
    · Evidence informing base-year company-share estimates: Company-presented xx.xx-xx.xx employee band and grinding/conveying/system roles constrain the working scale and scope exclusions.
101. Explore Our Range of Commercial Coffee Grinders
    · Evidence informing base-year company-share estimates: Ultrafine & Turkish is a distinct commercial coffee-grinding application; unrelated coffee duties, conveyance and standalone support are not automatically eligible.
102. Jaygo, Inc. - company profile
    · Evidence informing base-year company-share estimates: Company-presented xx.xx-xx.xx employee band and separately described aftermarket activities constrain the staffing proxy; profile associations are not payroll counts.
103. About Us - Jaygo Inc
    · Evidence informing base-year company-share estimates: Mixed manufacturing, importing and equipment-selling roles, plus repair and spare-parts services, require financial attribution rather than whole-business inclusion.
104. Altern Mill Batch Mills for Ultra Fine Grinding | Jaygo Inc
    · Evidence informing base-year company-share estimates: Altern Mills are marketed as ultrafine wet batch equipment, supporting the qualifying offering. The source does not establish 2025 sales or the modeled access allowance.
105. Pellet Machine | Pellet Mill | Pellet Plant Construction - RICHI Machinery
    · Evidence informing base-year company-share estimates: RICHI reports more than 2,000 cumulative projects across its broad pellet-plant business. This constrains business scale but does not observe qualifying mill stock or 2025 deliveries; the model explicitly assumes the eligibility and annual-purchasing bridge. ([pellet-richi.com](https://www.pellet-richi.com/))
106. Ultrafine Pulverizer - RICHI Machinery
    · Evidence informing base-year company-share estimates: The supplier's ultrafine-pulverizer equipment page gives an indicative USD xx.xx-xx.xx+ price reference and distinguishes a standalone machine from a larger grinding system. It constrains the assumed USD xx.xx ticket, not realized 2025 revenue. ([pellet-richi.com](https://www.pellet-richi.com/crusher-mixer/ultrafine-pulverizer.html))
107. Pet Food Particle Size Reduction Grinder in Argentina - RICHI Machinery
    · Evidence informing base-year company-share estimates: A supplier-authored case identifies one SWFL110 purchase in Argentina in early 2025. It supports dated commercial participation, not independently verified delivery or a worldwide shipment count. ([pellet-richi.com](https://www.pellet-richi.com/single-pellet-machine-cases/pet-food-particle-size-reduction-grinder-in-Argentina.html))

108. Micronizing - MC DecJet 100, Pilot Scale
- Evidence informing base-year company-share estimates: The MC DecJet xx.xx commercial brochure states hundreds of worldwide installations. It anchors an order-of-magnitude installed-base model, but does not resolve model-versus-family coverage or observe annual revenue. ([dec-group.ch](https://www.dec-group.ch/_files/ugd/0a1e46_4ef60ac4be0048f99e361bd269e44e86.pdf))

109. Particle Science Technologies - Dec Group
- Evidence informing base-year company-share estimates: Dec's particle-science portfolio identifies milling equipment across development, pilot and production contexts. It supports the modeled equipment boundary and package discussion, not installation counts, ticket prices or annual sales. ([dec-group.ch](https://www.dec-group.ch/particle-science-technologies))

110. Our Story - Dec Group
- Evidence informing base-year company-share estimates: Dec's history describes a diversified acquired portfolio and more than xx.xx total Group projects. That broader figure is excluded from milling-stock attribution rather than converted automatically into equipment sales. ([dec-group.ch](https://www.dec-group.ch/our-story))

111. Company Profile - FPS Pharma
- Evidence informing base-year company-share estimates: FPS discloses approximately xx.xx cumulative systems across containment and micronization. This anchors the stock-scale proxy, but does not disclose the qualifying milling portion or annual 2025 sales. ([fps-pharma.com](https://www.fps-pharma.com/company/))

112. Products, Page 2 - FPS Pharma
- Evidence informing base-year company-share estimates: The catalogue names laboratory, pilot and production mills and specifically describes LaboMill-xx.xx/Pm1 integration with FPS isolators. It supports including attributable containment in a supplied milling package, not all stand-alone containment sales or universal interface responsibility. ([fps-pharma.com](https://www.fps-pharma.com/product/page/xx.xx/))

113. 21 CFR 211.63 - Equipment Design, Size, and Location
- Evidence informing base-year company-share estimates: The inspected provision concerns equipment suitability for intended use. It does not authorize the FPS brand or quantify acceptance, so no automatic regulatory-acceptance or pricing premium is introduced into the share model. ([ecfr.gov](https://www.ecfr.gov/current/title-xx.xx/chapter-I/subchapter-C/part-xx.xx/subpart-D/section-xx.xx))

114. ProXES ESG Report 2024
- Evidence informing base-year company-share estimates: Supplies the comparable equipment-business revenue-per-FTE calibration, not Riera Nadeu revenue.
- Evidence informing base-year company-share estimates: Reports 2024 group revenue of EUR xx.xx and xx.xx FTE, versus EUR xx.xx revenue in 2023; these are not ultrafine-only sales.
- Evidence informing base-year company-share estimates: Supplies the comparable supplier financial-scale calibration, not Frewitt revenue.
- Evidence informing base-year company-share estimates: Supplies the comparable supplier financial-scale calibration, not VMA-GETZMANN revenue.
- Evidence informing base-year company-share estimates: Supplies the comparable supplier financial-scale calibration, not NOLL revenue.
- Evidence informing base-year company-share estimates: Supplies the comparable supplier financial-scale calibration, not POITTEMILL revenue.

115. Average annual exchange rates for the year 2025
- Evidence informing base-year company-share estimates: Supports calendar-2025 conversion at USD xx.xx per EUR.

116. RIERA NADEU, SA - Catalonia Industry Suppliers Directory
- Evidence informing base-year company-share estimates: The government profile supplies historical EUR xx.xx-xx.xx turnover and xx.xx-xx.xx employee bands, distinguishes process-equipment and railway activity, and lists jet mills; its last update is September 2021.

117. Advanced wet grinding & emulsification | FrymaKoruma - ProXES
    - Evidence informing base-year company-share estimates: Distinguishes FrymaKoruma milling offerings from adjacent mixing, emulsification and pre-grinding equipment, supporting the modeled scope exclusions rather than a published revenue split.
118. ProXES Support | Commissioning, setup, and maintenance
    - Evidence informing base-year company-share estimates: Separately describes installation, maintenance and other lifecycle support, supporting exclusion of independently purchased service receipts; the identified qualification-support offering is FrymaKoruma-specific.
119. Frewitt et PMFch remportent le Prix à l'innovation du canton de Fribourg - November 9, 2016
    - Evidence informing base-year company-share estimates: The November xx.xx 2016 government release records approximately xx.xx staff at Frewitt's Swiss site and international equipment activity; this is a historical scale anchor, not 2025 global staffing.
120. FlexMill-Lab NanoWitt - Frewitt
    - Evidence informing base-year company-share estimates: Identifies FlexMill-Lab NanoWitt as a commercial laboratory wet-nanomilling bead-mill offering; it does not disclose annual sales.
121. VMA-Getzmann GmbH Verfahrenstechnik - Company profile
    - Evidence informing base-year company-share estimates: The company-authored profile identifies a xx.xx-xx.xx employee band and mixing, dispersing and fine-milling business roles; linked-profile counts are not used as workforce observations.
122. DISPERMAT RS10 bead mill - VMA-GETZMANN
    - Evidence informing base-year company-share estimates: Identifies the DISPERMAT RS10 production bead-mill offering within a broader equipment portfolio, supporting separate milling and non-milling scope treatment.
123. Premium Machines for Paint and Chemical Industries - NIEMANN
    - Evidence informing base-year company-share estimates: Reports approximately xx.xx machines produced annually and a broader mixing, dispersing and milling portfolio. The current annual output is bridged to 2025, not treated as observed 2025 revenue.
124. Optimize Your Grinding Process with KREIS-BASKET-MILL - NIEMANN
    - Evidence informing base-year company-share estimates: Supports the basket and continuous fine-grinding commercial formats used in the differentiated equipment-ticket model, without establishing transaction mix or prices.
125. Key to Bavaria - Aufbereitungstechnologie Noll GmbH
    - Evidence informing base-year company-share estimates: The government business profile records xx.xx location employees, equipment/engineering activity and no turnover figure; the workforce observation supplies a qualified commercial-scale anchor.
126. DemiNo - NOLL
    - Evidence informing base-year company-share estimates: Establishes DemiNo as a supplier-marketed milling offering, supporting the qualifying equipment category but not the assumed annual sales mix.
127. POITTEMILL - FORPLEX - Company profile
    - Evidence informing base-year company-share estimates: The company-authored group profile supplies an xx.xx-xx.xx employee band and an engineering-led powder-equipment/package role. Cumulative installations are not used as annual sales.
128. Impianti per il trattamento delle materie prime - Cimma Morandotti S.P.A.
    - Evidence informing base-year company-share estimates: The company overview reports more than xx.xx members and more than xx.xx cumulative machines/plants, and distinguishes pulverization from adjacent activities. Only the workforce reference constrains the working numerator; cumulative deliveries are not annual sales.
129. Industrial ultrafine powder pulverizing plants
    - Evidence informing base-year company-share estimates: The commercial pulverization portfolio establishes named fine/ultrafine equipment and plant offerings; it supports scope selection, not the assumed eligible-business fraction or annual revenue.

130. Karriere FAQ - SIEBTECHNIK TEMA
· Evidence informing base-year company-share estimates: The employer disclosure distinguishes approximately xx.xx principal-company employees from approximately xx.xx in the wider group and reports substantial export activity. It supports the core-company scale and Global attribution, not the assumed milling allocation.
131. Laboratory disc mill - SIEBTECHNIK TEMA
· Evidence informing base-year company-share estimates: The own-product page explicitly identifies laboratory ultrafine comminution equipment, supporting eligible commercial participation separately from the wider separation-equipment business.
132. OLIVER Y BATLLE, SA - Catalonia Industry Suppliers Directory
· Evidence informing base-year company-share estimates: The public-sector supplier entry gives EUR xx.xx-xx.xx turnover and xx.xx-xx.xx employee brackets and identifies milling alongside non-milling equipment. These constrain business scale, not exact 2025 milling revenue.
133. Grinding - Oliver + Batlle general brochure
· Evidence informing base-year company-share estimates: The company-authored brochure reports more than xx.xx cumulative mill sales and named wet-grinding families. It supports a substantial historical milling footprint, not current annual shipments or the modeled share.
134. LLEAL, SAU - Catalonia Industry Suppliers Directory
· Evidence informing base-year company-share estimates: The May 2024 supplier profile gives xx.xx-xx.xx employees, EUR xx.xx-xx.xx turnover and a mixed milling/process-equipment portfolio. These bound the modeled commercial scale and scope exclusions.
135. Empresa registrada: LLEAL, S.A. - Feina Activa
· Evidence informing base-year company-share estimates: The public employment-service company entry independently supplies a xx.xx-xx.xx worker bracket; the modeled xx.xx-person footprint is a working point within that interval.
136. Über uns | Firmenportrait - JEHMLICH
· Evidence informing base-year company-share estimates: The company portrait reports more than xx.xx installed comminution installations worldwide and distinguishes fine-grinding plants from adjacent equipment. It supplies the stock anchor, not the modeled annual replacement flow or qualifying fraction.
137. REKORD High Performance Mills - Fine Grinding, JEHMLICH
· Evidence informing base-year company-share estimates: The commercial REKORD brochure distinguishes higher-fineness and medium-fineness duties, supporting the need to exclude part of the broad installed base rather than treating every installation as qualifying ultrafine equipment.
138. About | Superfine | Israel
· Evidence informing base-year company-share estimates: Superfine identifies its mill-manufacturing business separately from its own processing operations and describes participation in tens of customer mill and micronization-line installations. This supports only a coarse installation-scale anchor for the modeled numerator, not the assumed xx.xx-equivalent count or 2025 sales.
([superfinemicro.com](https://www.superfinemicro.com/about))
139. Company Profile - Sözer Makina
· Evidence informing base-year company-share estimates: The company profile reports approximately xx.xx% of annual production exported and contacts in xx.xx countries by the end of 2022. These broad machinery inputs support the modeled export-unit bridge, subject to explicit 2025 activity and qualifying-product assumptions. ([en.sozer.com](https://en.sozer.com/corporate/company-profile/))
140. 2025 - Sözer Makina
· Evidence informing base-year company-share estimates: A September xx.xx 2025 archive entry markets SMNG nano horizontal milling equipment, supporting qualifying offering availability in the base year. It does not establish a completed sale, shipment count or the model's xx.xx% milling mix.
([sozer.com](https://www.sozer.com/2025/))

141. Profile - ALPA Powder Technology

· Evidence informing base-year company-share estimates: ALPA self-reports more than xx.xx customers. The estimate uses xx.xx as a cumulative lower-end commercial anchor, with explicit timing, purchasing-incidence, scope and ticket assumptions; the counter is not annual revenue. ([m.alpapowder.com](https://m.alpapowder.com/about-alpa/profile/))

142. Project Sites - Lithium-Ion Batteries Cathode And Anode Materials Processing Technology

· Evidence informing base-year company-share estimates: ALPA self-reports more than xx.xx cooperative lithium-industry customers. The model uses xx.xx as a subset-cohort anchor, not observed annual purchases. The page's leadership percentage and ambiguously scoped output-value statement are not numerical inputs. ([lithium.alpapowder.com](https://lithium.alpapowder.com/project-sites/))

143. Komodo - komodomills.com

· Evidence informing base-year company-share estimates: Attributes komodo equipment to Huyser Industries and lists three 2025 project entries, providing the supplier-reported activity count used in the working model. It does not establish prices, recognition dates or independently verified sales.

144. Jiangyin Powder Mill Technology - equipment portfolio and annual-sales disclosure

· Evidence informing base-year company-share estimates: The product-bearing supplier page reports annual sales of xx.xx equipment sets and displays grinding alongside mixing, screening and conveying. It supports the aggregate unit-flow anchor, not the modeled qualifying fraction or realized ticket.

145. MR-30 Ultrafine Grinding Machine for Cassava Flour in Nigeria

· Evidence informing base-year company-share estimates: The supplier-authored MR-xx.xx cassava-flour case supports an offering-specific ultrafine commercial reference. It does not establish independently verified payment, annual shipment coverage or invoice value.

146. Farfly Annual Meeting: Horses raise their hooves to gather today, with united wills to embark on a new journey

· Evidence informing base-year company-share estimates: The February xx.xx 2026 company retrospective reports more than xx.xx equipment units shipped in 2025. This supports the broad shipment anchor, not ultrafine-only units or recognized milling revenue.

147. 龙亿装备-粉体制备生产线厂家

· Evidence informing base-year company-share estimates: Reports more than xx.xx equipment-service customers. This is the reported-count floor for the modeled customer-stock bridge, not an observed annual shipment or market-share figure.

148. Powder Equipment Manufacturing Production Lines | Longyi

· Evidence informing base-year company-share estimates: Identifies the named manufacturer and its powder-equipment and complete-line business. Supports equipment/package attribution and exclusion of unrelated line activities; it does not disclose annual qualifying sales.

149. About Us - Shanghai ELE

· Evidence informing base-year company-share estimates: States that ELE has supplied thousands of equipment items and solutions over its operating history and identifies bead, basket and wet-grinding equipment alongside adjacent products. Supports the cumulative-stock proxy and need for a qualifying milling split, not the assumed annual purchasing rate.

150. Shanghai Root Mechanical and Electrical Equipment Co., Ltd. - company and equipment brochure

· Evidence informing base-year company-share estimates: The manufacturer-authored brochure identifies approximately RMB xx.xx annual output value for Shanghai Root's wet-grinding equipment business and separately describes sister-company activities. Supports a business-line monetary proxy, not dated 2025 recognized revenue.

151. Fine Chemical Factory Solution Provider | Root

· Evidence informing base-year company-share estimates: Identifies Shanghai Root, Anhui Root and other group entities and distinguishes equipment supply, manufacturing, EPC services and spare parts. Supports non-overlapping entity and product attribution.

152. Statistical Communiqué of the People's Republic of China on the 2025 National Economic and Social Development

· Evidence informing base-year company-share estimates: Reports the official calendar-2025 annual average exchange rate of RMB xx.xx per USD, used to convert the modeled RMB business-line numerator.

153. 高端机器人零部件加工项目封顶 - 福建省人民政府

· Evidence informing base-year company-share estimates: The July xx.xx 2026 publication reports capacity for xx.xx sets of ultrafine grinding equipment annually and separately describes casting and component activities. Supports the equipment-capacity anchor and adjacent-business exclusions, not actual 2025 deliveries or the assumed realization rate.

154. About US - Kaps Engineers

· Evidence informing base-year company-share estimates: Company-owned disclosure reports more than xx.xx worldwide installations and more than xx.xx% repeat-customer business, providing cumulative-stock and commercial-mix anchors rather than annual ultrafine revenue. ([kapsengineers.com](https://www.kapsengineers.com/about.php))

155. About us - DP Pulveriser

· Evidence informing base-year company-share estimates: Company-owned description reports xx.xx cumulative installations across xx.xx countries; its older history wording requires a qualified timing and active-cohort bridge. ([dppulveriser.com](https://dppulveriser.com/about-us))

156. DP® Spiral Jet Mill - DP Pulveriser

· Evidence informing base-year company-share estimates: The manufacturer directly lists DP Spiral Jet Mill equipment, supporting qualifying commercial participation but not annual deliveries or recognized revenue. ([dppulveriser.com](https://dppulveriser.com/products/dp-spiral-jet-mill))

157. 株式会社奈良機械製作所 - Company profile, Mynavi 2028

· Evidence informing base-year company-share estimates: Employer-published company profile reports JPY xx.xx sales for the year ending March 2026, used as a fiscal/calendar business-scale proxy, not directly observed qualifying mill revenue. ([job.mynavi.jp](https://job.mynavi.jp/xx.xx/pc/search/corp296127/outline.html))

158. エントリー - 株式会社奈良機械製作所

· Evidence informing base-year company-share estimates: Nara's official recruitment page directs readers to its Mynavi employer profile, supporting use of that company-presented business information rather than an anonymous financial aggregation. ([nara-m.co.jp](https://www.nara-m.co.jp/recruit/recruit-information/entry.html))

159. 企業情報 - 株式会社奈良機械製作所

· Evidence informing base-year company-share estimates: The corporate business description includes grinding alongside drying, mixing/granulation, surface modification and other activities, establishing exclusions needed to bridge whole-business sales into the equipment numerator. ([nara-m.co.jp](https://www.nara-m.co.jp/company.html))

160. 株式会社セイシン企業 - 2025 年 3 月卒業予定者用 求人票

· Evidence informing base-year company-share estimates: Company-authored university-hosted recruitment sheet reports historical parent/group sales of JPY xx.xx/xx.xx and a xx.xx% equipment sales mix, separately identifying measuring instruments and contract processing. The exact financial year is unspecified. ([tuat-career-support.jp](https://tuat-career-support.jp/wp-content/uploads/%E3%xx.xx%xx.xx%E3%xx.xx%BB%E3%xx.xx%A4%E3%xx.xx%B7%E3%xx.xx%B3%E4%BC%xx.xx%E6%A5%AD%E3%xx.xx%xx.xx%E6%B1%xx.xx%E4%BA%BA%E7%A5%A8_2025%E5%B9%B4%E5%8D%xx.xx.pdf))

161. 株式会社セイシン企業 - Company profile, Mynavi 2027

· Evidence informing base-year company-share estimates: Employer-published Seishin profile reports JPY xx.xx sales for March 2026, providing the current fiscal business-scale proxy to which historical equipment mix and explicit scope assumptions are applied. ([job.mynavi.jp](https://job.mynavi.jp/xx.xx/pc/search/corp24943/outline.html?func=corpinfo))

162. シングルトラックジェットミル - 株式会社セイシン企業

· Evidence informing base-year company-share estimates: Seishin's own product catalog lists Single Track Jet Mill, supporting the qualifying equipment role without establishing its proportion of annual equipment sales. ([betterseishin.co.jp](https://www.betterseishin.co.jp/product/stj/))

163. 株式会社栗本鐵工所 - 2025 年 3 月期 決算短信

· Evidence informing base-year company-share estimates: Mandatory financial disclosure reports JPY xx.xx Machinery Systems external-customer revenue for April 2024-March 2025, separately excluding internal segment sales and identifying broader powder machinery, press, casting and plant activities. ([corp.kurimoto.co.jp](https://corp.kurimoto.co.jp/ir_lastest-doc-download/.assets/tanshin_2024_4.pdf))

164. 株式会社栗本鐵工所 - 半期報告書, April-September 2025

· Evidence informing base-year company-share estimates: April-September 2025 mandatory filing reports Machinery Systems revenue of JPY xx.xx, down JPY xx.xx year on year. This counterevidence informs the modeled xx.xx calendar-period adjustment rather than being treated as ultrafine-only revenue. ([corp.kurimoto.co.jp](https://corp.kurimoto.co.jp/ir/library/securities-report/.assets/hankihou130.pdf))

165. Special Carbon Materials - KURIMOTO Co-LAB English

· Evidence informing base-year company-share estimates: Kurimoto's own commercial application portfolio identifies Cross Jet Mill, supporting qualifying participation and the need to separate grinding equipment from its broader machinery business. ([www02.global-kurimoto.com](https://www02.global-kurimoto.com/us/industrial/it-electronic/special-carbon.html))

166. 2026 呉地域総合就職ガイダンス 企業紹介 - 株式会社広島メタル＆マシナリー

· Evidence informing base-year company-share estimates: Company-provided FY March 2025 turnover of JPY xx.xx and a xx.xx-person workforce snapshot provide a diversified commercial receipts-per-employee benchmark; they are not NPK revenue.

· Evidence informing base-year company-share estimates: The same observed peer financial and workforce envelope calibrates the explicitly assumed TOKUJU labor-value model, not an observed TOKUJU numerator.

· Evidence informing base-year company-share estimates: FY March 2025 corporate turnover provides the financial envelope from which the modeled qualifying Chemtech milling contribution is constrained.

167. 会社概要 - 日本ニューマチック工業株式会社

· Evidence informing base-year company-share estimates: NPK reports xx.xx employees as of September 2024 and identifies chemical-machinery activity separately from construction equipment and pneumatic tools; these constrain the workforce and scope bridge.

168. Supersonic Jet Mill Model PJM - Nippon Pneumatic Mfg.Co.,Ltd.

· Evidence informing base-year company-share estimates: The PJM commercial offering establishes an eligible jet-milling activity; it does not establish annual equipment sales or the modeled scope coefficients.

169. 会社概要 - 徳寿工作所

· Evidence informing base-year company-share estimates: TOKUJU reports xx.xx employees as of March xx.xx 2024 and a powder-equipment/system-engineering business, providing the lagged workforce anchor.

170. 解砕機・粉砕機 - 徳寿工作所

· Evidence informing base-year company-share estimates: Nano Grinding Mill identifies an ultrafine jet-equipment proposition within a broader pulverizing catalog; catalog families are not used as sales weights.

171. 会社情報・会社概要 - 株式会社広島メタル＆マシナリー

· Evidence informing base-year company-share estimates: The company separates chemical/environmental machinery from steel, marine and other activities and reports JPY xx.xx corporate sales for March 2026; this is a later scale check, not 2025 mill revenue.

172. ケムテック事業部 - 広島メタル＆マシナリー

· Evidence informing base-year company-share estimates: Chemtech's commercial portfolio establishes relevant milling/dispersing activity alongside non-milling chemical and environmental equipment, supporting scope exclusions without observing the modeled sales split.

173. Daesung Chemical Machinery Ind. Co. - Manufacturer Storefront

· Evidence informing base-year company-share estimates: The manufacturer-authored storefront states an undated USD xx.xx-xx.xx annual-revenue band, xx.xx-xx.xx employees and a May xx.xx 2019 last login. This historical assertion supplies a bounded scale input, not verified 2025 revenue.

174. Daesung Chemical Machinery Ind. Co. - Company Profile

· Evidence informing base-year company-share estimates: The government-operated export profile corroborates the exact Hwaseong manufacturer identity and address; it does not independently verify the historical revenue band.

175. Daesung Chemical Machinery Ind. Co. - Electronic Products Machinery

· Evidence informing base-year company-share estimates: Jet Mill Plant and Super Dyna Mill listings establish relevant milling offerings; their existence does not measure annual sales.

176. The First President from Within the Ranks! The Challenge of the 5th President Aiming for a 200-Year Company

· Evidence informing base-year company-share estimates: The government-published interview reports historical specialist bead-mill business scale reaching JPY xx.xx and xx.xx employees. These inputs calibrate the modeled receipts-per-resource benchmark, not observed INOUE revenue or share. ([kanto-meti-gov.note.jp](https://kanto-meti-gov.note.jp/n/n14517e0cb743?hl=en))

· Evidence informing base-year company-share estimates: The historical JPY xx.xx/xx.xx-employee specialist benchmark constrains the workforce model; transfer to ANIVI, initial-equipment scope and currency conversion remain assumptions. ([kanto-meti-gov.note.jp](https://kanto-meti-gov.note.jp/n/n14517e0cb743?hl=en))

177. Company profile・Message from our president - INOUE MFG., INC.

· Evidence informing base-year company-share estimates: INOUE reports xx.xx employees and a broader machinery/plant business. The workforce anchors company scale; the qualifying milling allocation is modeled separately. ([inouemfg.com](https://www.inouemfg.com/en/outline/))

178. Spike Mill - INOUE MFG., INC.

· Evidence informing base-year company-share estimates: The company offers Spike Mill for ultrafine commercial applications, supporting eligible product attribution rather than annual revenue or a reported market percentage. ([inouemfg.com](https://www.inouemfg.com/en/products/?ca=xx.xx&id=xx.xx-xx.xx))

179. Company Profile - Dongguan Longly Machinery Co., Ltd.

· Evidence informing base-year company-share estimates: The company profile reports aggregate annual equipment capacity above 2,000 units and broader non-milling activities. Capacity is converted to qualifying 2025 equipment-equivalents only through explicit timing, utilization and scope assumptions. ([longlymill.com](https://www.longlymill.com/company-profile/))

180. LONGLY Sets New Production Capacity Record | Production Line Orders from Multiple Industry Leaders Secured

· Evidence informing base-year company-share estimates: The current undated announcement reports all-category monthly shipments approaching xx.xx. It is a commercial countercheck on changing scale, not an observed 2025 annual shipment total. ([longlymill.com](https://www.longlymill.com/media/longly-sets-new-production-capacity-record---production-line-orders-from-multiple-industry-leaders-secured.html))

181. Mass Production Pin Type Nano-Bead Mill: NT-V - LONGLY

· Evidence informing base-year company-share estimates: The named NT-V production nano-bead-mill offering supports qualifying equipment scope. Its availability does not measure realized annual receipts. ([longlymill.com](https://www.longlymill.com/products/mass-production-pin-type-nano-bead-mill-nt-v/))

182. Empresa - ANIVI

· Evidence informing base-year company-share estimates: ANIVI identifies an xx.xx-person team and several distinct business activities. The workforce provides the scale anchor; grinding allocation and ultrafine eligibility remain modeled. ([anivi.com](https://www.anivi.com/empresa/))

183. フロイント産業株式会社 FACTSHEET - 2025 年 2 月期
   - Evidence informing base-year company-share estimates: The FY ended February 2025 factsheet reports FREUND-TURBO sales of JPY xx.xx before consolidation adjustments; this is the subsidiary-scale financial anchor, not qualifying ultrafine revenue.
184. PRODUCT - FREUND-TURBO CORPORATION
   - Evidence informing base-year company-share estimates: The equipment portfolio distinguishes qualifying dry-grinding propositions from broader grinding, classification and granulation offerings, supporting product-scope exclusions; it does not disclose their sales mix.
185. Foreign Exchange Rates - G.5A Annual, January 5, 2026
   - Evidence informing base-year company-share estimates: The 2025 annual average exchange rate is JPY xx.xx per USD, used to convert the modeled attributable yen receipts into the frozen denominator's currency.
186. Rosebank Industries plc - FY25 Results and Proposed Acquisition of MW Components & CPM, March 2026
   - Evidence informing base-year company-share estimates: CPM's company transaction presentation reports over xx.xx installed machines and FY2025 revenue mix of xx.xx% Animal Feed and xx.xx% Food & Protein, with approximately half of revenue from aftermarket.
   - Evidence informing base-year company-share estimates: These broad management-reported anchors constrain the assumption-led eligible-stock model; they do not directly measure annual ultrafine equipment sales.
187. Rosebank Industries plc - March 2026 Admission Document
   - Evidence informing base-year company-share estimates: The admission document independently retains CPM's over-xx.xx-machine installed-base statement and distinguishes installed-fleet aftermarket opportunities from new equipment activity.
188. Vertical Pulverizer - CPM
   - Evidence informing base-year company-share estimates: CPM markets the IDAH Vertical Pulverizer for ultrafine powder purchasing in pet food and aquafeed, supporting the qualifying equipment and customer-context screen, not the assumed fleet incidence or annual sales.
189. Zhengchang - Integrated Group Enterprise
   - Evidence informing base-year company-share estimates: The company's Global Services counters report more than xx.xx engineering projects, used only as a broad cumulative commercial scale anchor requiring timing, uniqueness, survival and qualifying-application adjustments.
190. 高品质更细腻 正昌超微粉碎机家族焕新升级 - 正昌粮机
   - Evidence informing base-year company-share estimates: The June xx.xx 2025 company announcement establishes commercial SWFL and other named ultrafine equipment offerings; it supports the scope screen but does not report annual qualifying deliveries.
191. About Boyee | Provider of High-End Grinding Equipment & Smart Production Line Solutions
   - Evidence informing base-year company-share estimates: The company reports over xx.xx customer relationships and describes its equipment-manufacturing and integrated-line businesses. This supplies the customer-stock proxy anchor; timing, eligibility, active equipment, purchasing incidence and monetary conversion remain modeled.
192. About Us | INFOR Intelligent Equipment
   - Evidence informing base-year company-share estimates: The company describes its name continuity and 2022-2025 expansion, and reports annual equipment capacity above xx.xx units for the park entering from 2026. This constrains the capacity proxy, not observed 2025 shipments or revenue.

18.2. Market Concentration Analysis, 2025

Commercial control is concentrated around particular branded relationships, not established across the entire Ultra Fine Grinding Mill market. ■■■■■■■ ■■■■■■■■■■■ ■■ ■■■■■ ■■■■■ ■■■■■ ■■■■■■■■ ■■■■■■■■■■■ ■■ ■■■■■■■■ ■■■■■■■ ■■■■■■■■■■■ ■■■■ ■■■■■■■ ■■■■■■■ ■■■■■■■■■ ■■■■■ ■■■■■■■ ■■■■■■■ ■■■■■■■ ■ ■■■■■■■■■ ■■■■■■■■■■ ■■■■■■■■ ■■■■■■■■■■■■

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Territorial relationships can control account access without establishing common ownership. Ashizawa Finetech Ltd. describes manufacturing, selling, and maintaining NETZSCH products in Japan, with NETZSCH providing support outside Japan. ■■■ ■■■■■■■■■■ ■■■■■■■ ■■■■ ■■ ■■ ■■■ ■■■■■■■■■■■ ■■■■■■■■■■ ■■■■■■■■■ ■■ ■■■ ■■■■■■■ ■■■■■■■ ■■■ ■■■■■■■ ■■■ ■■■■■■■■■■■■■ ■■■■ ■■■■■■■■■■■ ■■■■■■■ ■■■■■■■■■■■ ■■■ ■■■■■■■■■ ■■■■■ ■■■■■■■■■■■■ ■■■ ■■■■ ■ ■■■■■■ ■■■■■■■■ ■■■■■■■■■■■■ ■■■■■■■■■■■ ■■■ ■■■ ■■■■■■■■■■ ■■■■■■■■■■■■ ■■ ■■■ ■■■■■■■ ■■■■■■ ■■■■■■■■ ■■■■■■■■■■ ■■■■■■■■■■■ ■■■■■■■■ ■■■ ■■■ ■■■■■■■■■■■■ ■■■■■■■■■ ■■■■■■■■■■■■■■■■■■■■

Several roster identities refer to overlapping portfolios rather than demonstrated independent alternatives. Coperion and Coperion GmbH connect to the Raymond portfolio; VMA-GETZMANN GmbH and VMA-GETZMANN connect to DISPERMAT; and NIEMANN's legal notice identifies WILHELM NIEMANN GmbH & Co. ■■■ ■■■■■ ■■■■■■■■ ■■ ■■■■■■■■ ■■■■■■ ■■■■■■■■■■ ■■■■ ■■■■■ ■■■■■ ■■■■ ■■■■■■■ ■■■■■■■■■ ■■■ ■■■■■■■■ ■■■■ ■■■■■■■ ■■■■■■■■■■ ■■■■ ■■■■ ■■■ ■■■ ■■■■ ■■■■■■■■■ ■■■■■■■■ ■■■■■ ■■■■■■■■■■ ■■■■■■ ■■■■■■■■ ■■■ ■■■■■■■■■■■■ ■■■ ■■■■■■■ ■■■ ■■ ■■■■■■■■ ■■ ■■■■■■■■■■■■ ■■■■■■■■ ■■ ■■■■■■■■■■ ■■■■■■■■■ ■■■■■■■■ ■■■■■■■■ ■■ ■■■■■■■■■ ■■■■■■■ ■■■

The Maelgwyn Mineral Services Ltd and Maelgwyn Mineral Services representations similarly require an identified contracting perimeter. Ro-Star is associated with Maelgwyn technology and ERSEL Heavy Machinery's manufacturing collaboration, while Maelgwyn also documents African premises. ■■■■■■■■■■ ■■■■■■■■■■■■ ■■■■■■■■■■■■ ■■■■■■■■■■■■■■ ■■■ ■■■■■■■■■ ■■■■■■■■ ■■■■■■■■■ ■■■■■■■■■ ■■■■■■■■■■ ■■■■■■ ■■■■ ■■ ■■■ ■■ ■■■■■■■■■■ ■■■■■■■■■ ■■■■■■■■ ■■■■■■■■■ ■■■■■■■■ ■■■■■■■■■ ■■■■■■■■ ■■■■■■■■■ ■■ ■ ■■■■■■■■■ ■■■■■■■■■ ■■■■■■■■ ■■■■■■■■■■

Historical associations can misstate the control point. Coperion's transition explanation expressly separates its acquired Schenck Process FPM business from Qlar. ■■■■■■ ■■■■■■ ■■ ■■■■ ■■■ ■■■■■■■■ ■■■■■■■ ■■■■ ■■■ ■■■■■■■■■ ■■■■■■■■■ ■■ ■■■■■■■■■■ ■■■■■■■ ■■■■■■■■■ ■■■■■■■■■■■ ■■■ ■■■■■■■■■ ■■■ ■■■■■■■■■■ ■■■■■■■■■■ ■■■■■ ■■■ ■■■■■■■ ■■■■■ ■■■■■■■■ ■■■■■■■■■■ ■■ ■■■ ■■■■■■■■ ■■■■■ ■■■■■■■■■ ■■■■■■■■■■■■■ ■■■■ ■■■■ ■■■■■ ■■ ■■■■ ■■■■■■■ ■■■■■■■ ■■■■■■■ ■■■ ■■■■■ ■■■■■■■■■■■■■■ ■■■ ■■■■■■■ ■■■■■■■ ■■■■■■■■■■ ■■■■■■■■■■ ■■■■■■■ ■■■■■■■■■ ■■■■■■■ ■■■■■■■■■■■■■ ■■ ■■■■■■■ ■■■■■■■■■

Branded equipment does not necessarily make all adjacent purchasing exclusive. Glencore Technology identifies multiple IsaMill media suppliers and leaves commercial selection to customers within its stated offering limits. ■■■■ ■■■■■■■■■■■■■■ ■■■■■■■■ ■■■ ■■■■■■■■■■■■ ■■■■■■■■■■ ■■■ ■■■■■■■■■■■ ■■■■■■■■■■ ■■■■■■■■■ ■■■■■■■ ■■■■■■■■■■■■■ ■■■■■ ■■■■■■■■ ■■■■■■■ ■■■■ ■■■■■■■■■■ ■■■■■■■■■■■■■ ■■■■■■■■ ■■■■■■■■■■ ■■■■■■■■■ ■■■■■■■ ■■■ ■■■■■■■ ■■■■ ■■■■■■■■ ■■■■■■■■■■■■ ■■■■ ■■■ ■■■■■■■■■ ■■ ■■■■ ■■■ ■■■■■■■■■■ ■■■■■■■■■■■■ ■■■■■■■■■■■■■■■■■■ ■■ ■■■■■ ■■■■■■■

Integration can also shift bargaining toward the party controlling accepted interfaces. Metso offers HIGmill Plant service packages from basic support to EPC, while Glencore Technology offers local-installation and turnkey IsaMill models. ■ ■■■■■■■ ■■■■■■■■ ■■■ ■■■■■■■

RESEARCH SAMPLE REPORT

[redacted]

Sources & Evidence

1. IsaMill - About
   · The delivery alternatives establish a retained-interface choice; broader accountability depends on the accepted contract. ([glencoretechnology.com](https://www.glencoretechnology.com/en/technologies/isamill/about))
2. IsaMill - NETZSCH Grinding & Dispersing
   · The documented complementary roles support treating the organizations as participants in one IsaMill relationship rather than separate IsaMill technologies. ([grinding.netzsch.com](https://grinding.netzsch.com/en/products-and-solutions/wet-grinding/isamill/))
3. Metso Completes Acquisition of Swiss Tower Mills Minerals
   · Metso completed the Swiss Tower Mills Minerals acquisition on April xx.xx 2025 and identifies its preceding exclusive HIGmill sales rights. This supports offering-specific control, not category-wide control. ([metso.com](https://www.metso.com/corporate/media/news/2025/xx.xx/metso-strengthens-its-position-as-a-leading-comminution-technology-and-services-supplier-for-mining-industry-completes-acquisition-of-swiss-tower-mills-minerals/))
4. IsaMill Ceramic Media Supplier Options
   · Glencore Technology identifies multiple IsaMill media suppliers and leaves commercial selection to customers within stated offering limits. No technical sourcing specifications are used. ([glencoretechnology.com](https://www.glencoretechnology.com/.rest/api/v1/documents/f0307b9af4d3d12e4808ab61b7245614/IsaMill%2BMedia%2B2025_03.pdf))
5. HIGmill Plant - Metso
   · The basic-to-EPC service choices establish different advertised responsibility scopes rather than identical package obligations. ([metso.com](https://www.metso.com/portfolio/higmill-plant/))
6. Support Outside Japan and Partnership with NETZSCH - Ashizawa Finetech Ltd.
   · Ashizawa assigns manufacturing, sales, and maintenance of NETZSCH products in Japan to Ashizawa and support outside Japan to NETZSCH. ([ashizawa.com](https://www.ashizawa.com/en/support/index.html))
7. Milling Systems - HaF Equipment
   · The stated territorial supply relationship establishes a potential access control point, not common ownership or every model's contractual coverage. ([hafequipment.com](https://hafequipment.com/milling-systems/))
8. SCM Ultrafine Grinding Mill - SBM Industrial Technology Group
   · The SCM portfolio establishes an SBM-branded equipment offer, not ownership relationships with Liming or ZENITH. ([sbmchina.com](https://www.sbmchina.com/products/scm_mill.html))
9. Non-Metallic Mineral Grinding Solutions for Australia - Liming Heavy Industry
   · Destination-focused marketing and named products do not settle ownership relationships with SBM or ZENITH. ([liming-global.com](https://www.liming-global.com/australia-non-metallic-mineral-grinding/))
10. DISPERMAT RS10 bead mill - VMA-GETZMANN
    · The shared DISPERMAT portfolio does not establish another independent OEM merely because both brand and legal-name representations are captured. ([vma-getzmann.com](https://www.vma-getzmann.com/products/for-production/horizontal-bead-mills/produkt/dispermat-rs10-bead-mill/))
11. Impressum - WILHELM NIEMANN GmbH & Co. KG
    · NIEMANN's legal notice identifies WILHELM NIEMANN GmbH & Co. KG as the business behind its website. ([niemann.de](https://www.niemann.de/de/impressum))
12. Ro-Star
    · The Ro-Star commercial site associates the offering with the Maelgwyn and ERSEL collaboration. It does not settle the individual customer's contracting and remedy allocation. ([ro-star.tech](https://www.ro-star.tech/))

13. Leachox - Maelgwyn
    - Maelgwyn's Leachox page identifies its Ro-Star ultrafine mill within an equipment-associated technology offering. This does not settle separate contracting perimeters for the captured Maelgwyn representations. ([maelgwyn.com](https://maelgwyn.com/leachox/))
14. Maelgwyn Africa - Brand New Facilities
    - Maelgwyn documents African business premises. Regional presence is not used as proof of a local Ro-Star sale or independent competing supplier. ([maelgwyn.com](https://maelgwyn.com/maelgwyn-africabrand-new-facilities/))
15. Raymond Ultrafine Mill - Coperion
    - Coperion's current portfolio directly lists Raymond Ultrafine Mill. The same portfolio attribution does not establish independent equipment businesses for both captured Coperion representations. ([coperion.com](https://www.coperion.com/en/products-services/process-equipment/pulverizing/ultrafine-mill))
16. We are now Coperion
    - Coperion explains the former Schenck Process FPM transition and expressly identifies Qlar as a separate company outside Coperion and Hillenbrand. ([fhn.coperion.com](https://fhn.coperion.com/we-are-now-coperion/))
17. About Us - POLYC
    - Shanghai Polyc's company page connects the POLYC brand to Shanghai Polyc Technology Co., Ltd. and its milling-equipment business. Separate independent control is not established. ([pybeadmill.com](https://www.pybeadmill.com/about-us.html))
18. About Us - EPIC Powder Equipment
    - EPIC's company page identifies Qingdao EPIC Powder Machinery Co., Ltd. behind the operating equipment catalog also used by the EPIC Powder Equipment representation. ([epicmilling.com](https://www.epicmilling.com/about-us/))

18.3. Recent Developments & Impact Analysis, 2025

Metso's completed acquisition of Swiss Tower Mills Minerals on April xx.xx 2025 changed organizational control of HIGmill, but did not create exclusivity from an previously open sales relationship: Metso already held exclusive HIGmill sales rights. ■■■ ■■■■■■■■■■■ ■■■■■■■■■■■■ ■■ ■■■■■■■■■■■■■■■ ■■ ■■■ ■■■■■■■■■■■■■■■■■■■ ■■■■■■■■■■■■ ■■■ ■ ■■■■■■■■■■ ■■■■■■■■■■■■■■ ■■ ■■■■■■■■■■■ ■■■■■■■ ■■■■ ■■■■■■■■ ■■■■■■■■■ ■■■■■■■ ■■■■■■■ ■■■■■■■ ■■■■■■■■ ■■■ ■■■■■■■■■■■ ■■■■■■■■■■■■ ■■■ ■■■■■■■■ ■■■■■■■■■■■■ ■■■■■■ ■■■■■■■■■■ ■■■■■■ ■■■■■■■■■ ■■■■■■■■■■■■ ■■■■■■■■■■■■ ■■ ■■■■■■■■■■■■■ The transaction does not establish control of the entire category.

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[redacted] The affected buyers can discuss coordinated packages that combine milling with another organization's integration capabilities. The commercial trigger is a concrete proposal identifying the lead counterparty and retained interfaces; the announcements alone do not establish completed customer delivery or single-party remedies.

[redacted] These events affect portfolio and parent attribution, not evidence of a new independent Raymond equipment alternative. Existing and prospective buyers should confirm the legal seller and continuity of obligations rather than rely on historical group names.

Willy A. Bachofen AG records a DYNO-MILL UBM product launch in 2025 alongside its established DYNO-MILL portfolio. This gives wet-milling buyers a further named product discussion, but does not establish that an existing KD purchase should be replaced or that parts, accessories, and support transfer between families. [redacted]

[redacted] The current named milling obligation, selling entity, and continuing support terms remain necessary before preferring group sourcing. No new mill capability or universal package accountability follows from the ownership event alone.

Sources & Evidence

1. Metso Completes Acquisition of Swiss Tower Mills Minerals
   - The completed acquisition internalized an existing exclusive HIGmill relationship; the published event does not settle individual customer contracts.
   ([metso.com](https://www.metso.com/corporate/media/news/2025/xx.xx/metso-strengthens-its-position-as-a-leading-comminution-technology-and-services-supplier-for-mining-industry-completes-acquisition-of-swiss-tower-mills-minerals/))
2. NETZSCH and MESNAC Partner to Deliver Turnkey Solutions for Battery Industry
   - NETZSCH announced the MESNAC INTELLIGENT battery-industry partnership on June xx.xx 2025, combining grinding and dispersing with automation and system integration. No completed customer delivery or unified liability is established.
   ([grinding.netzsch.com](https://grinding.netzsch.com/en/news/2025/netzsch-and-mesnac-partner-do-deliver-turnkey-solutions-for-battery-industry))

3. Legal Notice - FLS
   · The legal notice connects FLS business announcements to the captured FLSmidth & Co. A/S identity. ([fls.com](https://fls.com/en/legal/legal-notice))
4. Weir 2025 Full Year Results Presentation
   · The order record establishes a commercialization stage, not completed commissioning or the duty of a contemplated purchase. ([global.weir](https://www.global.weir/globalassets/investors/reporting-centre/2026/full-year-results-2025/weir-2025-full-year-results-presentation.pdf))
5. PROBAT acquires Royal Duyvis Wiener
   · The acquisition changes the supplier ownership context but does not establish a new mill capability, universal package accountability, or cross-food equipment equivalence. ([probat.com](https://www.probat.com/newsroom/news/probat-acquires-royal-duyvis-wiener-and-significantly-strengthens-its-position-in-the-cocoa-and-chocolate-sector/))
6. We are now Coperion
   · The transition took effect August xx.xx 2024 and places Raymond Bartlett Snow within the transferred portfolio. This supports updated attribution rather than another independent Raymond alternative. ([fhn.coperion.com](https://fhn.coperion.com/we-are-now-coperion/))
7. FLSmidth to deliver steel media tower mills, pumps and cyclones to an iron ore plant
   · FLS announced the Indian customer's tower-mill, pump, and cyclone order on February xx.xx 2025 and expected installation and commissioning during 2026-2027. The announcement is not a completed-commissioning record. ([fls.com](https://fls.com/en/announcements/2025/flsmidth-to-deliver-xx.xx-of-the-worlds-largest-steel-media-tower-mills-plus-pumps-and-cyclones-to-one-of-largest-and-most-efficient-iron-ore-plants))
8. ANDRITZ enters partnership with NETZSCH-Feinmahltechnik for alternative protein production solutions
   · ANDRITZ announced a NETZSCH-Feinmahltechnik alternative-protein partnership on March xx.xx 2024, with distinct equipment and integration contributions. The announcement does not allocate an individual customer's remedies. ([andritz.com](https://www.andritz.com/newsroom-en/separation/2024-xx.xx-xx.xx-netzsch-group))
9. Qlar returns to the food and pet-food industry
   · Qlar's announcement describes its food and pet-food return from September xx.xx 2025 and the prior FPM separation; it does not establish ownership of Coperion's Raymond offering. ([qlar.com](https://www.qlar.com/press-and-media/press-releases/qlar-is-back-in-the-food-and-petfood-industry))
10. Lone Star Completes Acquisition of Hillenbrand
    · Hillenbrand announced completion of its acquisition by a Lone Star affiliate on February xx.xx 2026. This is a parent ownership event, not evidence of another independent Raymond portfolio. ([hillenbrand.com](https://hillenbrand.com/corporate-news/lone-star-completes-acquisition-of-hillenbrand/))
11. Our company history - WAB
    · WAB's company history records a DYNO-MILL UBM product launch in 2025. A launch does not establish replacement necessity or parts and support continuity with KD. ([wab-group.com](https://www.wab-group.com/en/wab-group/history/))

18.4. Product Portfolio Analysis, 2025

The Ultra Fine Grinding Mill market contains application-specific equipment portfolios rather than a universally interchangeable set of mills. ■■■ ■■■■■■ ■■■ ■■■■■■■ ■■■■■■■■■■ ■■■■■■■ ■■■■■■■■ ■■■■■■■■ ■ ■■■ ■■■■■ ■■■■■ ■■■■ ■■■ ■■■■■■■■ ■■■ ■■■■■■ ■■■■■■■ ■■■■■■■■■ ■■■■■■■ ■■■■■ ■■■■■■■■■■■■■■ ■■■■■■■■■■■■ ■■■■■■■■ ■■■■■■■■■ ■■■■■■■■■■■■■■ ■■■■■■■ ■■■■ ■■■■■■■■ ■■■■■ ■■■■■■■■■ ■■■■■■■■■■■■■ ■■■ ■■■■■■ ■■■■■■■■■■ Buyers comparing these alternatives must align the supplied milling package and continuing

obligations; the organizations participating in IsaMill do not represent separate competing IsaMill technologies.

Regional mineral-grinding propositions introduce different responsibility structures. ■■■■■■ ■■■■■■ ■■■■■ ■■■ ■■■■■■ ■■■ ■■■■■■■■■ ■■■■■ ■■■■■■■■■ ■■■■■■■■■■ ■■■■ ■■■■■■■■ ■■■■■■■ ■■■ ■■■■■■■ ■■■ ■■■■■■■ ■■■■■■■■ ■■■■■■■ ■■■■■■■■ ■■■■■ ■■■■■■ ■■■■■■■■■■ ■■■■■■■■■■ ■■■ ■■■■■■ ■■■ ■■■■■ ■■ ■■■ ■■■ ■■■■■■■■■ ■■■■■ ■■■■■■■ ■■■■■■■■■■ ■■■■■■■■■ ■■■■■■■■■■ ■■■ ■ ■■■■■■■■ ■■■■■■■■■■ ■■■■■■■■ ■■ ■■■■■■■■■■ ■■■■■■■■■■■■■ ■■■■ ■■■ ■■■■■■■■■ ■■■■■■■■■ ■■■■■■■■■■■■■ ■■■■■■■■■ ■■ ■■■■■■■■■■ ■■■■■■■■■■■■ CITIC Heavy Industries Co., Ltd.'s CSM portfolio adds a wet fine-grinding proposition whose precise quoted ultrafine duty must be established separately.

Industrial Minerals purchasing has a distinct roller- and vertical-mill comparison. ■■■■■■ ■■■■■■■■■ ■■■■■■ ■■■■■■■■■ ■■■■■■■■■■■■■ ■■■■ ■■■■ ■■■■■■■ ■■■■ ■■■ ■■■■■■■■■■■ ■■■■■■■ ■■■■■■■ ■■■ ■■■■■■ ■■■■■■■ ■■■ ■■■■■■ ■■■■■■ ■■■■■ ■■■ ■■■ ■■■■■ ■■■ ■■■■■■■■■■ ■■■■■■■■■■ ■■■■■ ■■■■■ ■■■■ ■■■ ■■■■■■ ■■■■■ ■■■■■■■■ ■■■■■■■ ■■■ ■■■ ■■■ ■■■■■■■■ ■■■■■■ ■■■■■■■■■■ ■■■■ ■■■■ ■■■■■ ■■■■ ■■■ ■■■■■ ■■■■■ ■■■■■■ ■■■■■■ ■■■■■■■ ■■■■■■■■■ ■■■■■■■■■■■■■ ■■■■ ■■■■ ■■■■■■ ■■■■■■■■■ ■■■■■■■■ ■■■■■■ These portfolios overlap in mineral-powder purchasing, but catalog overlap does not establish common application suitability or independent corporate control.

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Media milling is not confined to wet processing. Ashizawa Finetech Ltd. markets DRYSTAR continuous dry bead mills, RSG Inc. offers the dry agitated-media ufg mill, and Union Process advertises SD-xx.xx for wet or dry and batch or continuous service. ■■■■■ ■■■■■■■■■■■■■ ■■■■■■■■ ■■■■ ■■■■■■■■■■ ■■■■■■■■■■■■ ■■■■■■■■■■ ■■■■■■■■■■■■ ■■■■ ■■■■ ■■■■ ■■■ ■■■■■■■■■■■■■■■■■■ ■■■■ ■■■■■■■■ ■■■■■ ■■■■■■■■■■■■ ■■■ ■■■■■■ ■■■■■■■■ ■ ■■■■■ ■■■■■ ■ ■■■■■■■■■ ■■■■■■■■ ■■ ■ ■■■■■■■■■■■■ ■■■■■■■■■ ■■■■■■■■■■ ■■■■■■■■■■■■ ■■■■ ■■ ■■■■■■■■ ■■ ■■■ ■■■■■■ ■■■■■■■■■■

For wet formulations and advanced materials, Bühler Group's SuperFlow+ and Willy A. Bachofen AG's DYNO-MILL KD establish specialist bead-mill alternatives. VMA-GETZMANN GmbH and VMA-GETZMANN connect to the same DISPERMAT RS10 offering, while WILHELM NIEMANN GmbH & Co. ■■ ■■■ ■■■■■■■ ■■■■■■■ ■■ ■ ■■■■■■ ■■■■■■■ ■■■■■■■■ ■■■■■■■■ ■■■■■■ ■■■ ■■■■■■■■■■ ■■■■■■■ ■■■■■■■■ ■■■■■■ ■ ■■■■■■■■ ■■■■■■■■■ ■■■■ ■■■ ■■■■■■■■ ■ ■■■■■■■■■■■■■■■■ ■■■■■■■■■■■ ■■■ ■■■■■■ ■■■■■■■■ ■■■ ■■■■■ ■■■■■■■■ ■■■■■■■■ ■■■■■■■■■■■■ ■■■ ■■■■■■■ ■■■■■■■■■■■■ ■■■ ■ ■■■■■ ■■ ■■■■■ ■■■ ■■■■■■■■■■ ■■■■■■■■■■■■■■■■

[illegible] Hockmeyer Equipment Corporation markets HCPN immersion milling; Custom Milling & Consulting offers Supermill PLUS horizontal media mills; Schold Manufacturing offers horizontal, vertical, immersion, and laboratory equipment, including its EMI Mills division; and Jaygo Inc. markets Altern Mill wet batch equipment. These are commercially useful alternatives for formulation buyers, but a broad mixing or processing portfolio should not substitute for the milling obligation in the order.

Chinese and other Asian wet-milling portfolios broaden the equipment inquiry without establishing a common integration standard. Boyee (Shenzhen) Industrial Technology Co., Ltd. offers LMM, Guangdong INFOR Intelligent Equipment Co., Ltd. offers LPM, Shanghai ELE Mechanical and Electrical Equipment Co., Ltd. markets Nano Mill equipment, and Shanghai Root Mechanical and Electrical Equipment Co., Ltd. lists an industrial double-drive nano bead mill. [illegible]

AIMEX's Neo-ALPHA MILL and EASYNANO, INOUE MFG., INC.'s Spike Mill, and Houchi Machine's NT Nano Ceramic Bead Mill provide further wet-milling formats. [illegible] LEADINWAY USA separately lists Houchi equipment and describes distribution and support services, creating a channel proposition rather than another demonstrated owner of the milling technology.

[illegible] The Jet Pulverizer Company, Inc. manufactures Micron-Master equipment across laboratory and production contexts; Fluid Energy Processing & Equipment Company offers JET-O-MIZER; Sturtevant, Inc. offers Micronizer; and AVEKA Group designs, builds, and sells fluidized-bed jet mills. Equipment supply remains distinct from separately purchased processing services, even where the same supplier offers both.

European jet-milling portfolios provide additional application-qualified choices. [illegible] These named offerings warrant comparison within the buyer's required deployment and supply scope, not substitution based solely on the shared micronization label.

Pharmaceutical package purchasing can involve containment as well as milling. [illegible]

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Japanese jet-equipment alternatives include Nisshin Engineering Inc.'s Super Jet Mill, Seishin Enterprise Co., Ltd.'s Single Track Jet Mill, Kurimoto, Ltd.'s Cross Jet Mill, Nippon Pneumatic Mfg. Co., Ltd.'s PJM, and TOKUJU's Nano Grinding Mill. ■■■■■■ ■■■■■■■■■■■■ ■■■■ ■■■■ ■■■ ■■ ■■■■■■■■■■ ■■■■■■■■■■ ■■■■■■ ■■■■■■■■■■■■■■ ■■■■■■■■■ ■■■■ ■■■■■■■ ■■■■■■ ■■■ ■■■ ■■■■■■■■■■■ ■■■■■■■ ■■■■■■■■ ■■■■■■■■ ■■■■■■■■■■■ ■■■■■ ■■■■ ■■■■ ■■■■■■■ ■■■■■■■ ■ ■■■■■ ■■■■■■■■ ■■■■■■■■ ■■■■■ ■■■■■■■■■■■■■■ ■■■■■■■ ■■■■■■■■■ ■■■ ■■■■■■■■ ■■■■ ■■ ■■■■■■■■■■■ ■■■■■■■■■■■■■ ■■ ■■■ ■■■■■■■■■■ ■■■■■■■■■■

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Integration breadth requires its own comparison. POITTEMILL Group advertises powder-processing equipment and turnkey systems, CIMMA Morandotti S.P.■■ ■■■■■ ■■■■■■■■■■■■ ■■■■■■■■■ ■■■ ■■■■■■■■ ■■■ ■■■ ■■■■■■■■■ ■■■■■■■■ ■■■■■■■■■■ ■■■■■■■■ ■■■■■■■■■■■■ ■■■ ■■■■■■■■ ■■■■■■■■■■■ ■■■■ ■■■■■■ ■■■■■■■■■■ ■■■■■■■■■ ■■■■ ■■■■■■■■ ■■■ ■■■■■■■■■■■■■■ ■■■■■■■■■■ ■■■■■ ■■■■■ ■■■■■ ■■■■■■■■ ■■■■ ■■■■■ ■■ ■■■ ■■■■■■ ■■■ ■■■■■■■■ ■■■■ ■■■■■■ ■■■■■ ■■■■■■■■■■ ■■■ ■■■■■■■■ ■■■■■■■■ ■■■■■■■■ ■■■■■■■■■■ ■■■ ■■■ ■■■■■■■■ ■■■■■■■■■■ ■■■■■■ ■■■■■■■■ ■■■ ■■■■■■■■■ ■■■■ ■■ ■■■■■■■■ ■■■■■■■■ ■■■ ■■■■■■ ■■■■■■■■ ■■■■■■■■ ■■ ■■■ ■■■■■■■■■■ ■■■■■■■■■■

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■■■■■ ■■■■■■■■■ ■■■ ■■■■ ■■■■■■■■■■■■ ■■■■■■■ ■ ■■■■■■■■ ■■■■■■■■ ■■■■■■■■■■ ■■■■■■■■ ■■■ ■■■■■■■■ ■■■ ■■■■ ■■■■■■■■ ■■■■■■■■■■ ■■■■■■ ■■■■ ■■■■ ■■■ ■■■■■■■■■■ ■■■■ ■■■■ ■■■■■■■■■■ ■■■ ■■■■■ ■■■■■■■■■ ■■■■■■■■■ ■ ■■■■■■■■ ■■■■ ■■■■■■■■■■■■ Modern Process Equipment markets industrial roller-style coffee grinding, including an Ultrafine & Turkish category. Application-specific ultrafine terminology supports these food and feed comparisons without establishing equivalence to ore regrinding or nanoscale wet-formulation equipment.

[illegible] Industrias Tomadoni publishes a milling portfolio. These establish different equipment or system inquiries; a named milling obligation and contractual inclusions are still needed before treating a broader food-processing proposition as a comparable mill purchase.

Laboratory equipment is included on its own terms. [illegible] Conversely, a laboratory catalog does not establish production-package capability or equivalence among these instruments.

Sources & Evidence

1. AFG Fluidised Bed Jet Mill
   · Hosokawa Alpine directly offers AFG fluidized-bed opposed-jet equipment. Commercial identity is used without operational details or patent-barrier inference. ([hosokawa-alpine.com](https://www.hosokawa-alpine.com/powder-particle-processing/technologies/grinding-and-classifying/jet-mills/afg/))
2. IsaMill - About
   · IsaMill is marketed with equipment and broader grinding-package delivery alternatives. ([glencoretechnology.com](https://www.glencoretechnology.com/en/technologies/isamill/about))
3. IsaMill - NETZSCH Grinding & Dispersing
   · NETZSCH identifies its IsaMill manufacturing and design expertise separately from Glencore Technology's engineering, installation, and commissioning support. ([grinding.netzsch.com](https://grinding.netzsch.com/en/products-and-solutions/wet-grinding/isamill/))
4. HIGmill Plant - Metso
   · Metso markets HIGmill Plant as a named fine-grinding package with auxiliary modules. ([metso.com](https://www.metso.com/portfolio/higmill-plant/))
5. Pulverisette 7 Planetary Micro Mill Premium Line - FRITSCH Milling and Sizing
   · FRITSCH lists PULVERISETTE xx.xx premium planetary equipment with wet and dry capabilities in a laboratory instrument context. ([fritsch-us.com](https://fritsch-us.com/instrument-specifications/pulverisette-xx.xx-premium-line/))
6. Vibratory Grinding and Particle Size Reduction Equipment - SWECO
   · SWECO lists Vibro-Energy equipment and differentiates wet-only from wet-or-dry model families. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))
7. Dry Batch or Continuous Laboratory Mills - Union Process
   · Union Process advertises SD-xx.xx for wet or dry and continuous or batch service, with separately referenced accessories and options. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))
8. Hosokawa Micron Group - HOSOKAWAMICRON CORPORATION
   · Hosokawa Micron Corporation identifies Hosokawa Alpine within its group grinding-and-classifying portfolio, supporting the group attribution used in comparisons. ([hosokawamicron.co.jp](https://www.hosokawamicron.co.jp/en/aboutus/group.html))

9. HLMX Superfine Grinding Mill
   · Guilin Hongcheng markets HLMX for ultrafine nonmetallic-mineral powders and identifies filler and additive applications. ([hcmilling.com](https://www.hcmilling.com/hlmx-superfine-grinding-mill.html))
10. EPC powder processing project general contract
    · Hongcheng's EPC page separates core-equipment manufacture from external auxiliary procurement and advertises installation and continuing support. ([hcmilling.com](https://www.hcmilling.com/epc.html))
11. Emax - High Energy Ball Mill - RETSCH
    · RETSCH directly markets Emax for ultrafine laboratory/sample-preparation applications. Industrial-package capability is not inferred. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/emax/))
12. DRYSTAR SDA1 - Ashizawa Finetech Ltd.
    · Ashizawa markets DRYSTAR as continuous dry bead-milling equipment for submicron applications. Comparative performance claims are not adopted.
    ([ashizawa.com](https://www.ashizawa.com/en/products/drystar.html))
13. Products, Page 2 - FPS Pharma
    · FPS lists LaboMill, PilotMill, and ProMill equipment and specifically describes integration of named laboratory jet mills within FPS isolators. Universal compatibility is not established.
    ([fps-pharma.com](https://www.fps-pharma.com/product/page/xx.xx/))
14. Advanced wet grinding and emulsification - FrymaKoruma
    · FrymaKoruma's portfolio distinguishes Co-Ball ultrafine grinding, perforated-disc pre-grinding, colloid milling, and adjacent emulsification duties.
    ([proxes.com](https://www.proxes.com/en/products/product-brands/frymakoruma))
15. Products - Attrition Mills - Roytec Global
    · Roytec markets GJM ultrafine equipment using BGRIMM-MAT technology and offers related equipment, service, and spares in listed territories.
    ([roytecglobal.com](https://roytecglobal.com/products/products-attrition-mills/))
16. LMM Ultrafine Centrifugal Nano Bead Mill - Boyee
    · Boyee directly markets LMM as wet ultrafine bead-milling equipment for continuous commercial applications, including battery materials, coatings, and inks.
    ([boyeemill.com](https://www.boyeemill.com/boyee-lmm-centrifugal-nano-bead-mill.html))
17. Vertical fine grinding mills - FLS
    · FLS lists Tower Mill and VXPmill for fine and ultrafine applications, with related parts and service offerings. Promotional superiority is not adopted.
    ([fls.com](https://fls.com/en/equipment/grinding/vertical-fine-grinding-mills))
18. Legal Notice - FLS
    · The FLS legal notice identifies FLSmidth & Co. A/S as website owner, linking the captured company identity to the FLS portfolio. ([fls.com](https://fls.com/en/legal/legal-notice))
19. Vertical Agitated Media Mill - Eirich
    · Eirich markets TowerMill for wet grinding of ores, minerals, and industrial raw materials and identifies Nippon Eirich within the offering relationship.
    ([eirich.com](https://www.eirich.com/en/processes/grinding-technology/towermill/vertical-agitated-media-mill))
20. Vertical Stirred Mill - CITIC HIC
    · CITIC identifies CSM vertical stirred mills as fine-grinding equipment and publishes supplier-attributed customer references.
    ([citicheavyindustries.com](https://www.citicheavyindustries.com/vertical-stirring-mill.html))
21. Fine Grinding - New Concept Projects
    · New Concept Projects' fine-grinding page markets MIGMILL as a named equipment proposition; it does not establish another supplier's contractual equivalence.
    ([newconcept.co.za](https://www.newconcept.co.za/fine-grinding/))

22. Komodo Vertically Stirred Mills
    · The komodo site attributes the VSM range to Huyser Industries and includes ultrafine grinding among marketed applications. Supplier performance claims are not adopted. (komodomills.com)
23. Milling Systems - HaF Equipment
    · HaF markets integrated milling systems incorporating STM Microtec technology and states United States and Canadian exclusivity, with local engineering and service. ([hafequipment.com](https://hafequipment.com/milling-systems/))
24. Industrial Grinding Mills & Powder Processing Machines - CLIRIK
    · CLIRIK's portfolio lists HGM, CLUM, classifier-impact, and jet-mill equipment. Catalog presence is not independent proof of performance or corporate independence. ([clirik.com](https://www.clirik.com/products/))
25. SCM Ultrafine Grinding Mill - SBM Industrial Technology Group
    · SBM directly markets SCM as an ultrafine grinding-mill offering. Promotional superiority claims are not used. ([sbmchina.com](https://www.sbmchina.com/products/scm_mill.html))
26. Ultrafine Grinding Mill - Cronus Machinery
    · Cronus Machinery's commercial page lists the CRHGM Ultrafine Grinding Mill; individual delivery and contracting obligations are not established. ([ultragrindingmill.com](https://www.ultragrindingmill.com/grinding-equipment/ultrafine-grinding-mill.html))
27. Ultra Fine Mill - Hongji Group
    · Hongji Group directly lists an Ultra Fine Mill offering. Its promotional comparisons are not treated as independently established performance. ([hongjigroup.com](https://www.hongjigroup.com/product/Ultra_Fine_Mill.html))
28. Non-Metallic Mineral Grinding Solutions for Australia - Liming Heavy Industry
    · Liming's Australia-focused page names LUM and MW for selected fine and ultrafine mineral applications and describes complete-line supply. ([liming-global.com](https://www.liming-global.com/australia-non-metallic-mineral-grinding/))
29. Manufacturer of Grinding Equipment - Vsunny
    · Vsunny's product-bearing site lists VSLM vertical and VSHM ring-rolling ultrafine equipment under the supplier identity. (grind-mills.com)
30. Vertical Mill - Longyi
    · Longyi's catalog offers superfine vertical-mill equipment within its powder-processing portfolio. ([lymill.com](https://www.lymill.com/vertical-mill))
31. Ultrafine Grinding Mill - Fote Machinery
    · Fote directly markets HGM Ultrafine Grinding Mill equipment. Unnamed export and superiority claims are not used as independent adoption evidence. ([chinaftm.com](https://www.chinaftm.com/products/ultrafine-grinding-mill.html))
32. Ultrafine Powder Grinding Mill Machine - The Nile
    · The Nile's equipment page identifies HGM-series ultrafine powder mills and a supplier inquiry route. ([nilequipment.com](https://www.nilequipment.com/powder-production-line/xx.xx.html))
33. About Daswell Powder Technology Co., Ltd.
    · Daswell describes complete industrial-mineral powder-processing lines, installation, and lifecycle support. Specific customer obligations remain contractual. ([daswellpowder.com](https://daswellpowder.com/about/))
34. Grinding mills and air classification - RSG Inc.
    · RSG's product-bearing site identifies ufg as a dry agitated-media ultrafine mill. Only commercial classification is used. ([ultrafinegrind.com](https://www.ultrafinegrind.com/))
35. Drum Mills and Bond Mill - SIEBTECHNIK TEMA
    · SIEBTECHNIK TEMA's drum-mill brochure describes fine and ultrafine equipment in laboratory and production contexts. ([siebtechnik-tema.de](https://www.siebtechnik-tema.de/wp-content/uploads/2023/xx.xx/wb229e_trommelmuehlen_2025.pdf))

36. Broyeur vibrant à excentriques ESM - SIEBTECHNIK TEMA
    · SIEBTECHNIK TEMA markets ESM eccentric-vibrating mills for ultrafine grinding, establishing another commercial format.
    ([siebtechnik-tema.fr](https://www.siebtechnik-tema.fr/unit_operation/eccentric-vibrating-mills/))
37. SuperFlow+ bead mill - Bühler
    · Bühler directly offers SuperFlow+ for wet grinding and dispersing into submicron and nanoscale applications, with integration-related offerings.
    ([buhlergroup.com](https://www.buhlergroup.com/global/en/products/superflow_high-performancebeadmill.html))
38. DYNO-MILL KD - Horizontal agitator bead mill
    · WAB's DYNO-MILL KD brochure identifies horizontal agitator bead mills for ultrafine wet-grinding applications.
    ([wab-group.com](https://www.wab-group.com/wp-content/uploads/2023/xx.xx/WAB_DYNO-MILL_KD_E_2024.pdf))
39. DISPERMAT RS10 bead mill - VMA-GETZMANN
    · The official VMA-GETZMANN portfolio lists DISPERMAT RS10 production bead-milling equipment; the shared offering supports portfolio overlap between the captured representations.
    ([vma-getzmann.com](https://www.vma-getzmann.com/products/for-production/horizontal-bead-mills/produkt/dispermat-rs10-bead-mill/))
40. Impressum - WILHELM NIEMANN GmbH & Co. KG
    · The legal notice supports common business attribution for the NIEMANN and WILHELM NIEMANN representations. ([niemann.de](https://www.niemann.de/de/impressum))
41. Fine grinding - NIEMANN
    · NIEMANN's commercial materials describe KREIS basket and continuous milling formats for fine liquid applications. ([niemann.us](https://www.niemann.us/en-US/company/know-how/fine-grinding))
42. Supermill Plus SMP - Oliver + Batlle
    · Oliver + Batlle markets Supermill Plus SMP as horizontal wet-milling equipment for coatings and inks, including submicron applications.
    ([oliverbatlle.com](https://oliverbatlle.com/en/prod/recirculation-milling-supermill-plus-smp/))
43. HCPN Immersion Mill - Hockmeyer
    · Hockmeyer directly markets HCPN immersion milling for nano applications. Technical superiority and patent-barrier conclusions are not adopted. ([hockmeyer.com](https://hockmeyer.com/products/hcpn/))
44. Milling Equipment - Custom Milling & Consulting
    · Custom Milling & Consulting's equipment catalog lists Supermill PLUS horizontal media equipment for ultrafine applications separately from other processing and mixing products.
    ([cmcmilling.com](https://cmcmilling.com/equipment/))
45. Media Mills / Bead Mills - Schold
    · Schold lists laboratory, horizontal, vertical, and immersion media mills and identifies EMI Mills as its division.
    ([schold.com](https://schold.com/product-category/all/mills/))
46. Altern Mill Batch Mills for Ultra Fine Grinding - Jaygo
    · Jaygo markets Altern Mills for ultra-fine wet batch grinding in cosmetics, paints, inks, coatings, and related applications. ([jaygoinc.com](https://jaygoinc.com/products/altern-mill-batch-mills/))
47. LPM Vertical Bead Mill Series - INFOR
    · INFOR directly lists LPM Vertical Bead Mill equipment for ultrafine and nanoscale industrial applications. Operational guidance and superiority claims are not used.
    ([inforintl.com](https://www.inforintl.com/products/lpm-vertical-sand-mill/))
48. Nano Mill - Shanghai ELE
    · Shanghai ELE's product page directly offers Nano Mill equipment as an ultrafine milling proposition. Its conformity and superiority claims are not independently adopted.
    ([ele-mix.com](https://www.ele-mix.com/hot-products/nano-mill.html))

49. New Energy Series Industrial Double-Drive Nano Bead Mill - ROOT
    · ROOT lists an industrial double-drive nano bead mill and identifies Shanghai Root Mechanical and Electrical Equipment Co., Ltd. ([wet-grinding.com](https://wet-grinding.com/xx.xx-xx.xx-industrial-double-drive-nano-bead-mill.html))
50. Horizontal Nanosize Bead Mill - Chongqing DEGOLD
    · Chongqing DEGOLD directly markets nanosize horizontal bead-milling equipment and describes submicron applications. Export claims are not used as independently confirmed transactions. ([chinadegold.com](https://www.chinadegold.com/Degold-20Liters-Large-Flow-Horizontal-Nanosize-Bead-Mill-pd6362625.html))
51. Mass Production Pin Type Nano-Bead Mill: NT-V - LONGLY
    · LONGLY directly offers NT-V as production nano-bead equipment and names advanced-material, coating, and ink applications. ([longlymill.com](https://www.longlymill.com/products/mass-production-pin-type-nano-bead-mill-nt-v/))
52. PHN SuperMaxZeta+ nano milling machine - PUHLER TECH Group
    · PUHLER TECH Group's product page lists PHN SuperMaxZeta+ nano milling equipment. The comparison uses offering identity only. ([eng.puhler.com](https://eng.puhler.com/fjldchssb/xx.xx.jhtml))
53. Bead Mill - AIMEX
    · AIMEX's bead-mill portfolio lists Neo-ALPHA MILL and EASYNANO and describes its wet-grinding equipment context. ([aimex-apema.co.jp](https://www.aimex-apema.co.jp/en/beadmill.html))
54. Spike Mill - INOUE MFG., INC.
    · INOUE directly offers Spike Mill as wet-grinding equipment. Only product format and commercial identity are used. ([inouemfg.com](https://www.inouemfg.com/en/products/?ca=xx.xx&id=xx.xx-xx.xx))
55. Electronic Material - Houchi Machine
    · Houchi's electronic-material portfolio lists NT Nano Ceramic Bead Mill equipment as a commercial offering. ([en.houchi-machine.com](https://en.houchi-machine.com/electronic-materials-applications))
56. LEADINWAY USA
    · LEADINWAY USA lists Houchi Machine equipment, including NT Nano Ceramic Bead Mill, and describes distribution and maintenance coordination. (leadinway-usa.com)
57. About Us - The Jet Pulverizer Company
    · Jet Pulverizer identifies in-house Micron-Master equipment manufacture from laboratory through production contexts and distinguishes its processing division. ([jetpulverizer.com](https://www.jetpulverizer.com/about-us/))
58. JET-O-MIZER - Fluid Energy Processing and Equipment
    · Fluid Energy maintains a dedicated JET-O-MIZER equipment offering. Product identity does not establish another jet mill's equivalence. ([fluidenergype.com](https://www.fluidenergype.com/equipment/jet-o-mizer/))
59. Micronizer Product Bulletin - Sturtevant
    · Sturtevant's commercial bulletin identifies Micronizer jet-milling equipment for ultrafine application categories. No operational guidance is used. ([sturtevantinc.com](https://sturtevantinc.com/wp-content/uploads/2020/xx.xx/Micronizer_Product_Bulletin.pdf))
60. Jet Milling Equipment - AVEKA
    · AVEKA's equipment page describes designing, building, and selling fluidized-bed jet mills through AVEKA Cottage Grove, distinct from processing services alone. ([aveka.com](https://www.aveka.com/processing/jet-milling-equipment-for-sale/))
61. Powder Processing Mills - British Rema
    · British Rema's equipment portfolio distinguishes opposed, spiral-flow, classifier, ball, and impact mills across laboratory and industrial contexts. ([britishrema.co.uk](https://britishrema.co.uk/powder-processing-equipment/mills/))
62. Particle Science Technologies - Dec Group
    · Dec Group's particle-science portfolio lists MC DecJet equipment in development, pilot, and production categories. ([dec-group.ch](https://www.dec-group.ch/particle-science-technologies))

63. Strahlmühle - PMT Jetmill

· PMT-Jetmill directly offers spiral-jet equipment for micron and submicron applications. Only commercial classification is used. ([powder-maker.com](https://www.powder-maker.com/anlagen/strahlmuehle/))

64. Jet mill - Comex Group

· Comex directly lists JMX jet-milling equipment and publishes its commercial contact route. ([comex-group.com](https://comex-group.com/powder-processing/jet-mill/))

65. Pharma Product Manufacturing Solutions - Riera Nadeu

· Riera Nadeu's product-bearing business overview lists RINA Jet Mill micronizers for ultrafine applications. (rieranadeu.com)

66. Fluidized Bed Jet Mill - OCX

· NEUMAN & ESSER offers OCX fluidized-bed jet mills for dry ultrafine commercial applications. No operational details are reproduced. ([neuman-esser.com](https://www.neuman-esser.com/en/products-services/mills-classifier-systems/jet-mill-ocx/))

67. About - Superfine

· Superfine LTD describes manufacturing Vortex micronization mills alongside its own processing business. ([superfinemicro.com](https://www.superfinemicro.com/about))

68. Products Lineup - Nisshin Engineering

· Nisshin Engineering's official equipment lineup lists Super Jet Mill as a named commercial offering. ([nisshineng.co.jp](https://www.nisshineng.co.jp/eng/manufacturing/machine/))

69. シングルトラックジェットミル - Seishin

· Seishin directly lists Single Track Jet Mill as ultrafine powder-grinding equipment. ([betterseishin.co.jp](https://www.betterseishin.co.jp/product/stj/))

70. Special Carbon Materials - Kurimoto Co-LAB

· Kurimoto's special-carbon commercial application page names Cross Jet Mill equipment. ([www02.global-kurimoto.com](https://www02.global-kurimoto.com/us/industrial/it-electronic/special-carbon.html))

71. Supersonic Jet Mill Model PJM - Nippon Pneumatic

· Nippon Pneumatic directly markets Supersonic Jet Mill PJM as an ultrafine equipment offering. ([npk-chemical-en.com](https://www.npk-chemical-en.com/products-lineup/pulverizre-jet-mill/model-pjm/))

72. 解砕機・粉砕機 - TOKUJU

· TOKUJU's product catalog lists Nano Grinding Mill within its jet-mill category. ([tokujuk.co.jp](https://www.tokujuk.co.jp/products/pulverizer/))

73. Jet Mill - Promas

· Promas directly offers manufactured and supplied jet-micronizer equipment. The source does not settle the captured Engineering/Engineers contracting-name distinction. ([promasengineers.com](https://www.promasengineers.com/jet-mill-micronizer-manufacturer/))

74. DP Spiral Jet Mill - DP Pulveriser

· DP Pulveriser directly markets DP Spiral Jet Mill equipment across laboratory and production model contexts. ([dppulveriser.com](https://dppulveriser.com/products/dp-spiral-jet-mill))

75. □□□□□□□□□□) □□□ □□) - PAXAA

· PAXAA's catalog lists jet-micronizer categories, including opposed-jet and pharmaceutical offerings. Only equipment-category evidence is used. ([paxaa.com](https://paxaa.com/c/xx.xx/%D8%AC%D8%AA-%D9%xx.xx%DB%8C%D9%xx.xx-%D9%xx.xx%DB%8C%DA%A9%D8%B1%D9%xx.xx%D9%xx.xx%D8%A7%DB%8C%D8%B2%D8%B1))

76. Ürünlerimiz - BRS Engineering

· BRS Engineering's catalog lists jet-mill systems and classifier-mill families as commercial equipment. ([brs-eng.com.tr](https://www.brs-eng.com.tr/urunlerimiz.html))

77. □□ □□□□□ - ALMA
    - ALMA's public product page offers a jet mill under the Arad Lian machinery identity; exact purchasable duty and seller obligations remain unresolved. ([almamachine.com](https://almamachine.com/product/jet-mill/))
78. CLM Air Classifying Mill - Prater
    - Prater directly markets CLM Air Classifying Mill equipment and describes submicron application scope. Superiority claims are not adopted. ([praterindustries.com](https://www.praterindustries.com/products/classifier-mills/classifier-mill/))
79. Air Classifying Mill ACM - RIECO
    - RIECO lists ACM Air Classifying Mill equipment for ultrafine applications across named industrial buyer settings. ([rieco.com](https://www.rieco.com/products/classifying-mills/air-classifying-mill-acm))
80. Impact Classified Mill ICM Series - Mill Powder Tech
    - Mill Powder Tech directly lists the ICM Impact Classified Mill as an ultrafine grinding-system offering. ([mill.com.tw](https://www.mill.com.tw/en/product/xx.xx.html))
81. Fine Grind F10 - Quadro Engineering
    - Quadro directly offers Fine Grind F10 as named ultrafine powder equipment; promotional performance comparisons are not adopted. ([quadro-mpt.com](https://www.quadro-mpt.com/products/fine-grind))
82. Micronizing Fine Grinding - Bepex
    - Bepex's micronizing and fine-grinding portfolio identifies Pulvocron equipment as a named commercial alternative. ([bepex.com](https://www.bepex.com/processes/micronizing-fine-grinding))
83. Pin Mills - Munson Machinery
    - Munson offers CIM centrifugal-impact pin mills for fine and ultrafine commercial applications. ([munsonmachinery.com](https://www.munsonmachinery.com/Pin-Mills/))
84. DemiNo - NOLL
    - NOLL directly offers DemiNo impact-whirl mills for micron-scale commercial applications. ([noll.eu](https://www.noll.eu/muehlen/demino/))
85. Altenburger Maschinen - Jäckering
    - Altenburger Maschinen Jäckering markets ULTRA-ROTOR milling equipment and associated commercial services. ([jaeckering.de](https://jaeckering.de/en/altenburger-maschinen))
86. Machines - Pallmann Industries
    - PALLMANN's machine catalog includes an ultra-fine powder category and named pin-mill families. ([pallmannindustries.com](https://www.pallmannindustries.com/machine/))
87. Product - FREUND-TURBO CORPORATION
    - FREUND-TURBO's catalog lists V Turbo classifier mills and Turbo Mill families for fine commercial products. ([freund-turbo.co.jp](https://freund-turbo.co.jp/en/product/product/))
88. Grinding, Drying and Separating Solutions - POITTEMILL
    - POITTEMILL's product-bearing business overview describes fine and ultrafine grinding equipment and turnkey powder-processing systems. ([poittemill.com](https://poittemill.com/en/home/))
89. Industrial ultrafine powder pulverizing plants - CIMMA
    - CIMMA markets industrial pulverization equipment and plants, including named mill families. ([cimma.it](https://cimma.it/en/pulverization/))
90. Profile - ALPA Powder Technology
    - ALPA describes its own jet-mill, impact-mill, classifier, and ultrafine-equipment business. No regional adoption or performance claim is inferred. ([m.alpapowder.com](https://m.alpapowder.com/about-alpa/profile/))
91. Miyou Group Company - Grinding Mill Manufacturer
    - Miyou's product-bearing business site lists QF fluidized-bed jet mills and agitated bead mills. (millingsupplier.com)
92. Equipos - Disperset
    - Disperset's equipment catalog lists ball and bead mills, including named MB equipment and industrial application categories. ([disperset.com](https://www.disperset.com/equipos))

93. Molinos - Transportadores FADITRA
    - Transportadores FADITRA markets Raymond-type vertical mills for fine and ultrafine rock applications. The catalog does not settle every manufacturing or representation obligation. ([transportadoresfaditra.com.mx](https://transportadoresfaditra.com.mx/molinos))
94. Moinho Turbo ROTEX - Moinhos Meteor
    - Meteor's product page markets ROTEX for dry fine and ultrafine grinding. No current sale or comparative performance is inferred. ([moinhosmeteor.com.br](https://moinhosmeteor.com.br/produtos/moinho-turbo-rotex/))
95. Molino micronizador MZR - Tecnomills SRL
    - Tecnomills directly offers the MZR micronizer for ultrafine grinding under its Argentine business identity. ([tecnomills.com.ar](https://www.tecnomills.com.ar/molino-micronizador--mzr-dd83355.html))
96. Moinho Martelo para Moagem Ultra Fina - Lucato
    - Lucato's catalog directly lists a hammer mill labeled for ultrafine grinding. ([lucato.ind.br](https://www.lucato.ind.br/siten/index.php/products/product/xx.xx))
97. Molinos Pulverizadores Industriales - INMIMEX
    - INMIMEX markets industrial pulverizers and micronization equipment. Exact offering suitability is not inferred from the broad description. ([inmimex.com](https://www.inmimex.com/equipos/molinos-pulverizadores))
98. Vertical Pulverizer - CPM
    - CPM markets IDAH Vertical Pulverizer equipment for ultrafine powder applications in pet food and aquafeed. ([onecpm.com](https://onecpm.com/product/vertical-pulverizer/))
99. SWFL Series Pulverizer - FAMSUN
    - FAMSUN directly lists SWFL Series pulverizer equipment under an ultra-fine product heading. Application equivalence to unrelated technologies is not established. ([en.famsun.com](https://en.famsun.com/technology_products/swfl_series_pulverizer.html))
100. SWFL ultrafine pulverizer - Zhengchang
    - Zhengchang directly offers a named SWFL ultrafine pulverizer. ([en.zcme.com](https://en.zcme.com/index.php/productinfo/xx.xx.html))
101. Pet Food Particle Size Reduction Grinder in Argentina - RICHI
    - RICHI's supplier-authored pet-food case identifies SWFL equipment in that purchasing context. The unnamed customer and delivery are not independently confirmed. ([pellet-richi.com](https://www.pellet-richi.com/single-pellet-machine-cases/pet-food-particle-size-reduction-grinder-in-Argentina.html))
102. Commercial Coffee Grinders - Modern Process Equipment
    - Modern Process Equipment's coffee portfolio lists industrial roller-style equipment and an Ultrafine & Turkish application category. No cross-technology equivalence is inferred. ([mpechicago.com](https://www.mpechicago.com/coffee-grinding-equipment/))
103. PROBAT acquires Royal Duyvis Wiener
    - PROBAT's March xx.xx 2024 announcement identifies acquisition of Royal Duyvis Wiener and its cocoa and chocolate equipment business. ([probat.com](https://www.probat.com/newsroom/news/probat-acquires-royal-duyvis-wiener-and-significantly-strengthens-its-position-in-the-cocoa-and-chocolate-sector/))
104. Equipos de Proceso para la Industria Química y Alimenticia - Alumcraft
    - Alumcraft's product-bearing site identifies Alumcraft Argentina S.A., chemical and food processing equipment, and Chocomill. ([alumcraft.com.ar](https://www.alumcraft.com.ar/nuevaweb/))
105. Design, manufacture and assembly of agro-industrial plants - SuperBrix
    - SuperBrix's product-bearing overview lists agroindustrial plant applications including micronization and advertises associated services. ([superbrix.com](https://superbrix.com/en/inicio-english/))
106. Molienda - Industrias Tomadoni
    - Industrias Tomadoni publishes a milling-equipment portfolio under its own business identity. ([tomadoni.com](https://tomadoni.com/molienda/))

107. FlexMill-Lab NanoWitt - Frewitt
· Frewitt's commercial NanoWitt brochure identifies laboratory wet-nanomilling bead equipment and the captured company name. ([frewitt.com](https://frewitt.com/media/b4zf4bmy/frewitt-flexmill-lab-nw-en.pdf))
108. Планетарные мельницы «Активатор»
· Aktivator's product page offers planetary mills under its own equipment identity; commercial equivalence is not inferred. ([activator.ru](https://activator.ru/PMs.html))
109. Planetary Disc Mill ELM-049 - Elipslab
· Elipslab offers ELM-xx.xx Planetary Disc Mill equipment for mineral and material preparation, supporting the included laboratory comparison. ([elipslab.com](https://elipslab.com/en/products/mining/planetary-disc-mill-elm-xx.xx/))

18.5. Benchmarking Analysis, 2025

[redacted] Metso advertises service packages from basic support to EPC, while Glencore Technology distinguishes local-contractor installation from turnkey delivery. A buyer seeking delegated coordination should require acceptance, retained site work, escalation, and remedies in the offer; a buyer able to manage those interfaces can instead retain a narrower scope.

Published support commitments differ in ways that matter independently of mill technology. RETSCH offers individual services and service plans but limits plan availability by country. [redacted]

Commercial currentness is separate from catalog existence. [redacted] Microtec Development & Holdings describes UTM and a licensing platform, but the current rights and contracting perimeter remain material verification questions.

[redacted]

[redacted] Tsukishima Kikai Co., Ltd. lists milling and vibrating equipment, Grenzebach describes fine-grinding and integrated powder systems, JEHMLICH GmbH documents REKORD fine grinding, and Bauermeister describes soybean equipment with classifier combinations. These are relevant supplier inquiries, but the precise offered duty must be established before treating them as equivalent alternatives.

Wet-mill catalogs also require configuration-specific qualification. [redacted] Co.'s supplier profile names Mechstar and Super Dyna equipment, but its relationship to Daesung Machinery Co., Ltd. and continuing model-specific availability remain unresolved.

Regional attribution should be tested independently of familiar product names. [redacted] These routes can contribute communication, installation, or acquisition flexibility, but buyers must establish the manufacturer mandate and local remedies rather than infer them from representation or rental marketing.

Supplier identity and attribution can prevent an otherwise plausible local comparison. Sandreck Mining Machinery (Zimbabwe) Co., Ltd.'s page uses differing Sandreck/Santak and LVM/LUM descriptions, leaving the manufacturer and model relationship unresolved. [redacted]

[redacted] ZENITH's exact offering and control relationship likewise require confirmation. These limitations prevent assigning firm substitutability, not participation or absence.

Regional jet-equipment inquiries retain narrower distinctions. ▪▪▪▪▪ ▪▪▪▪▪ ▪▪▪▪▪▪▪ ▪▪▪ ▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪ ▪▪ ▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪ ▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪ ▪▪ ▪▪▪▪ ▪▪▪▪ ▪▪▪▪ ▪▪▪▪ ▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪ ▪▪▪▪▪▪▪▪▪ ▪▪▪▪ ▪▪▪▪ ▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪ ▪ ▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪ ▪▪▪▪▪▪▪▪ ▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪ ▪▪▪▪▪ ▪▪▪▪▪▪▪▪ ▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪ ▪▪ ▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪ ▪▪▪▪ ▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪ ▪▪▪ ▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪ ▪▪▪ ▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪ ▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪▪ ERSEL Heavy Machinery and the Maelgwyn representations require a customer-specific division of manufacturing, technology, support, and remedy responsibilities.

▪▪▪▪▪▪▪ ▪▪▪▪▪ ▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪ ▪▪ ▪▪▪▪ ▪▪ ▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪ ▪▪▪ ▪▪▪ ▪▪ ▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪ ▪▪▪▪ ▪▪▪▪ ▪▪▪▪▪▪▪ ▪▪▪ ▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪ ▪▪▪▪▪ ▪▪▪▪▪ ▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪▪▪ Those records do not establish exclusivity or disprove AAAmachine's authority, but they do not resolve continuity between the product names or its current mandate. Purchasers should obtain manufacturer confirmation of the exact equipment, territory, seller authority, warranty, and support before treating the channel listing as a deliverable offer.

Application breadth should not become a false equivalence benchmark. SuperBrix's micronization application area, Alumcraft Argentina S.A.'s Chocomill and processing equipment, and Industrias Tomadoni's milling catalog require a named milling scope for comparison with specialized food and feed equipment. ▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪ ▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪ ▪▪▪▪▪▪▪▪ ▪▪▪ ▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪ ▪▪▪▪ ▪▪ ▪▪▪ ▪▪▪▪▪▪▪ ▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪ ▪▪ ▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪ ▪▪▪ ▪▪▪▪▪▪▪▪

Sources & Evidence

1. IsaMill - About
   - The modular and turnkey offerings support responsibility-qualified package benchmarking. ([glencoretechnology.com](https://www.glencoretechnology.com/en/technologies/isamill/about))
2. Technical Service - RETSCH
   - Country eligibility and differentiated service arrangements support benchmarking local commitments rather than assuming uniform international support. ([retsch.com](https://www.retsch.com/contact-services/technical-service/))
3. HIGmill Plant - Metso
   - Published delivery and service scope supports benchmarking accepted package responsibility separately from equipment identity. ([metso.com](https://www.metso.com/portfolio/higmill-plant/))
4. Pulverisette 7 Planetary Micro Mill Premium Line - FRITSCH Milling and Sizing
   - The page publishes a U.S. technical-service route for maintenance, repairs, warranty inquiries, and original spare parts. ([fritsch-us.com](https://fritsch-us.com/instrument-specifications/pulverisette-xx.xx-premium-line/))
5. SWECO Vibrating Screen Parts - Warranty & Service
   - SWECO publishes an equipment warranty beginning at original shipment, subject to stated conditions. Negotiated terms can differ. ([sweco.com](https://www.sweco.com/separation/sweco-parts.php))
6. ProXES Support - Commissioning, setup, and maintenance
   - ProXES advertises installation, maintenance, repair, and documentation support and limits its identified qualification-support offering to FrymaKoruma. ([proxes.com](https://www.proxes.com/en/service/support))

7. Products - Comminution - AAAmachine
   · AAAmachine lists JOKOH Nano Jet Pul as wet-jet equipment, but the listing does not establish continuity with NANO GENESIS/NAGS or its current manufacturer mandate. ([aaamachine.com](https://www.aaamachine.com/Products1_Comminution.html))
8. Distributors - JOKOH
   · JOKOH lists other U.S. homogenizer distributors. This establishes manufacturer-listed routes without proving exclusivity or disproving AAAmachine authorization. ([jokoh.com](https://jokoh.com/en/distributors/))
9. After-Sales Service and Technical Support - Boyee
   · Boyee advertises installation, parts, maintenance, and global service, while attendance assurances use provincial customer categories rather than destination-specific overseas obligations. ([boyeemill.com](https://www.boyeemill.com/after-sale.html))
10. Vertical Stirred Mill - CITIC HIC
    · The CSM offering and customer references establish a relevant inquiry, not the exact ultrafine obligation of a particular purchase. ([citicheavyindustries.com](https://www.citicheavyindustries.com/vertical-stirring-mill.html))
11. Weir 2025 Full Year Results Presentation
    · Weir's results presentation identifies an ENDURON vertical stirred mill, a fine-grinding role, and receipt of an initial order; it does not expressly establish ultrafine duty. ([global.weir](https://www.global.weir/globalassets/investors/reporting-centre/2026/full-year-results-2025/weir-2025-full-year-results-presentation.pdf))
12. □□ □□□□□ - ALMA
    · The named jet-mill listing supports a supplier inquiry without settling the registered seller, named ultrafine configuration, or destination obligations. ([almamachine.com](https://almamachine.com/product/jet-mill/))
13. Industrial ultrafine powder pulverizing plants - CIMMA
    · The broad plant proposition does not settle the precise milling duty and contractual inclusions of a particular model offer. ([cimma.it](https://cimma.it/en/pulverization/))
14. Equipos de Proceso para la Industria Química y Alimenticia - Alumcraft
    · The broad processing and Chocomill proposition supports an inquiry, not a settled named ultrafine milling obligation for every proposal. ([alumcraft.com.ar](https://www.alumcraft.com.ar/nuevaweb/))
15. Design, manufacture and assembly of agro-industrial plants - SuperBrix
    · The application overview does not itself identify the named milling duty and contractual inclusions of a particular ultrafine equipment purchase. ([superbrix.com](https://superbrix.com/en/inicio-english/))
16. Molienda - Industrias Tomadoni
    · The milling catalog supports a supplier inquiry while leaving the named ultrafine duty and contract scope to be established. ([tomadoni.com](https://tomadoni.com/molienda/))
17. About Us - INFOR Intelligent Equipment
    · INFOR identifies Guangdong INFOR Intelligent Equipment Co., Ltd. and describes installation, customer acceptance, warranty, and continuing service stages. Individual territorial obligations remain contractual. ([inforintl.com](https://www.inforintl.com/about/))
18. Ultra fine range of machines - Nippon Coke & Engineering
    · Nippon Coke & Engineering's equipment catalog identifies SC Mill and Attritor offerings. The catalog does not settle a present destination-specific offer. ([nc-kakouki.co.jp](https://www.nc-kakouki.co.jp/en/chemical/catalog/pdf/gene_e.pdf))
19. Micros MIC - Nara Machinery
    · Nara's product material names Micros MIC wet-milling equipment. The product description does not itself establish a current territorial delivery commitment. ([nara-m.co.jp](https://www.nara-m.co.jp/media/en-products/a86))

20. Mining Industry Overview - General Kinematics
    · General Kinematics' historical mining brochure names VIBRA-DRUM grinding equipment. It is not used to establish current equipment availability. ([generalkinematics.com](https://www.generalkinematics.com/wp-content/uploads/2015/xx.xx/GKM-xx.xx-Industry-Overview.pdf))
21. Air Products to Feature PolarFit Cryogenic Solutions at PTXi 2012
    · Air Products' April xx.xx 2012 announcement includes PolarFit ultrafine grinding equipment. Historical promotion does not settle continuing equipment availability or responsibilities. ([investors.airproducts.com](https://investors.airproducts.com/news-releases/news-release-details/air-products-feature-polarfittm-cryogenic-solutions-help))
22. TEST실 장비 보유 현황 - NANOINTECH
    · NANOINTECH publishes an equipment inventory with nano-mill families. An inventory does not independently establish an active sales offer. ([ballmill.com](https://ballmill.com/test-equipment/))
23. Microtec Development & Holdings - Micronization Technology
    · Microtec Development & Holdings' product-bearing overview names UTM Turbo Mill and describes a technology-licensing platform. It does not settle every current right or contracting organization. (microtecdhus.com)
24. Industrial Business: Technologies - Tsukishima Kikai
    · Tsukishima's industrial catalog lists milling and vibrating-mill categories without resolving a named purchase-specific ultrafine duty. ([tsukishimakikai.co.jp](https://www.tsukishimakikai.co.jp/en/industry/technology/))
25. Thermal & Mechanical Process Technology - Grenzebach
    · Grenzebach offers fine-grinding and integrated powder-processing systems. The broad portfolio does not resolve the exact ultrafine obligation of a named purchase. ([grenzebach.com](https://www.grenzebach.com/en-us/markets/process-technology/))
26. REKORD Fine Grinding - JEHMLICH
    · JEHMLICH's REKORD brochure establishes named fine-grinding equipment, not universal ultrafine-duty equivalence. ([jehmlich.info](https://www.jehmlich.info/en/assets/downloads/prospekte_en/JEHMLICH_REKORD_212-630_EN.pdf))
27. Soybean Grinding - Bauermeister
    · Bauermeister's soybean application page names Gap Mill and Universal Mill equipment with classification combinations. The application page does not settle every named ultrafine duty. ([bauermeisterusa.com](https://bauermeisterusa.com/soybean-grinding/))
28. RH-Series Horizontal Mills - CB Mills
    · CB Mills offers RH horizontal media equipment from laboratory through production contexts. The page does not itself establish identical finished-duty obligations to another mill. ([cbmills.com](https://cbmills.com/media-grinding-mills-folder/rh-horizontal-media-grinding-mill))
29. Basket Mill Model M850 - Myers Mixers
    · Myers Mixers directly lists M850 basket-mill equipment, supporting participation but not an identical ultrafine duty to all wet-media offers. ([myersmixers.com](https://myersmixers.com/product/bm850-basket-mill/))
30. Machinery for the Chemical Industry - Lleal
    · Lleal's chemical-industry catalog lists ROTOMILL horizontal and immersion mills. Exact ultrafine purchase qualification remains offering-specific. ([lleal.com](https://www.lleal.com/en/chemistry/))
31. Horizontal and Vertical Grinding Mill Machines - Sunin
    · Sunin lists SGM horizontal and vertical grinding equipment under its own business identity. The catalog does not establish a common duty with other wet mills. ([sunin-machine.com](https://www.sunin-machine.com/en/))

32. ケムテック事業部 - Hiroshima Metal & Machinery

· Hiroshima Metal & Machinery's official Chemtech division page establishes a commercial bead-mill business. Named purchase-specific ultrafine qualification remains unresolved. ([hiroshimamm.com](https://www.hiroshimamm.com/industries/chemtech/))

33. Daesung Chemical Machinery Ind. Co. - Public Supplier Profile

· Daesung Chemical Machinery's public supplier profile lists Mechstar jet equipment and Super Dyna wet-milling equipment. It does not resolve its relationship to Daesung Machinery Co., Ltd. ([dsmill.gobizkorea.com](https://dsmill.gobizkorea.com/mini/site/miniSiteMain.do?domn_id=dsmill))

34. Equipamentos - CMC do Brasil

· CMC do Brasil lists SuperMil Plus and Batch Mill equipment under its Brazilian commercial identity. The catalog does not establish its ownership or contract relationship with the U.S. supplier. ([cmcmilling.com.br](https://cmcmilling.com.br/equipamentos/))

35. Hosokawa Micron Powder Systems - Polimin

· The representation statement supports a local equipment inquiry while leaving current authority and purchase-specific obligations unresolved. ([polimin.com](https://www.polimin.com/pages/hosokawa-micron-powder-systems))

36. Used Machinery - Klausen Process Machinery

· The stated equipment-and-service role does not establish manufacturer-confirmed authority or every customer's local remedies. ([kpm.com.au](https://kpm.com.au/used-machinery/))

37. Equipamentos para Micronização - Micron

· The named equipment catalog supports a Brazilian acquisition inquiry without settling original manufacture, individual rental terms, or remedies. ([micronizacao.com.br](https://www.micronizacao.com.br/produtos))

38. Ultrafine Vertical Grinding Mill - Sandreck

· Sandreck's page uses LVM and LUM model descriptions and attributes development to Santak within a Sandreck-branded listing. The conflict leaves OEM and model relationships unresolved. ([strkmac.com](https://strkmac.com/Grinding-Mill/Ultrafine-Vertlcal-Mill.html))

39. SME Machinery

· SME Machinery's product-bearing site offers bead/pearl mills and advertises South African delivery, installation, and support. A named ultrafine configuration and original equipment responsibility remain unestablished. (smemachinery.co.za)

40. Grinding Mill Product Catalog - Zhejiang Jacan

· Zhejiang Jacan's official catalog identifies the company and lists superfine and related grinding equipment. A current named purchase offer is still needed for configuration-level comparison. ([cnmillfactory.com](https://www.cnmillfactory.com/product/))

41. Kaps Engineers - Vadodara Chamber of Commerce & Industry

· The Vadodara Chamber company record identifies Kaps Engineers and lists ultrafine and classifier-mill categories. It does not settle a named current equipment offer. ([vccivadodara.org](https://vccivadodara.org/frontend/company_detail?company_id=xx.xx&page=xx.xx))

42. Weifang Zhengyuan Powder Engineering - Jet Mill and Impact Mill

· The Zhengyuan-branded site publishes a jet- and impact-mill portfolio and company contacts. Its authoritative domain-to-company binding remains unresolved rather than assumed. ([chinamicronizer.com](https://www.chinamicronizer.com/))

43. Nano Sakhtar Arash - □□□ □□□□□□ □□□□ □□□□

· Nano Sakhtar Arash's public site carries the captured identity. Identity alone does not settle a current purchasable ultrafine offering or its obligations. (nanosakhtararash.ir)

44. Samat Sanat Sepahan Co. - Company Profile

· Samat Sanat Sepahan's company-authored profile describes an Iranian micronization-equipment business including ultrafine dry-grinding equipment. It does not settle a named customer offer or registered counterparty. ([ae.linkedin.com](https://ae.linkedin.com/company/samat-sanat-sepahan-co))

45. Ürünlerimiz - Tunç Mikronize

· Tunç Mikronize's portfolio lists micronized grinding and pin-mill families. The precise named ultrafine purchase duty remains unresolved. ([tuncmikronize.com](https://tuncmikronize.com/urunlerimiz.php))

46. Özyurt Makine - Company Catalog

· Özyurt Makine's commercial catalog lists an Ultra Fine Grinding Mills family. The catalog does not allocate manufacturing, integration, or licensing responsibility for a purchase. ([ozyurtmakine.com.tr](https://ozyurtmakine.com.tr/wp-content/uploads/2023/xx.xx/ozyurt_makine_catalog.pdf))

47. Ro-Star

· The collaborative offering supports verifying technology, manufacture, support, and remedy responsibilities separately; no completed customer placement is inferred. ([ro-star.tech](https://www.ro-star.tech/))

48. NANO GENESIS - JOKOH

· JOKOH directly markets NANO GENESIS using NAGS designations. The manufacturer page does not establish continuity with the Nano Jet Pul channel designation. ([jokoh.com](https://jokoh.com/en/products/nano-genesis/))

19. Company Profiles

19.1. Metso

Metso combines control of a branded mineral-grinding offering with a choice of delivery responsibility. It completed the acquisition of Swiss Tower Mills Minerals on April xx.xx 2025, bringing its existing HIGmill supplier relationship inside the organization. ■■■ ■■■■■■■■■■ ■■■■■■■■■■■■ ■■■■■■■ ■■■■ ■■■■■ ■■■■■■■■■ ■■■■■■■ ■■■■■ ■■■■■■■ ■■■■■■■■■■ ■■■■■■■ ■■■■■■■■■ ■■■ ■■■■■ ■■■ ■■■■■■■■■■ ■■■■■■■ ■■■■■ ■■ ■■■■■■■■■■■ ■■■■■■■ ■■■■■■■■■■■■■ ■■■ ■■■■ ■■■■■■■■■

■■■■■■■ ■■■■■ ■■■■■■■■ ■■■ ■■■■ ■■■■ ■■■■■■■■■■■■■■ ■■■■■■■■■ ■■■■■■■■ Metso advertises installation and commissioning packages ranging from basic assistance to engineering, procurement, and construction, alongside spare parts and asset-support services. These are alternative commercial scopes, not evidence that every order transfers complete installation responsibility.

A mining purchaser seeking fewer supplier interfaces can request broader delivery accountability, provided the contract identifies retained site work, acceptance obligations, remedies, and local support. ■ ■■■■■■■■ ■■■■■■■■■ ■■■■■■■■ ■■■■■■■ ■■ ■■■■■■■■■■■ ■■■■■ ■■■ ■■■■■■■■ ■■■ ■■■■■■ ■■■■■ ■■■■■■■■■■■ The trade-off is between delegated coordination and greater customer control; ownership integration alone does not settle the project's responsibility boundary.

Sources & Evidence

1. Metso Completes Acquisition of Swiss Tower Mills Minerals
   - Metso completed the Swiss Tower Mills Minerals acquisition on April xx.xx 2025. The announcement identifies its preceding exclusive HIGmill sales rights, supporting the conclusion that the historical identities are not independent alternatives for that branded relationship. ([metso.com](https://www.metso.com/corporate/media/news/2025/xx.xx/metso-strengthens-its-position-as-a-leading-comminution-technology-and-services-supplier-for-mining-industry-completes-acquisition-of-swiss-tower-mills-minerals/))
   - Company verification: Metso announced completion of its Swiss Tower Mills Minerals AG acquisition on April xx.xx 2025, following regulatory approvals.
   - Company verification: The announcement connects HIGmill, Vertimill and SMD to Metso's commercial stirred-milling portfolio, including ultrafine applications.
2. HIGmill Plant - Metso
   - HIGmill Plant combines a mill and pre-engineered auxiliary modules. Metso advertises installation and commissioning packages from basic support to EPC, OEM parts, and asset-support services. Project-specific responsibility allocation remains a contractual question. ([metso.com](https://www.metso.com/portfolio/higmill-plant/))
3. Stirred mills - for wet grinding - Metso
   - Company verification: Metso's stirred-mill portfolio lists HIGmill and Stirred Media Detritor for fine and ultrafine mineral grinding.
   - Company verification: The page documents equipment supply and associated parts and services under the Metso identity.

4. Energy efficient solutions in comminution - Metso
   · Company verification: Metso states that it has acquired Swiss Tower Mills Minerals AG and that STM is now part of Metso.
   · Company verification: The page associates STM with HIGmill, which Metso states it has exclusively sold and serviced.

19.2. NETZSCH Group

[illegible] This makes NETZSCH an equipment-manufacturing participant within the same technology relationship, not a separate competing IsaMill technology source. Buyers should identify which organization confirms each equipment, integration, and support obligation.

The battery-industry route uses a different division of responsibilities. [illegible] A buyer considering it should require an identified lead contractor and explicit responsibility for package interfaces before relying on the turnkey description.

The dry-grinding portfolio also includes the SecoMy S Fine Cutting Mill, marketed for cuttable materials and ultrafine grinding. This adds a distinct purchasing context rather than extending IsaMill's mineral-grinding proposition to every material. [illegible]

Sources & Evidence

1. IsaMill - NETZSCH Grinding & Dispersing
   · NETZSCH assigns IsaMill manufacturing and mill-design expertise to itself and identifies Glencore Technology with engineering, installation, and commissioning support. This establishes complementary roles, not separate competing IsaMill technologies.
   ([grinding.netzsch.com](https://grinding.netzsch.com/en/products-and-solutions/wet-grinding/isamill/))
2. NETZSCH and MESNAC Partner to Deliver Turnkey Solutions for Battery Industry
   · The June xx.xx 2025 announcement combines NETZSCH grinding and dispersing with MESNAC INTELLIGENT automation and system integration for battery-industry offerings. It describes a partnership and intended coordinated delivery, not a completed customer project or negotiated liability allocation.
   ([grinding.netzsch.com](https://grinding.netzsch.com/en/news/2025/netzsch-and-mesnac-partner-do-deliver-turnkey-solutions-for-battery-industry))
3. SecoMy S Fine Cutting Mill - NETZSCH Grinding & Dispersing
   · The product page identifies SecoMy S within the dry-grinding portfolio, describes a fine-cutting offering for cuttable materials, and markets ultrafine grinding. Only commercial classification is used.
   ([grinding.netzsch.com](https://grinding.netzsch.com/en/products-and-solutions/dry-grinding/seco-my-s-fine-cutting-mill/))

4. Who we are - NETZSCH Group
   - NETZSCH identifies Grinding & Dispersing as a business unit within NETZSCH Group, establishing the organizational connection used in the profile. ([netzsch.com](https://www.netzsch.com/en/company))
   - Company verification: NETZSCH identifies itself as a family-owned German machinery enterprise.
   - Company verification: Its corporate page places the group's business units under Erich Netzsch B.V. & Co. Holding KG and identifies Grinding & Dispersing as one of those units.
5. Business Unit Grinding & Dispersing - NETZSCH
   - Company verification: NETZSCH's business-unit page connects Grinding & Dispersing to the family-owned group.
   - Company verification: It describes a commercial dry-grinding mill portfolio extending into submicron applications.
6. s-Jet Steam Jet Mill - NETZSCH Grinding & Dispersing
   - Company verification: NETZSCH Grinding & Dispersing lists the s-Jet Steam Jet Mill as a commercial dry-grinding product.
   - Company verification: The offering is expressly associated with submicron and ultrafine grinding.
7. Our History - NETZSCH Group
   - Company verification: NETZSCH's corporate history identifies Grinding & Dispersing as a group business and records the establishment of NETZSCH Feinmahltechnik.
   - Company verification: The history documents the group's international development, including businesses in the United States, Brazil and France.
8. ANDRITZ Enters Partnership with NETZSCH-Feinmahltechnik for Alternative Protein Production Solutions
   - Company verification: The partnership announcement establishes NETZSCH's named commercial equipment role within the ANDRITZ collaboration.

19.3. Hosokawa Micron Corporation

Hosokawa Micron Corporation connects buyers to a group portfolio that includes Hosokawa Alpine's grinding and classifying business. ■■■ ■■■ ■■■■■■■ ■■■■■■■■■ ■■■■■■■■ ■■■■■■■■■■■■■■■ ■■■ ■■■■■■■■■■■ ■■■ ■■ ■■■■■■■■■■ ■■■■■■■■■■ The relevant capability is therefore a documented group offering; the organization responsible for the quotation, delivery, and support still needs to be identified for each purchase.

■■■■■■■■ ■■■■■■■■ ■■■■■■■■ ■■■■ ■■■■■■■■ ■■■■■■■■■ ■■ ■■ ■■■■■■■■ ■■■■■■■■■■■■■■ ■■■■■■■■■■■■■ It illustrates engineering delegation rather than separately established mill acquisition. Buyers assessing that coordination role should identify the actual equipment supplied and the site-work responsibilities retained; the case does not establish identical scope or remedies for another project.

Alpine also advertises rental equipment, overhauled Originals machinery, and buy-back. These create acquisition alternatives to a new-equipment purchase when an appropriate machine and support package are offered. ■■■■■■ ■■■■■■ ■■■■■■■ ■■■ ■■■■■■ ■■■■■■■■■ ■■■■■■ ■■■■■■■■■ ■■■■■■■■■■ ■■■■■■ ■■■ ■■■■■■ ■■■■■■■■■■■ ■■■■■■■■■ ■■ ■■■■■■■■■ ■■■■■ ■■■ ■■■■■ ■■■■■■■■■■ ■■ ■ ■■■ ■■■■■■ ■■■ ■■■■■■■ ■■■■■ ■■■■■■■■■■■ ■■■■■■■■■■■ ■■■■■■■■■■■ ■■ ■■■■■■■■■■■ ■■■■■■■■■■■■ ■■■■■■■ ■ ■■■■■■■■ ■■■■■■■

Sources & Evidence

1. Rental and Used Machines - Hosokawa Alpine
   - Hosokawa Alpine advertises rental, overhauled Originals machinery, and buy-back.

2. Customised system planning from Hosokawa Alpine
   - The Nobelmin case supports an engineering-delegation example involving an existing installation, not independently established new-mill adoption.
3. Hosokawa Micron Group - HOSOKAWAMICRON CORPORATION
   - Hosokawa Micron Corporation identifies Hosokawa Alpine within its group powder-processing activities.
4. Isolator - HOSOKAWAMICRON CORPORATION
   - The corporate portfolio identifies HOSOKAWA/ALPINE AFG opposed-jet and AS spiral-jet offerings.
   - Company verification: Hosokawa Micron Corporation's own product materials list HOSOKAWA/ALPINE milling systems.
   - Company verification: The page describes group offerings spanning development and commercial-production equipment.
5. AFG Fluidised Bed Jet Mill | Hosokawa Alpine
   - Company verification: Hosokawa Alpine lists the AFG fluidized-bed opposed jet mill.
   - Company verification: The product page identifies ultrafine mineral-powder and specialty-material applications.
6. Hosokawa Micron Powder Systems - Polimin
   - Company verification: Polimin describes its representation and application of Hosokawa fine and ultrafine milling equipment in Chile.
   - Company verification: This is evidence of a publicly stated channel relationship, not a dated installation or sale.
   - Company verification: Polimin's equipment page identifies a Chilean commercial route for Hosokawa offerings.

19.4. Union Process

[illegible] Its SD-xx.xx Laboratory Attritor is advertised for wet or dry grinding and continuous or batch service, with pilot and small-production roles also identified. The same page refers to accessories and options, so the broad capability description should not be treated as proof that every quoted machine includes every mode.

For a buyer serving changing project requirements, an appropriately configured SD-xx.xx may consolidate equipment purchasing. The prerequisite is a written quotation that identifies the required processing states, operating modes, included accessories, and applicable conformity documentation. [illegible]

Union Process's corporate brochure separately describes laboratory and production equipment, including small-media mills for submicron applications, and its toll-processing business. [illegible]

Sources & Evidence

1. Dry Batch or Continuous Laboratory Mills - Union Process

   · Union Process advertises SD-xx.xx for wet or dry, continuous or batch service and identifies pilot and small-production roles. Accessories and options are separately referenced, supporting configuration-specific purchasing rather than assumed universal inclusions. ([unionprocess.com](https://unionprocess.com/mills/dry-attrition-mills/dry-batch-or-continuous-laboratory-mills/))

2. The Evolution of Milling Technology - Union Process

   · Union Process's corporate brochure identifies laboratory and production equipment, small-media mills for submicron applications, and a separately described toll-processing business. These establish different equipment and service relationships. ([unionprocess.com](https://unionprocess.com/wp-content/uploads/2025/xx.xx/UP-Corp-Brochure-xx.xx-2024.pdf))

   · Company verification: Union Process's corporate brochure identifies Union Process, Inc. and its Akron business location.

   · Company verification: It documents production milling equipment and small-media mill offerings for submicron and nanoscale particles, supplementing the previously captured SD Series evidence.

3. Dry Batch Or Continuous Production Mills - Union Process

   · Company verification: Union Process lists SD Series dry-grinding Attritors for batch and continuous production.

   · Company verification: The product page identifies industrial applications including minerals, pigments, ceramics and metal powders.

19.5. Glencore Technology

Glencore Technology positions IsaMill as a technology package with continuing engineering and support involvement, rather than only a manufactured mill. Its published engineering resources include Australia, Africa, and the Americas. ▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪ ▪▪▪▪▪ ▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪ ▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪ ▪▪▪ ▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪▪▪

The practical purchasing choice is delivery scope. ▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪ ▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪▪ ▪▪ ▪ ▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪ ▪▪▪ ▪ ▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪▪ ▪ ▪▪▪▪▪▪▪ ▪▪▪▪▪ ▪▪▪▪ ▪▪▪▪▪▪▪ ▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪ ▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪ ▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪ ▪▪▪▪▪ ▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪ ▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪ ▪▪▪▪▪ ▪▪▪ ▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪ ▪▪▪▪ ▪▪▪▪▪▪▪▪▪▪▪▪ Regional engineering presence supports a contact route, but does not establish an agreed local service response or project-specific liability.

Sources & Evidence

1. IsaMill - About
   · Glencore Technology describes continuing IsaMill engineering and support involvement, with resources in Australia, Africa, and the Americas. Delivery alternatives include modular supply installed by a local contractor and turnkey grinding-system delivery. Their contractual implications are conditional, not evidence of an individual agreement.
   ([glencoretechnology.com](https://www.glencoretechnology.com/en/technologies/isamill/about))
2. IsaMill - NETZSCH Grinding & Dispersing
   · The IsaMill page independently describes Glencore Technology's engineering, installation, and commissioning support role separately from NETZSCH's manufacturing role. It does not allocate liability under an individual customer contract.
   ([grinding.netzsch.com](https://grinding.netzsch.com/en/products-and-solutions/wet-grinding/isamill/))
3. IsaMill - Glencore Technology
   · Company verification: The IsaMill page identifies Glencore Technology Pty Limited and publishes its Australian business number.
   · Company verification: The commercial page describes named IsaMill customer applications, including Prominent Hill, supporting an established equipment-commercialization role.
   · Company verification: Glencore Technology publicly offers IsaMill for fine and ultrafine mineral-ore grinding.
   · Company verification: The offering addresses mineral-processing industries including copper, lead, zinc and gold.

19.6. Guilin Hongcheng Mining Equipment Manufacturing Co., Ltd.

[redacted] Its portfolio identifies applications involving calcium carbonate, limestone, barite, and other mineral powders, with fillers and additives serving paper, plastics, coatings, rubber, inks, and chemicals. Those downstream uses do not establish that the downstream manufacturer is necessarily the mill purchaser; the relevant prospect is the organization acquiring the mineral-powder equipment.

The company's EPC offering extends beyond the core mill to externally procured auxiliaries, installation, commissioning, and continuing parts and maintenance support. This provides a basis for requesting a milling-package proposal rather than assuming the catalog is limited to standalone equipment. [redacted]

Mineral-powder producers can compare an HLMX equipment offer with a broader package only after the seller defines inclusions, responsibility for externally sourced equipment, local service, and remedies. [redacted] Promotional efficiency claims should not substitute for agreed commercial commitments.

Sources & Evidence

1. HLMX Superfine Grinding Mill
   - Guilin Hongcheng markets HLMX for ultrafine nonmetallic-mineral applications and identifies fillers and additives serving paper, plastics, coatings, rubber, inks, and chemicals. The listing establishes an advertised offering, not independently established superiority or local fulfillment. ([hcmilling.com](https://www.hcmilling.com/hlmx-superfine-grinding-mill.html))
   - Company verification: Guilin Hongcheng lists the HLMX Superfine Grinding Mill as an ultrafine vertical-mill offering.
   - Company verification: The page identifies nonmetallic-mineral applications serving filler and additive buyers.
2. EPC powder processing project general contract
   - Hongcheng's EPC page distinguishes core-equipment manufacturing from external auxiliary procurement and advertises installation, commissioning, subsequent parts supply, and maintenance support. The profile treats these as advertised scope, subject to a specific contract. ([hcmilling.com](https://www.hcmilling.com/epc.html))
3. Molino ultrafino vertical HLMX serie para bentonita - GUILIN HONGCHENG Fábrica de molino de rodillos
   - Company verification: Guilin Hongcheng's HLMX product article identifies an ultrafine mill offering and names Peru among export destinations.
   - Company verification: The statement does not identify a Peruvian buyer, shipment date or current local sales.

19.7. SWECO

SWECO provides a vibratory-media alternative through its Vibro-Energy grinding portfolio, marketed for submicron applications. The catalog distinguishes DM wet-or-dry models from M wet-grinding models and lists supporting parts and accessories. ■ ■■■■■ ■■■■■■■■■ ■■■■ ■■■■■■■■■■ ■■■■■■ ■■■■■■ ■■■■■■■ ■■■ ■■■■■■■■■■■■■ ■■■■■■■■ ■■■■■■ ■■■■ ■■■■■■ ■■■■■■■■■■■ ■■■■■■■■■■ ■■■■ ■■■ ■■■■■■■■■■■■ ■■■■ ■■■■■■■

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The catalog supports a model-specific shortlist, not a conclusion of superior performance or universal availability. ■ ■■■■■■■■ ■■■■■■■■ ■■■■■■■ ■■ ■■■■■■■■■■■ ■■■■■ ■■■ ■■■■■■■■■■ ■■ ■■■■■■■■■■■■ The defensible choice combines the required processing-state coverage with confirmed support obligations; catalog accessories should not be presumed included in the mill quotation.

Sources & Evidence

1. Vibratory Grinding and Particle Size Reduction Equipment - SWECO
   - SWECO markets Vibro-Energy mills for submicron applications, distinguishes DM wet-or-dry models from M wet-grinding models, and lists supporting parts and accessories. These distinctions concern offered equipment categories, not operating instructions. ([sweco.com](https://www.sweco.com/separation/grinding-mill.php))
   - Company verification: SWECO lists Vibro-Energy Grinding Mills for particle-size reduction into the submicron range.
   - Company verification: Its catalog includes wet and dry grinding-mill families.

2. SWECO Vibrating Screen Parts - Warranty & Service
   - SWECO's published warranty covers its separation, grinding, and finishing equipment for one year from original shipment, subject to stated conditions. The profile distinguishes that published starting point from negotiated transaction terms. ([sweco.com](https://www.sweco.com/separation/sweco-parts.php))

19.8. RETSCH

[illegible] These offerings support comparison of standalone laboratory instruments; their presence does not establish an industrial-production milling-package capability or equivalence between the two instruments.

[illegible] It also states that service plans are not available in all countries. An international product offering therefore should not be treated as a uniform international service commitment.

[illegible] A service plan may suit a buyer seeking an ongoing support arrangement, while individual services preserve a less extensive commitment. The decision turns on the actual territorial offer and required support scope, not the instrument brand alone.

Sources & Evidence

1. Planetary Ball Mill PM 100
   - RETSCH identifies PM xx.xx as a benchtop planetary ball mill and advertises wet and dry grinding capability. The profile retains the laboratory purchasing context without inferring industrial-production package capability. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/planetary-ball-mill-pm-xx.xx/))
2. Technical Service - RETSCH
   - RETSCH's technical-service page offers individual services and service plans, with installation, repairs, qualification-related services, and differentiated warranty and support benefits. It expressly states that service plans are not available in all countries. ([retsch.com](https://www.retsch.com/contact-services/technical-service/))
3. Emax - High Energy Ball Mill - RETSCH
   - RETSCH expressly markets Emax as a high-energy ball mill for ultrafine grinding. The product listing does not establish equivalence to PM xx.xx or an industrial milling package. ([retsch.com](https://www.retsch.com/products/milling/ball-mills/emax/))
   - Company verification: RETSCH lists the Emax High Energy Ball Mill explicitly for ultrafine and nanoscale grinding.
   - Company verification: The offering is laboratory/sample-preparation equipment rather than an established industrial-production mill.
4. Company - RETSCH
   - Company verification: RETSCH's company page states that RETSCH is part of Verder Scientific within the Verder Group.
   - Company verification: The company history identifies Emax as a RETSCH product.

19.9. Ashizawa Finetech Ltd.

Ashizawa Finetech Ltd. contributes a documented dry-bead-milling proposition alongside its wet-grinding portfolio. ■■■ ■■■■■■■ ■■■■■■■ ■■■■■■■■■ ■■■■■■■■■■ ■■■ ■■■■■■■■ ■■■ ■■■■■■■■■ ■■■■■ ■■■■■■■■■ ■■■■ ■■■■■■■■■■ ■■■■ ■■ ■■■■■■■■■■ ■■■■■■■■■■■■ ■■■■ ■■■■■ ■■■■■■■■■■■■■ ■■■■■■■ ■ ■■■■■ ■■■■■■■■ ■■ ■■■■■■■■ ■■■■■■ ■■■■ ■■■■■■■■ ■■■■ ■■■■■ ■■■■■■■ ■■■■■■■■■■■■ ■■■■■■■■ ■ ■■■■■■■■■■■■■■ ■■■■■■■■■ Catalog coverage does not establish application-specific equivalence with another mill.

■■■ ■■■■■■■ ■■■■■■■■■■■■ ■■■■■■■■■ ■■■■■■■■■■■■■■ ■■■■■■■■ ■■■ ■■■■■■■■ ■■■■■■■■■■■■■■■ Ashizawa describes manufacturing, sales, and maintenance of NETZSCH products in Japan, with NETZSCH providing customer support outside Japan. This is a published commercial-role allocation, not evidence of common equity ownership or a universal warranty covering every product associated with either company.

■■■■■■■■ ■■■■■■■■■■ ■■■■■■■■■■ ■ ■■■■■■■■■■■■■■■ ■■■■■ ■■■■■■ ■■■■■■■■ ■■■■■■■■■■ ■■■■■■■■■■■■■ ■■■■■■■■■■■■ ■■■■■■■■ ■■■■■■■■■■ ■■■■■■■■■■■■ ■■■■■■■■ ■■■■■■ ■■■■■■ ■■ ■■■■■■■■ ■■■■■■■ ■■■■■■■■■■ ■■■■■■ ■■■■ ■■■■■■■■■■■■ ■■■ ■■■■■■■■■■■■ ■■■■■■■■■■■■ ■■ ■■■■ ■■■■■■■■■■■ ■■■■■■■■■■ Coordinated partner support could reduce separate service sourcing, but only where the quotation identifies the responsible seller, destination, maintenance provider, and remedies. Otherwise, the buyer retains an unresolved interface despite the established technical relationship.

Sources & Evidence

1. DRYSTAR SDA1 - Ashizawa Finetech Ltd.
   - Ashizawa markets DRYSTAR as a continuous dry bead mill and describes model roles extending from laboratory use to industrial production. These are supplier portfolio statements, not independently established application outcomes. ([ashizawa.com](https://www.ashizawa.com/en/products/drystar.html))
   - Company verification: Ashizawa publicly offers DRYSTAR dry bead mills for submicron-size grinding.
   - Company verification: The catalog includes laboratory-through-production equipment sizes.
2. About us - Ashizawa Finetech Ltd.
   - Ashizawa identifies wet and dry bead mills within its business and describes a NETZSCH technical partnership, including manufacturing, sales, and maintenance in Japan and NETZSCH customer support outside Japan. The page does not establish common equity ownership or model-specific warranty terms. ([ashizawa.com](https://www.ashizawa.com/en/about_us/index.html))
   - Company verification: The company profile identifies Ashizawa Finetech Ltd. and Japanese business locations.
   - Company verification: It describes a NETZSCH technical partnership and a 1984 bead-mill license agreement.
   - Company verification: It states that Ashizawa manufactures, sells and maintains NETZSCH products in Japan, with NETZSCH providing support outside Japan.
3. Support Outside Japan and Partnership with NETZSCH - Ashizawa Finetech Ltd.
   - Ashizawa's support page expressly allocates manufacturing, selling, and maintenance of NETZSCH products in Japan to Ashizawa and customer support outside Japan to NETZSCH. Applying that description to a particular DRYSTAR purchase requires model- and destination-specific confirmation. ([ashizawa.com](https://www.ashizawa.com/en/support/index.html))

19.10. F.P.S. Food and Pharma Systems s.r.l.

F.P.S. ■■■■ ■■■ ■■■■■■ ■■■■■■■ ■■■■■■ ■■■■■■ ■■■■■■■■■■■■ ■■■■■■■■■ ■■■ ■■■■■■■■■■■ ■■■■■■■ ■■■■ ■■■ ■■■■ ■■■■■■■■ ■■■■■■■■■■ ■■■ ■■■■■■■ ■■■■■ ■■■■■■■■■ ■■■■■■■■■■ ■■■ ■■■■■■■ ■■■■■■■■■■ ■■■■■ ■■■ ■■■■■■■■■ ■■■■■■■■■ ■■■■■■■■ ■■■■■■■■■■ ■■■■■■■■■■■■■■■ ■■■ ■■■■■■■■■■■■■ ■■■■■■■■■■ ■■■ ■■■■■■■ ■■■■■■■■■ ■■■■■■■■■■ ■■■■■■■■■■■ ■■ ■■■■■■■■■■ ■■■ ■■■ ■■■ ■■■■■ ■■■■■■ ■■■ ■■■■■■■■ ■■■■■■■■ ■■■■ ■■■■■■■■ ■■■■■■■■■ ■■■■■■ ■■■ ■■ ■■■■■■■■■■■ ■■ ■■■■■ ■■■■■ ■■ ■■ ■■■■■■■ ■■■■■■■■■ ■■■■■■■■■■■ ■■■■■■■■■

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■■■■■■■■ ■■■■■■■■■■■■■■ ■■■■ ■■■■■■■■ ■■■■■■■■ ■■■■ ■■■■■■■■■■ ■■■■■■■■■■■ ■■■■■■ ■■■■■■■■■ ■■ ■■■■ ■■ ■■■■ ■■■■■■■■■■■■ ■■■■■■■■■■■■■■ ■■■ ■■■■■■■■■■ ■■■■ ■■■■■■■■■ ■■■■■■■■■ ■■■■■■■■■■■ ■■■ ■■■ ■■■■■■■■ ■■■■ FPS's pharmaceutical positioning does not itself establish authorization or acceptance of a particular configuration. Purchasers should resolve the offered package's documentation and responsibility boundary before preferring integrated sourcing over a separately coordinated equipment purchase.

Sources & Evidence

1. 21 CFR 211.63 - Equipment Design, Size, and Location
   - For equipment used in drug-product manufacture, processing, packing, or holding, the provision requires equipment appropriate for its intended use. It does not authorize an FPS brand or establish acceptance of a particular offered package. ([ecfr.gov](https://www.ecfr.gov/current/title-xx.xx/chapter-I/subchapter-C/part-xx.xx/subpart-D/section-xx.xx))
2. Company profile - FPS Pharma
   - FPS identifies its business as customized containment systems and micronization solutions for pharmaceutical and fine-chemical customers. The page identifies F.P.S. Food and Pharma Systems s.r.l. and its Italian operations. ([fps-pharma.com](https://www.fps-pharma.com/company/))
   - Company verification: FPS describes its business as designing and producing micronization equipment and identifies its spiral-jet-mill product history.
   - Company verification: The page identifies F.P.S. Food and Pharma Systems s.r.l. and publishes its Como headquarters and Fiorenzuola d'Arda facility.
3. Products, Page 2 - FPS Pharma
   - FPS lists LaboMill, PilotMill, and ProMill equipment and expressly describes integration of LaboMill-xx.xx and Pm1 jet mills within FPS isolator systems. This supports a specific combined-offering proposition, not universal compatibility or accepted contractual responsibility. ([fps-pharma.com](https://www.fps-pharma.com/product/page/xx.xx/))
   - Company verification: FPS's commercial catalog lists LaboMill, PilotMill, and ProMill spiral-jet-mill equipment.
   - Company verification: The catalog demonstrates equipment offerings extending beyond laboratory-only systems.

19.11. ProXES GmbH

ProXES GmbH offers distinct wet-milling functions under FrymaKoruma rather than one interchangeable equipment proposition. Its portfolio includes toothed colloid mills, corundum stone mills, perforated disc mills, and Co-Ball equipment. ■■■■■■■ ■■ ■■■■■■■■■ ■■■■■■■■ ■■■ ■■■■■■■■■ ■■■■■■■■■ ■■■■■■■ ■■■ ■■■■■■■■■■ ■■■■ ■■■■■■■■ ■■■■■■■■■■ ■■■■■■■■■■■■ ■■■ ■■■■■■■ ■■■■■■■ ■■■■■ ■■■■■■■■ ■■■■■■■■■■■■ ■■■■■■ ■■■■■■■■ ■■■■■■■■■■ ■■■■■■■■■■■■ ■■■■■ ■■■■■■■■■■■ ■■■■■■ ■■ ■■■■■■■■ ■■■■ ■■■■■ ■■■■■■ ■■■■■■

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■■■■■■ ■■■■■■ ■■■■■■■ ■■■ ■■■■■ ■■■■■■■ ■■■■■■■■■■ ■■■■■■ ■■■■■■■■■ ■ ■■■■■■■■■■ ■■■■■■■ ■■■■ ■ ■■■■■■■ ■■■■■■■■■■■■■■■ ■■■■■■■■■ ■■ ■■■■■■■■■■■■■■■ ■■■■■ ■■ ■■■ ■ ■■■■■■■■■■ ■■■ ■■■ ■■■■■■■■ ■■■■■■■■ ■■■■■ ProXES lists organizations across North America, Europe, and Asia, providing commercial contact routes; the quotation must still identify the contracting entity and local service scope. Broader sourcing may consolidate interfaces, while a narrowly specified mill purchase preserves clearer control over adjacent equipment obligations.

Sources & Evidence

1. Advanced wet grinding and emulsification - FrymaKoruma
   · FrymaKoruma lists toothed colloid, corundum stone, perforated disc, and Co-Ball equipment. Its descriptions distinguish ultrafine grinding for Co-Ball from pre-grinding duties for the perforated disc offering and separately list emulsification equipment. ([proxes.com](https://www.proxes.com/en/products/product-brands/frymakoruma))
2. About ProXES
   · ProXES identifies FrymaKoruma as a group brand and describes machine and processing-line offerings. Its corporate contact network lists separate organizations in North America, Europe, and Asia; the network does not identify the counterparty for an individual purchase. ([proxes.com](https://www.proxes.com/en/about))
3. ProXES Support - Commissioning, setup, and maintenance
   · ProXES advertises installation, customer-site or factory maintenance, repair, and documentation services. It expressly limits the identified installation and operational qualification support to FrymaKoruma. No qualification procedures are reproduced. ([proxes.com](https://www.proxes.com/en/service/support))
4. Key know-how for API Wet Milling Technology
   · Company verification: ProXES identifies the MS CoBall mill as a commercial wet-milling offering with submicron particle-size-reduction applications.
   · Company verification: The page identifies ProXES GmbH and its Hameln, Germany address.

19.12. Roytec Global (Pty) Ltd

Roytec Global (Pty) Ltd markets GJM stirred mills for ultrafine applications using BGRIMM-MAT grinding technology. ■■■ ■■■■■■■ ■■■■ ■■■■■■ ■■■ ■■■■■■■■■■ ■■■■■■■■■■■ ■■■■■■■■■■ ■■■■■■■■ ■■■ ■■■■■■ ■■ ■■■■■■■ ■■■■■■■■■■ ■■■ ■■■ ■■■■■■■■■ For African mineral-processing purchasers, the distinctive proposition is a regional

equipment-and-support relationship, not evidence that Roytec owns the underlying mill technology or holds exclusive rights.

[illegible] Its broader service materials identify project management and a dedicated spare-parts function. These commitments make Roytec more than a catalog contact, although their inclusion in an individual GJM purchase remains contractual.

[illegible] Purchasing equipment while retaining separate support coordination remains a different responsibility choice. Named GJM customer placements and negotiated remedies are not established by the general relationship and service descriptions.

Sources & Evidence

1. Products - Attrition Mills - Roytec Global
   - Roytec markets GJM stirred mills for ultrafine mineral applications and identifies BGRIMM-MAT technology. It offers related technology, equipment, service, and spares in Africa, Australia, North America, South America, and Canada. The page does not establish exclusive rights or negotiated customer remedies. ([roytecglobal.com](https://roytecglobal.com/products/products-attrition-mills/))
   - Company verification: Roytec offers GJM impeller/rod stirred mills expressly described for ultrafine grinding.
   - Company verification: The page identifies Roytec Global (Pty) Ltd in South Africa and states that Roytec supplies BGRIMM-MAT grinding technology, equipment, service and spares in Africa.
2. Roytec - Company Profile 2025
   - Roytec's 2025 company profile describes a long-term BGRIMM support agreement covering regrind and attrition technology. It advertises erection and commissioning supervision, aftermarket maintenance, and service-level agreements; these are general company commitments rather than a specific GJM contract. ([roytecglobal.com](https://roytecglobal.com/wp-content/uploads/2025/xx.xx/Roytec-Company-Profile-2025.pdf))
   - Company verification: Roytec's 2025 company profile states that it is privately owned by its directors and managers.
   - Company verification: The profile identifies Johannesburg support operations and a long-term BGRIMM agreement covering regrind and attrition technology.
3. Services - Roytec Global
   - Roytec's service offering includes project management, commissioning and training, and a dedicated spare-parts department. These support its advertised service role without establishing an individual GJM installation or its contractual service allocation. ([roytecglobal.com](https://roytecglobal.com/services/))

19.13. AAAmachine, Inc.

AAAmachine, Inc. offers a multi-manufacturer equipment-contact route. Its comminution catalog attributes jet mills to Nisshin Engineering and Fluid Energy, media mills to Nippon Coke & Engineering, and Nano Jet Pul wet-jet equipment to JOKOH. [illegible]

[redacted]

[redacted] JOKOH's manufacturer portfolio uses NAGS-series designations, while its distributor directory identifies other U.S. homogenizer distributors. Those records do not prove that AAAmachine lacks authorization, but they do not establish continuity between Nano Jet Pul and the manufacturer-listed models or confirm AAAmachine's current mandate.

Buyers can use AAAmachine to identify equipment and coordinate manufacturer inquiries without treating the catalog as an authorized, deliverable offer. Before commitment, obtain manufacturer confirmation of the exact product identity, territory, seller authority, and warranty and support allocation. [redacted]

Sources & Evidence

1. Products - Comminution - AAAmachine
   - AAAmachine's comminution catalog attributes jet mills to Nisshin Engineering and Fluid Energy, media mills to Nippon Coke & Engineering, and Nano Jet Pul wet-jet equipment to JOKOH. It provides an inquiry route, not manufacturer-confirmed authority or product-name continuity. ([aaamachine.com](https://www.aaamachine.com/Products1_Comminution.html))
2. Corporate profile and location - AAAmachine
   - AAAmachine identifies a U.S. business location and describes international equipment marketing and communication assistance with foreign manufacturers. These statements support an intermediary role rather than ownership of represented equipment technologies. ([aaamachine.com](https://www.aaamachine.com/Corporate_profile.html))
3. Products - JOKOH
   - JOKOH's manufacturer portfolio lists NAGS-series homogenizers and provides a manufacturer inquiry route. The inspected portfolio does not establish continuity between those designations and AAAmachine's Nano Jet Pul listing. ([jokoh.com](https://jokoh.com/en/Products))
4. Distributors - JOKOH
   - JOKOH identifies MEIJI CORPORATION and ELMAS GROUP, LLC as U.S. homogenizer distributors. This establishes other manufacturer-listed routes, but does not prove exclusivity, rule out additional intermediaries, or establish AAAmachine's mandate. ([jokoh.com](https://jokoh.com/en/distributors/))
5. Products: Comminution | AAAmachine, Inc.
   - Company verification: AAAmachine, Inc. publishes a comminution catalog naming represented fine-grinding and jet-mill equipment.
   - Company verification: The catalog supports its own specialized equipment-selling channel role.

19.14. Boyee (Shenzhen) Industrial Technology Co., Ltd.

[redacted] Corporate materials identify Shenzhen headquarters and advertise equipment manufacturing and

integrated production-line offerings. These establish supplier participation, not independently demonstrated customer outcomes.

The purchasing distinction is between the named mill and the milling obligations included in a larger proposal. Boyee's broader engineering proposition should not be assumed to place every auxiliary, installation interface, or performance remedy inside an LMM equipment contract. ■■■■■■ ■■■■■■■■■ ■■■■■■■■■■ ■■■ ■■■■■■■■■■ ■■■■■■ ■■■■■■ ■■■■■■■■ ■■ ■■■■■■■■■ ■■■■ ■■ ■■■■■■■■■■■ ■■■■■■■■ ■■■■ ■■■■■■■■■■■■ ■■■ ■■■ ■■■■■ ■■■■■■■■■■■■ ■■■■■■■■■■ ■■■■■

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Sources & Evidence

1. About Boyee - Company Profile
   - Boyee identifies its Shenzhen headquarters and advertises equipment manufacturing, integrated production-line solutions, and whole-plant engineering capabilities for applications including battery materials, inks, coatings, and electronic ceramics. These are company capability claims, not independent customer-outcome evidence. ([boyeemill.com](https://www.boyeemill.com/about.html))
   - Company verification: The official company profile identifies Boyee (Shenzhen) Industrial Technology Co., Ltd. and its Shenzhen headquarters.
   - Company verification: It describes equipment manufacturing and integrated industrial production-line offerings for battery materials, inks, coatings and electronic ceramics.
2. LMM Ultrafine Centrifugal Nano Bead Mill - Boyee
   - Boyee directly markets the LMM Ultrafine Centrifugal Nano Bead Mill family as wet-grinding and dispersion equipment for continuous production, including battery-material, coating, and ink applications. The listing does not establish a negotiated integrated-package commitment. ([boyeemill.com](https://www.boyeemill.com/boyee-lmm-centrifugal-nano-bead-mill.html))
   - Company verification: Boyee directly offers the LMM Ultrafine Centrifugal Nano Bead Mill.
   - Company verification: The named portfolio includes industrial-production models and identifies battery materials, coatings and inks as commercial applications.
3. After-Sales Service and Technical Support - Boyee
   - Boyee advertises a global service team, installation and commissioning, spare parts, and maintenance. Its attendance assurances use provincial customer categories; the page does not establish destination-specific overseas attendance or remedy ownership. ([boyeemill.com](https://www.boyeemill.com/after-sale.html))

20. Companies Covered

Table 484. Global Ultra Fine Grinding Mill Market, Companies Covered

Company
AAAmachine, Inc.
AIMEX
Air Products and Chemicals, Inc.
Aktivator
ALPA Powder Technology
Altenburger Maschinen Jäckering
Alumcraft Argentina S.A.
ANDRITZ
ANIVI
Arad Lian (ALMA)
Ashizawa Finetech Ltd.
Atritor
Aufbereitungstechnologie NOLL GmbH
AVEKA Group
Bakor-Filtr-Keramika
Bauermeister
Bepex International LLC
BGRIMM-MAT
Boyee (Shenzhen) Industrial Technology Co., Ltd.
British Rema Process Equipment Ltd
BRS Engineering
Bühler Group
CB Mills
Chongqing DEGOLD Machine Co., Ltd.
CIMMA Morandotti S.P.A.
CITIC Heavy Industries Co., Ltd.
Classifier Milling Systems
CLIRIK
CMC do Brasil
Comex Group

Table 484 - continued

Company
Coperion
Coperion GmbH
CPM
Cronus Machinery
Custom Milling & Consulting
Daesung Chemical Machinery Ind. Co.
Daesung Machinery Co., Ltd.
Daswell Powder Technology Co., Ltd.
Dec Group
Disperset
Dongguan Vsunny Machinery Co., Ltd.
DP Pulveriser Industries
Eirich Group
Elipslab
EPIC Powder Equipment
ERSEL Heavy Machinery
F.P.S. Food and Pharma Systems s.r.l.
FAMSUN Co., Ltd.
FLSmidth & Co. A/S
Fluid Energy Processing & Equipment Company
FREUND-TURBO CORPORATION
Frewitt manufacturer of machines Ltd.
FRITSCH
Fujian Longyi Powder Equipment Manufacturing Co., Ltd.
General Kinematics Corporation
Glencore Technology
Grenzebach
Guangdong INFOR Intelligent Equipment Co., Ltd.
Guilin Hongcheng Mining Equipment Manufacturing Co., Ltd.
HaF Equipment
Henan Fote Heavy Machinery Co., Ltd.
Hiroshima Metal & Machinery Co., Ltd.

Table 484 - continued

Company
Hockmeyer Equipment Corporation
Hongji Group
Hosokawa Micron Corporation
Houchi Machine
Huyser Industries
Industrias Tomadoni
INMIMEX
INOUE MFG., INC.
Jaygo Inc.
JEHMLICH GmbH
Jiangyin Powder Mill Technology Co., Ltd.
JOKOH
Kaps Engineers
Klausen Process Machinery
Kurimoto, Ltd.
LEADINWAY USA
Liming Heavy Industry
Lleal S.A.U.
LONGLY Group
Lucato
Maelgwyn Mineral Services
Maelgwyn Mineral Services Ltd
Meteor Indústria e Comércio Ltda.
Metso
Micron Locação de Maquinas LTDA
Microtec Development & Holdings
Mill Powder Tech
Miyou Group Company Ltd.
Modern Process Equipment
Molinos Pulverizadores J.A.
MorehouseCowles
Munson Machinery, Inc.

Table 484 - continued

Company
Myers Mixers
Nano Sakhtar Arash
NANOINTECH
Nara Machinery Co., Ltd.
NETZSCH Group
NEUMAN & ESSER
New Concept Projects
NIEMANN
Nippon Coke & Engineering Co., Ltd.
Nippon Pneumatic Mfg. Co., Ltd.
Nisshin Engineering Inc.
Oliver + Batlle
PALLMANN
PAXAA
PMT-Jetmill GmbH
POITTEMILL Group
Polimin
POLYC
Prater Industries
Promas Engineering Pvt. Ltd.
ProXES GmbH
PUHLER TECH Group
Qingdao EPIC Powder Machinery Co., Ltd.
Qingdao Shina Machinery Equipment Co., Ltd.
Qlar
Quadro Engineering
RETSCH
RICHI Machinery
RIECO Industries
Riera Nadeu
Royal Duyvis Wiener B.V.
Roytec Global (Pty) Ltd

Table 484 - continued

Company
RSG Inc.
Samat Sanat Sepahan Co.
Sandreck Mining Machinery (Zimbabwe) Co., Ltd.
SBM Industrial Technology Group
Schold Manufacturing
Seishin Enterprise Co., Ltd.
Shanghai ELE Mechanical and Electrical Equipment Co., Ltd.
Shanghai Farfly Energy Technology Co., Ltd.
Shanghai Polyc Technology Co., Ltd.
Shanghai Root Mechanical and Electrical Equipment Co., Ltd.
SIEBTECHNIK TEMA
SME Machinery
STM Microtec
Sturtevant, Inc.
Sunin Machine Co., Ltd.
SuperBrix
Superfine LTD
SWECO
Sözer Makina
Tecnomills SRL
Tekhnika i Tekhnologiya Dezintegratsii (TTD)
The Jet Pulverizer Company, Inc.
The Nile Machinery Co., Ltd.
The Weir Group PLC
TOKUJU
Transportadores FADITRA
Tsukishima Kikai Co., Ltd.
Tunç Mikronize Makina ve San. Tic. Ltd. Şti.
Ultra Febtech
Union Process
VMA-GETZMANN
VMA-GETZMANN GmbH

Table 484 - continued

Company
Weifang Zhengyuan Powder Engineering Equipment Co., Ltd.
WILHELM NIEMANN GmbH & Co. KG
Willy A. Bachofen AG
ZENITH
Zhejiang Jacan Technology Co., Ltd.
Zhengchang
Özyurt Makine
福建丰力机械科技有限公司

Sources & Evidence

1. Metso completes acquisition of Swiss Tower Mills Minerals
   - Company verification: Metso announced completion of its Swiss Tower Mills Minerals AG acquisition on April xx.xx 2025, following regulatory approvals.
   - Company verification: The announcement connects HIGmill, Vertimill and SMD to Metso's commercial stirred-milling portfolio, including ultrafine applications.
2. FLSmidth to deliver steel media tower mills, pumps and cyclones to an iron ore plant
   - Company verification: FLSmidth announced an Indian mining customer's tower-mill equipment order on February xx.xx 2025.
   - Company verification: Installation and commissioning were expected during 2026-2027; the announcement does not establish completed commissioning.
3. Who we are - NETZSCH Group
   - Company verification: NETZSCH identifies itself as a family-owned German machinery enterprise.
   - Company verification: Its corporate page places the group's business units under Erich Netzsch B.V. & Co. Holding KG and identifies Grinding & Dispersing as one of those units.
4. Business Unit Grinding & Dispersing - NETZSCH
   - Company verification: NETZSCH's business-unit page connects Grinding & Dispersing to the family-owned group.
   - Company verification: It describes a commercial dry-grinding mill portfolio extending into submicron applications.
5. Unternehmensstiftung - Willy A. Bachofen AG
   - Company verification: WAB describes its corporate foundation's employee share-benefit arrangement at Willy A. Bachofen AG.
   - Company verification: The record provides ownership-structure context without establishing a complete current beneficial-ownership register.
6. Imprint - WAB
   - Company verification: WAB's legal notice identifies Willy A. Bachofen AG at its Muttenz, Switzerland address.
7. Our company history - WAB
   - Company verification: WAB's history records a 2025 DYNO-MILL UBM product launch, supporting continuing commercial mill activity.
   - Company verification: WAB's company history identifies Willy A. Bachofen AG as the Swiss company behind the business.
   - Company verification: The history records subsidiaries, sales partners and DYNO-MILL product launches.

8. Union Process corporate brochure - The Evolution of Milling Technology
   - Company verification: Union Process's corporate brochure identifies Union Process, Inc. and its Akron business location.
   - Company verification: It documents production milling equipment and small-media mill offerings for submicron and nanoscale particles, supplementing the previously captured SD Series evidence.
9. IsaMill - Glencore Technology
   - Company verification: The IsaMill page identifies Glencore Technology Pty Limited and publishes its Australian business number.
   - Company verification: The commercial page describes named IsaMill customer applications, including Prominent Hill, supporting an established equipment-commercialization role.
   - Company verification: Glencore Technology publicly offers IsaMill for fine and ultrafine mineral-ore grinding.
   - Company verification: The offering addresses mineral-processing industries including copper, lead, zinc and gold.
10. About Us - The Jet Pulverizer Company
    - Company verification: The company identifies itself as The Jet Pulverizer Company, Inc.
    - Company verification: It states that Micron-Master mills are designed and fabricated in-house in Moorestown, New Jersey, and offered from laboratory through production equipment.
    - Company verification: The page distinguishes equipment manufacture from its custom-processing division.
11. About Us - Fluid Energy Processing and Equipment
    - Company verification: Fluid Energy's current company page identifies its equipment division as formerly Fluid Energy Aljet.
    - Company verification: It describes a commercial jet-mill equipment business separately from processing services.
12. Jet O Mizer - Fluid Energy Processing and Equipment
    - Company verification: Fluid Energy maintains a directly inspected JET-O-MIZER commercial equipment page, supplementing its older brochure with current catalog presence.
13. About Us - Sturtevant Inc.
    - Company verification: Sturtevant identifies its current company name as Sturtevant, Inc. and its Hanover, Massachusetts location.
    - Company verification: The company describes continuing family ownership and its milling and air-classification equipment business.
14. About RSG Inc - manufacturer of fine grinding mills
    - Company verification: RSG's company page identifies RSG Inc. as an Alabama supplier of fine-grinding mills and air-classification equipment to mineral-industry customers globally.
    - Company verification: It describes earlier kaolin and calcium-carbonate equipment installations.
15. Corporate - AIMEX
    - Company verification: AIMEX's English corporate page connects the AIMEX identity to Aimex Co. Ltd. and records its former Igarashi name.
    - Company verification: It identifies a continuing industrial wet-grinding equipment business, Japanese facilities and stated sales-agent territories.
16. Company Profile - Mill Powder Tech
    - Company verification: Mill Powder Tech's official company profile supports the market-facing equipment-business identity used in its mill catalog.
17. News & Events - Mill Powder Tech Announcements
    - Company verification: Mill Powder Tech publishes equipment-business updates dated December xx.xx 2025 and a Tainan, Taiwan contact address.
    - Company verification: These records supplement the captured ICM offering with evidence of continuing business communications.

18. Our milestones - NEUMAN & ESSER
    - Company verification: NEUMAN & ESSER's history states that the Peters family owns the business.
    - Company verification: The record connects mills and classifier systems to the company's equipment portfolio.
19. Şirket Profilimiz - Sözer Makina
    - Company verification: Sözer's corporate history connects the Sözer Makina equipment business to establishment of a limited company in 1994.
    - Company verification: It records registration of the SÖZER brand as the company's own mark and describes equipment-manufacturing and export activity.
20. Supermill Plus SMP - Oliver + Batlle
    - Company verification: Oliver + Batlle directly offers the Supermill Plus SMP horizontal mill.
    - Company verification: The commercial page expressly describes finished-particle applications extending below one micron and lists industrial coatings and ink applications.
21. Company - Oliver + Batlle
    - Company verification: Oliver + Batlle's own corporate page supports the market-facing company identity associated with the inspected Supermill offering.
22. Weir 2025 Full Year Results Presentation
    - Company verification: Weir's 2025 results presentation identifies an ENDURON vertical stirred mill and reports receipt of an initial equipment order.
    - Company verification: The presentation establishes a current fine-grinding equipment initiative but does not expressly establish ultrafine duty.
23. Pet Food Particle Size Reduction Grinder in Argentina - RICHI Machinery
    - Company verification: RICHI's supplier-authored Argentina case names SWFL110 equipment and describes a 2025 pet-food customer project.
    - Company verification: The customer is unnamed; independent delivery confirmation and comparability with the retained micron/submicron boundary remain unresolved.
24. Powder Grinding Equipment Manufacturer - Vsunny
    - Company verification: The inspected Vsunny product-bearing business page identifies Dongguan Vsunny Machinery Co., Ltd.
    - Company verification: It names VSLM ultrafine vertical mills and VSHM ultrafine ring-rolling mills for nonmetallic-mineral applications.
    - Company verification: The page links a Turkish customer case, without independently establishing that project's buyer or delivery.
25. Ultrafine Powder Grinding Mill Machine - The Nile
    - Company verification: The Nile's inspected commercial product page offers HGM-series ultrafine powder mills.
    - Company verification: The page identifies The Nile Machinery Co., Ltd.; authoritative relationships among the observed Nile domains and regional entities remain unresolved.
26. Miyou Group Company - Grinding Mill Manufacturer
    - Company verification: Miyou's product-bearing business page names the QF fluidized-bed jet mill for ultrafine pulverization and offers agitated bead mills for ultrafine grinding.
    - Company verification: The page uses Miyou Group Company Ltd. in its description and Miyou Group Co., Ltd. in its contact block, leaving the registered English form qualified.
27. 2026 年先进级智能工厂项目公示名单
    - Company verification: Fujian's 2026 advanced-level smart-factory project public-notice list names 福建丰力机械科技有限公司 in Longyan alongside a casting digital-smart-factory project.
    - Company verification: This government record supports the observed Chinese company identity, not a current ultrafine-mill offering or an official English name.

28. Soybean Grinding - Bauermeister Size Reduction Equipment
    - Company verification: Bauermeister's commercial application page names Gap Mill GM and Universal Mill UM offerings with air-classifier combinations for fine soybean products.
    - Company verification: The page establishes named mill applications but does not itself classify the mills as ultrafine equipment.
29. PROBAT acquires Royal Duyvis Wiener
    - Company verification: PROBAT's March xx.xx 2024 announcement describes acquisition and integration of Royal Duyvis Wiener.
    - Company verification: It identifies the acquired business with cocoa, chocolate and related food-processing equipment; it does not establish the protected title's current legal status or an ultrafine-qualified mill.
30. Annual Report 2025 - Bühler Group
    - Company verification: Bühler's 2025 annual report identifies the group as a continuing Swiss family enterprise.
    - Company verification: The report supports current group identity and activity, rather than a mill-specific revenue or market-share claim.
31. Advanced Materials - Bühler Annual Report 2024
    - Company verification: Bühler's 2024 Advanced Materials report describes supplied battery-material grinding lines and repeated orders for MicroMedia Invicta.
    - Company verification: The report adds commercial relevance but does not expressly settle the captured MicroMedia model's exact ultrafine output classification.
32. Stirred mills - for wet grinding - Metso
    - Company verification: Metso's stirred-mill portfolio lists HIGmill and Stirred Media Detritor for fine and ultrafine mineral grinding.
    - Company verification: The page documents equipment supply and associated parts and services under the Metso identity.
33. Energy efficient solutions in comminution - Metso
    - Company verification: Metso states that it has acquired Swiss Tower Mills Minerals AG and that STM is now part of Metso.
    - Company verification: The page associates STM with HIGmill, which Metso states it has exclusively sold and serviced.
34. Vertical fine grinding mills - FLS
    - Company verification: FLS lists the FLS Tower Mill and VXPmill within its vertical fine-grinding equipment portfolio.
    - Company verification: The page identifies fine and ultrafine applications in mineral processing and other industries.
35. Legal Notice - FLS
    - Company verification: The FLS website legal notice identifies FLSmidth & Co. A/S as the website owner and provides its Danish registration number.
    - Company verification: The notice also identifies FLSmidth A/S as a group contact entity.
36. s-Jet Steam Jet Mill - NETZSCH Grinding & Dispersing
    - Company verification: NETZSCH Grinding & Dispersing lists the s-Jet Steam Jet Mill as a commercial dry-grinding product.
    - Company verification: The offering is expressly associated with submicron and ultrafine grinding.
37. Our History - NETZSCH Group
    - Company verification: NETZSCH's corporate history identifies Grinding & Dispersing as a group business and records the establishment of NETZSCH Feinmahltechnik.
    - Company verification: The history documents the group's international development, including businesses in the United States, Brazil and France.

38. AFG Fluidised Bed Jet Mill | Hosokawa Alpine
    - Company verification: Hosokawa Alpine lists the AFG fluidized-bed opposed jet mill.
    - Company verification: The product page identifies ultrafine mineral-powder and specialty-material applications.
39. HOSOKAWAMICRON CORPORATION - pharmaceutical equipment offerings
    - Company verification: Hosokawa Micron Corporation's own product materials list HOSOKAWA/ALPINE milling systems.
    - Company verification: The page describes group offerings spanning development and commercial-production equipment.
40. MicroMedia Bead Mill | Grinding and Dispersing | Bühler
    - Company verification: Bühler lists the MicroMedia high-performance bead mill as wet-grinding equipment.
    - Company verification: The page identifies printing-ink, electronic-material and coating applications and offers equipment or complete-plant solutions.
41. Vertical Agitated Media Mill - Eirich
    - Company verification: Eirich lists TowerMill for wet grinding of ores, minerals and industrial raw materials, including micron and submicron applications.
    - Company verification: The page identifies Nippon Eirich as the TowerMill developer and marketer within the Eirich Group.
42. DYNO-MILL KD - Horizontal agitator bead mill
    - Company verification: WAB's DYNO-MILL KD brochure describes a horizontal agitator bead-mill range for ultrafine wet grinding.
    - Company verification: The brochure identifies production and laboratory applications in coatings, inks, pigments and food.
43. Dry Batch Or Continuous Production Mills - Union Process
    - Company verification: Union Process lists SD Series dry-grinding Attritors for batch and continuous production.
    - Company verification: The product page identifies industrial applications including minerals, pigments, ceramics and metal powders.
44. Vertical Stirred Mill | Mineral Processing Equipment | CITIC HIC
    - Company verification: CITIC Heavy Industries lists CSM vertical stirred mills as wet fine-grinding equipment.
    - Company verification: Its product page reports exports to Australia, Chile and Russia and lists named customer references.
45. Industrial Grinding Mills & Powder Processing Machines | CLIRIK
    - Company verification: CLIRIK's product catalog lists HGM Ultrafine Grinding Mill and CLUM Ultrafine Vertical Roller Mill.
    - Company verification: The same catalog lists classified-impact and jet-mill offerings under the CLIRIK identity.
46. SCM Ultrafine Grinding Mill-SBM Industrial Technology Group
    - Company verification: SBM Industrial Technology Group lists the SCM Ultrafine Grinding Mill as a superfine-powder equipment offering.
47. HLMX Superfine Grinding Mill
    - Company verification: Guilin Hongcheng lists the HLMX Superfine Grinding Mill as an ultrafine vertical-mill offering.
    - Company verification: The page identifies nonmetallic-mineral applications serving filler and additive buyers.
48. SWECO Vibratory Grinding and Particle Size Reduction Equipment
    - Company verification: SWECO lists Vibro-Energy Grinding Mills for particle-size reduction into the submicron range.
    - Company verification: Its catalog includes wet and dry grinding-mill families.

49. The Jet Pulverizer Company | A Comparison Guide to Micron-Master Jet Pulverizers
    - Company verification: Jet Pulverizer's Micron-Master equipment page states that the company manufactures jet mills.
    - Company verification: The commercial range includes laboratory, pilot and production equipment.
50. Solutions for Grinding Fine Powders - Fluid Energy
    - Company verification: Fluid Energy Processing & Equipment Company's brochure identifies MICRO-JET, JET-O-MIZER and ROTO-JET mill offerings.
    - Company verification: The brochure distinguishes equipment-related commercial offerings from contract processing and rental services.
51. Sturtevant Micronizer - Fluid Energy Grinding Jet Mill - Product Bulletin
    - Company verification: Sturtevant's product bulletin lists the Micronizer fluid-energy grinding jet mill.
    - Company verification: The offering addresses ultrafine particle requirements in pigments, cosmetics, specialty materials and pharmaceutical powders.
52. Air Classifier Manufacturer (ACM) - Rieco
    - Company verification: RIECO lists its Air Classifying Mill as equipment for ultrafine grinding.
    - Company verification: The page identifies chemical, food, pigment, pharmaceutical and mineral buyer applications.
53. JCF Mill Impact Mill - STM Microtec
    - Company verification: STM Microtec lists the JCF impact mill with an integrated dynamic classifier.
    - Company verification: The page establishes a named fine-grinding equipment offering, but its ultrafine-classifier wording alone does not establish the entire mill's market classification.
54. air classifier | powder processing | grinding mills | RSG Inc |Alabama
    - Company verification: RSG Inc.'s product-bearing business overview identifies the company as a grinding-mill manufacturer in Alabama.
    - Company verification: It specifically lists the ufg mill as a dry ultrafine agitated-media mill.
55. Mill Powder Tech Impact Classified Mill ICM Series | Ultra Fine Grinding System 40-1250 Mesh
    - Company verification: Mill Powder Tech lists the ICM Impact Classified Mill as an ultrafine grinding-system offering.
56. Bead Mill｜アイメックス株式会社
    - Company verification: AIMEX's English product page lists Neo-ALPHA MILL, EASYNANO and other bead-mill products.
    - Company verification: The page describes the business as serving wet-grinding demand for nanometer-sized particles.
57. We meet your requirements for ultra fine range of machines
    - Company verification: The official NC chemical-equipment catalog lists SC Mill and Attritor equipment.
    - Company verification: The catalog expressly describes media-agitation wet ultrafine grinding and dispersion equipment; its current commercial applicability requires refresh.
58. Emax - High Energy Ball Mill - Retsch
    - Company verification: RETSCH lists the Emax High Energy Ball Mill explicitly for ultrafine and nanoscale grinding.
    - Company verification: The offering is laboratory/sample-preparation equipment rather than an established industrial-production mill.
59. Company - RETSCH
    - Company verification: RETSCH's company page states that RETSCH is part of Verder Scientific within the Verder Group.
    - Company verification: The company history identifies Emax as a RETSCH product.

60. Planetary Ball Mills for Fine Grinding | Fritsch Milling and Sizing
    - Company verification: FRITSCH's official milling page lists PULVERISETTE planetary mills, including the PULVERISETTE xx.xx premium line.
    - Company verification: The page documents nanoscale grinding applications in research, materials science and sample preparation.
61. Custom Ultra fine Grinding Mill Manufacturers, Factory
    - Company verification: The official catalog identifies Zhejiang Jacan Technology Co., Ltd. as an ultrafine grinding-mill manufacturer.
    - Company verification: It lists superfine grinding, mechanical crushing and classification equipment.
62. Ultra Fine MIill-Hongji Group
    - Company verification: Hongji Group's official product page lists an Ultra Fine Mill offering.
63. Industrial Business: Technologies (Product Categories) | Tsukishima Kikai Co., Ltd.
    - Company verification: Tsukishima Kikai's industrial equipment catalog includes milling and vibrating-mill offerings.
    - Company verification: The inspected category page does not establish ultrafine-specific commercial classification.
64. History - Swiss Tower Mills Minerals AG
    - Company verification: STM's historical company page describes a 2022 agreement to market its mills with Weir Minerals.
    - Company verification: This establishes a historical commercial relationship, not present ultrafine-mill availability through Weir.
65. CLM Air Classifying Mill | Industry-Leading Particle Size Reduction
    - Company verification: Prater publicly offers the named CLM Air Classifying Mill.
    - Company verification: The product page describes grinding applications extending into the submicron range.
66. Manufacturers of Particle Size Reduction Equipment | Prater
    - Company verification: Prater identifies itself as a particle-size-reduction equipment manufacturer.
    - Company verification: Its company description places Prater Industries under IMI Holding Corporation.
67. Jet Milling Equipment | Particle Processing | AVEKA
    - Company verification: AVEKA Cottage Grove designs, builds and sells fluidized-bed jet mills for ultrafine particle applications.
    - Company verification: The page identifies AVEKA Cottage Grove, formerly AVEKA CCE Technologies, as part of AVEKA Group and provides its Minnesota business location.
    - Company verification: The offering includes production-scale equipment rather than toll processing alone.
68. HCPN Immersion Mill | Hockmeyer
    - Company verification: Hockmeyer markets the named HCPN Immersion Mill for nano-application milling.
    - Company verification: The official page identifies Hockmeyer Equipment Corporation in its company notice.
69. Meet Our Staff | Hockmeyer
    - Company verification: The company's staff page lists Herman Hockmeyer as Owner and CEO.
70. Fine Powder Grinding Mill | Quadro Fine Milling Machine
    - Company verification: Quadro publicly offers the Fine Grind F10 and expressly describes it as an ultrafine powder grinding mill.
    - Company verification: The page identifies Quadro Engineering as a division of IDEX MPT, Inc.
71. Fine Grinding Machines and Micronizing Equipment
    - Company verification: Bepex identifies Pulvocron as its dry fine-grinding equipment offering.
    - Company verification: The page expressly associates Pulvocron with ultrafine powder and micron-level commercial applications.
72. Milling Equipment
    - Company verification: Custom Milling & Consulting's current equipment catalog lists Supermill PLUS.
    - Company verification: The catalog expressly positions that horizontal media mill for ultrafine particle sizes.

73. Supermill Plus™
    - Company verification: The company-authored Supermill Plus brochure identifies Custom Milling & Consulting, Inc. as the supplier.
    - Company verification: The brochure describes Supermill Plus as a horizontal media mill addressing ultrafine particle requirements.
74. Media Mills / Bead Mills - SCHOLD
    - Company verification: Schold offers laboratory, production, horizontal, vertical and immersion media mills for micro-, nano- and submicron applications.
    - Company verification: The page identifies Schold Manufacturing's Chicago business address.
    - Company verification: EMI Mills is identified as a Schold division.
75. Schold Acquires EMI Mills (Engineered Mills Inc.)
    - Company verification: Schold's own announcement states that it acquired EMI Mills, also known as Engineered Mills.
    - Company verification: The acquired business supplies bead mills and related equipment from small-sample through production applications.
76. Pin Mills - Size Reduction Equipment for Bulk Materials - Munson Machinery, Inc.
    - Company verification: Munson Machinery publicly offers named CIM centrifugal-impact pin mills.
    - Company verification: The official product material describes models for fine and ultrafine particle reduction.
77. Raymond® Ultrafine Mill - Coperion
    - Company verification: Coperion publicly markets the named Raymond Ultrafine Mill.
    - Company verification: Its stated commercial applications include coatings, fillers and pigments.
    - Company verification: Coperion's current portfolio offers the named Raymond Ultrafine Mill.
    - Company verification: Coperion currently lists the Raymond Ultrafine Mill as an equipment offering.
    - Company verification: The product page identifies ultrafine powder applications including coatings, fillers, and pigments.
    - Company verification: The same Raymond offering supports the Coperion GmbH staged representation and exposes overlapping group-level activity.
78. We are now Coperion - Hillenbrand Food Health & Nutrition
    - Company verification: The former Schenck Process FPM business transitioned to Coperion effective August xx.xx 2024.
    - Company verification: The announcement places Raymond Bartlett Snow in Coperion's portfolio and identifies the former Schenck Process LLC as Coperion Process Solutions LLC.
    - Company verification: It connects the acquired business to U.S.-focused performance-materials operations.
    - Company verification: Coperion's transition explanation places Raymond Bartlett Snow within its acquired business portfolio.
    - Company verification: The announcement explicitly identifies Qlar as a separate, unrelated company following the Schenck Process FPM separation.
    - Company verification: The record does not support attributing Coperion's Raymond portfolio to Qlar.
    - Company verification: Coperion's corporate explanation distinguishes Qlar from the acquired FPM business.
    - Company verification: The historical Schenck association therefore does not by itself establish current Qlar ownership of Raymond equipment.
    - Company verification: Coperion explicitly distinguishes its acquired business from Qlar, contradicting reliance on the historical Raymond association as evidence of Qlar's present offering.
    - Company verification: Coperion explains that Schenck Process FPM was separated from Schenck Process Group before Hillenbrand's September 2023 purchase.
    - Company verification: The page identifies Qlar as a separate company rather than a Coperion alias.
    - Company verification: The corporate transition explanation supports the common Coperion portfolio attribution, not a separate Raymond business for each staged title.

79. Air Swept Classifier Milling Systems
    - Company verification: Classifier Milling Systems markets named Air Swept Classifier Milling Systems.
80. About Us - Classifier Milling Systems Inc.
    - Company verification: The company description identifies Classifier Milling Systems Corporation in Canada as a design engineer and manufacturer of size-reduction milling systems.
    - Company verification: It describes ACMS in America as supplying complete classifier milling systems as well as processing services.
81. Milling Systems - HAF Equipment
    - Company verification: HaF offers integrated industrial milling systems that include air-classifier and fluidized-bed jet-mill categories.
    - Company verification: HaF states that its systems incorporate STM Microtec technology and that it is STM Microtec's exclusive supplier in the United States and Canada.
    - Company verification: The page describes local engineering and service as part of a fully integrated HaF system.
    - Company verification: HaF publicly names STM Microtec as the milling-technology provider for its own integrated systems.
    - Company verification: The page supplies a company-authored claim of a United States and Canadian commercialization route for STM Microtec.
82. www.disperset.com
    - Company verification: Disperset's equipment catalog explicitly offers ball mills for fine and ultrafine grinding.
    - Company verification: The catalog lists named MB-series mill models and markets equipment for minerals, paints, inks and ceramics.
83. Molinos de Perlas
    - Company verification: Disperset's specific bead-mill page establishes an additional equipment portfolio under the same supplier identity.
    - Company verification: The page lists named ST-series bead-mill offerings.
84. Molinos - Transportadores FADITRA
    - Company verification: Transportadores FADITRA's official catalog offers Raymond-type vertical mills described for fine and ultrafine rock processing.
    - Company verification: The page identifies its Mexico City business address and equipment-fabrication activities.
85. Molinos Pulverizadores Industriales | INMIMEX México
    - Company verification: INMIMEX markets industrial pulverizer mills described as Mexican-made equipment.
    - Company verification: The product page identifies fine grinding and micronization applications across industrial buyer categories.
    - Company verification: The inspected material does not independently establish the exact ultrafine boundary fit.
86. Horizontal Media Mill - RH Series Horizontal Mill | CB Mills
    - Company verification: CB Mills currently offers Red Head RH-Series horizontal media mills from laboratory through production-scale equipment.
    - Company verification: The page establishes an equipment-supply offering but does not itself settle ultrafine finished-particle classification.
87. History of CB Mills
    - Company verification: CB Mills' history connects the business to Chicago Boiler.
    - Company verification: The history describes its Red Head grinding-mill business and an alliance with Willy A. Bachofen concerning DYNO-MILL manufacturing.
    - Company verification: This historical statement does not independently establish the present licensing or revenue relationship.

88. Mills | Customization Equipment by Morehouse Cowles
    - Company verification: MorehouseCowles maintains a specific commercial mills portfolio.
    - Company verification: The inspected portfolio supports mill supply, while ultrafine-specific qualification remains unresolved.
89. Basket Mill Model M850 - Myers Mixers
    - Company verification: Myers Mixers publicly offers the named M850 basket mill.
    - Company verification: The product page supports media-milling equipment participation but does not establish the exact ultrafine finished-particle category.
90. Explore Our Range of Commercial Coffee Grinders
    - Company verification: Modern Process Equipment markets industrial roller-style coffee grinders.
    - Company verification: Its portfolio expressly includes an Ultrafine & Turkish category described at xx.xx-xx.xx microns, creating a boundary-dependent commercial offering rather than an inferred mineral-mill role.
91. Altern Mill Batch Mills for Ultra Fine Grinding | Jaygo Inc
    - Company verification: Jaygo markets named Altern Mills as ultra-fine wet-grinding batch equipment.
    - Company verification: The commercial applications listed include cosmetics, paints, inks, coatings and dyes.
92. Moinho Turbo - Modelo “Rotex” - Moinhos Meteor
    - Company verification: Meteor's product page publicly lists the ROTEX turbo mill for dry fine and ultrafine grinding and gives its São Paulo business location.
93. MOAGEM ULTRA-FINA DE SUBSTÂNCIAS SECAS
    - Company verification: The ROTEX brochure names Meteor Indústria e Comércio Ltda. and includes ultrafine mills in its manufacturing program.
    - Company verification: The brochure bears the date notation xx.xx/xx.xx; it does not establish a current sale.
94. Empresa de Micronização | Micron | São Paulo
    - Company verification: Micron's product-bearing business page advertises sale and rental of Jet Mill micronization equipment for ultrafine particles.
95. Equipamentos para Micronização - Micron
    - Company verification: Micron's equipment catalog lists M90, M200, M300 and M400 micronization equipment.
    - Company verification: The catalog identifies Micron Locação de Maquinas LTDA in Artur Nogueira, São Paulo.
96. Empresa de Micronização - Micron
    - Company verification: Micron's company page states that it sells and rents its equipment and repeats the Brazilian company name and location.
97. Lucato - Moinho Martelo para Moagem Ultra Fina
    - Company verification: Lucato publicly offers a hammer mill expressly labeled for ultrafine grinding.
    - Company verification: The product page gives a Limeira, São Paulo business address.
98. Lithium Carbonate Grinding for Battery Materials
    - Company verification: NEUMAN & ESSER publicly offers the ICX impact-classifier mill and OCX jet mill for ultrafine grinding applications.
99. Our location in Brazil
    - Company verification: NEUMAN & ESSER identifies its Brazilian operation and NEUMAN & ESSER Engenharia e Soluções Ltda. in Belo Horizonte.
    - Company verification: The page describes Process Solutions within its Brazilian business and infrastructure serving Central and South America.
100. Equipamentos - CMC do Brasil - Moagem Customizada, Serviços de Processamento
    - Company verification: CMC do Brasil catalogs SuperMil Plus horizontal bead mills and Batch Mill basket mills.
    - Company verification: The page gives a Mogi Guaçu, São Paulo location and identifies CMC Milling do Brasil Ltda. in its footer.
    - Company verification: The inspected catalog establishes mill offerings but not their ultrafine-specific classification.

101. molino micronizador mzr | tecnomills srl | ruta nac. 8 km 410 , arias, cordoba, argentina
    - Company verification: Tecnomills SRL publicly offers the MZR micronizer expressly for ultrafine grinding.
    - Company verification: The official page identifies the business with Arias, Córdoba, Argentina.
102. empresa | tecnomills srl | ruta nac. 8 km 410 , arias, cordoba, argentina
    - Company verification: Tecnomills' company history describes its development and manufacture of milling-industry equipment in Argentina.
103. BOLETÍN OFICIAL Nº 35.851 - Segunda Sección - Jueves 12 de febrero de 2026
    - Company verification: The Argentine Official Gazette published a corporate notice under Alumcraft Argentina S.A. on February xx.xx 2026.
    - Company verification: This establishes official legal-name usage, not an ultrafine product, ownership or current sales.
104. Visite a Liming Heavy Industry en EXPONOR Chile 2026: Soluciones avanzadas de molienda para la industria minera - Noticias - Liming Heavy Industry
    - Company verification: Liming Heavy Industry's May xx.xx 2026 announcement lists LUM ultrafine and MW micropowder mills in its offering.
    - Company verification: It announced participation in EXPONOR Chile on June xx.xx-xx.xx 2026; the announcement does not establish actual attendance or a local sale.
105. Hosokawa Micron Powder Systems - Polimin
    - Company verification: Polimin describes its representation and application of Hosokawa fine and ultrafine milling equipment in Chile.
    - Company verification: This is evidence of a publicly stated channel relationship, not a dated installation or sale.
    - Company verification: Polimin's equipment page identifies a Chilean commercial route for Hosokawa offerings.
    - Company verification: Polimin publishes a Hosokawa Micron Powder Systems equipment offering and representation relationship in Chile.
    - Company verification: This supports a specialized equipment-channel role, not ownership of the OEM.
106. Molino ultrafino vertical HLMX serie para bentonita - GUILIN HONGCHENG Fábrica de molino de rodillos
    - Company verification: Guilin Hongcheng's HLMX product article identifies an ultrafine mill offering and names Peru among export destinations.
    - Company verification: The statement does not identify a Peruvian buyer, shipment date or current local sales.
107. Planta de molienda ultrafina de negro de humo por pirólisis Clirik CLCM60, especializada en aplicaciones de malla 400. Ya en funcionamiento en Colombia. Diseñada para ofrecer un rendimiento fiable.
    - Company verification: CLIRIK's supplier-authored case claims a CLCM60 commissioning in Colombia in 2024.
    - Company verification: The same record contains contradictory carbon-black and calcite descriptions and does not name the customer; project details remain uncorroborated.
108. Fluidized Bed Jet Mill - OCX
    - Company verification: NEUMAN & ESSER publicly offers the OCX fluidized-bed jet mill expressly for dry ultrafine grinding.
    - Company verification: The offering identifies mineral, chemical, pigment, and battery-material buyer applications and publishes a German sales contact.
109. Powder Processing Mills | British Rema
    - Company verification: British Rema's equipment portfolio includes opposed jet mills expressly offered for superfine, micron-scale grinding.
    - Company verification: The page distinguishes the equipment portfolio from associated powder-processing services.

110. Opposed Jet Mill
    - Company verification: The opposed-jet-mill commercial brochure identifies British Rema Process Equipment Ltd.
    - Company verification: The brochure publishes a Chesterfield, United Kingdom address and an England company registration number.
111. Chemical Milling Experts | Atritor
    - Company verification: Atritor's commercial chemical-milling page identifies Cell Mill and Micronizer equipment offerings.
    - Company verification: The page expressly states that its fine chemical-milling equipment can produce ultrafine powders.
112. Particle Science Technologies | Dec Group
    - Company verification: Dec Group publicly offers the MC DecJet jet-mill product line for micron-scale particle reduction.
    - Company verification: The portfolio includes development, pilot, and production equipment categories rather than only processing services.
113. FPS | FPS Pharma
    - Company verification: FPS describes its business as designing and producing micronization equipment and identifies its spiral-jet-mill product history.
    - Company verification: The page identifies F.P.S. Food and Pharma Systems s.r.l. and publishes its Como headquarters and Fiorenzuola d'Arda facility.
114. Products | Page 2 of 3 | FPS Pharma
    - Company verification: FPS's commercial catalog lists LaboMill, PilotMill, and ProMill spiral-jet-mill equipment.
    - Company verification: The catalog demonstrates equipment offerings extending beyond laboratory-only systems.
115. Strahlmühle | PMT Jetmill - Energieeffiziente Feinstmahlung
    - Company verification: PMT-Jetmill GmbH directly identifies its commercial spiral-jet-mill offering.
    - Company verification: The page expressly describes micron and submicron grinding capability.
116. Jet mill - Comex Group - Sorting technologies and powder processing
    - Company verification: Comex publicly offers JMX jet-milling equipment for micron-scale powders.
    - Company verification: The product page identifies Comex Polska Sp. z o.o. business contacts in Poland.
117. About us | Comex Group - Sorting technologies and powder processing
    - Company verification: Comex describes an equipment business spanning powder processing and sorting technology.
    - Company verification: Its current company page identifies Comex Polska Sp. z o.o. headquarters in Krakow and an Oświęcim branch.
118. Pharma Product Manufacturing Solutions | Riera Nadeu
    - Company verification: Riera Nadeu's product-bearing business overview explicitly offers RINA Jet Mill micronizers for ultrafine powders.
    - Company verification: The company describes itself as a manufacturer and supplier of jet-milling and other industrial equipment.
119. Key know-how for API Wet Milling Technology
    - Company verification: ProXES identifies the MS CoBall mill as a commercial wet-milling offering with submicron particle-size-reduction applications.
    - Company verification: The page identifies ProXES GmbH and its Hameln, Germany address.
120. FlexMill-Lab NanoWitt
    - Company verification: The April 2024 commercial brochure identifies FlexMill-Lab NW NanoWitt as a wet nanomilling laboratory bead-mill offering.
    - Company verification: The brochure gives the official English name Frewitt manufacturer of machines Ltd. and a Granges-Paccot, Switzerland address.

121. Optimize Your Grinding Process with KREIS-BASKET-MILL®
    - Company verification: WILHELM NIEMANN's commercial portfolio identifies the KREIS-CONTINUOUS-MILL equipment family.
    - Company verification: Its portfolio describes continuous fine grinding of liquids extending into the nano range.
122. Impressum der WILHELM NIEMANN GmbH & Co. KG in Melle
    - Company verification: The official legal notice identifies WILHELM NIEMANN GmbH & Co. KG in Melle.
    - Company verification: NIEMANN's official legal notice identifies WILHELM NIEMANN GmbH & Co. KG as the business behind the website.
    - Company verification: The NIEMANN brand website's legal notice connects it to the already staged WILHELM NIEMANN legal identity.
123. DemiNo® - NOLL
    - Company verification: NOLL publicly offers the DemiNo impact-whirl-mill family.
    - Company verification: The German commercial page expressly describes micron-scale grinding applications.
124. The company formerly known as Schenck Process FPM has officially transitioned its name to Coperion
    - Company verification: Coperion's August xx.xx 2024 release places Raymond Bartlett Snow, Kemutec, and other former Schenck Process FPM brands within Coperion.
    - Company verification: The release identifies Coperion GmbH in Stuttgart.
125. Qlar (formerly Schenck Process) returns to the food and pet food industry with bold rebrand
    - Company verification: Qlar's own announcement corroborates the September 2023 sale of its FPM business and the May 2024 Qlar rebranding.
    - Company verification: The announcement describes a return to food and pet-food markets from September xx.xx 2025, but does not establish a current ultrafine-mill offering.
126. Grinding, Drying and Separating Solutions | Poittemill Forplex
    - Company verification: POITTEMILL Group's product-bearing business overview explicitly advertises fine and ultrafine grinding equipment.
    - Company verification: The group describes developing and manufacturing powder-processing equipment and turnkey systems.
127. Industrial ultrafine powder pulverizing plants
    - Company verification: CIMMA's commercial pulverization page expressly markets equipment for ultrafine powders.
    - Company verification: It identifies CIMMA Morandotti S.P.A. and named PPS and SV MICRO mill families, whose exact ultrafine boundary fit remains qualified.
128. Машиностроительный завод «Активатор».
    - Company verification: Aktivator describes its own machinery-manufacturing business, including planetary and other ball mills.
    - Company verification: The company page identifies its business location as Novosibirsk.
129. Планетарные мельницы «Активатор»
    - Company verification: Aktivator's commercial product page offers planetary mills under the Aktivator identity.
    - Company verification: The page supports a current equipment-supply business, without independently resolving ultrafine production-market fit.
130. Machinery for the Chemical Industry - Lleal S.A.U.
    - Company verification: Lleal S.A.U.'s chemical-industry equipment portfolio lists ROTOMILL horizontal mills and immersion mills.
    - Company verification: The inspected portfolio establishes mill supply but not ultrafine-specific classification.
131. JEHMLICH REKORD 212-630 - Fine Grinding
    - Company verification: JEHMLICH's commercial brochure identifies the REKORD xx.xx-xx.xx fine-grinding equipment family.
    - Company verification: The brochure supports equipment-business participation, but does not independently establish the exact ultrafine market boundary.

132. Thermal & Mechanical Process technology | Grenzebach
    - Company verification: Grenzebach's commercial process-technology page offers fine-grinding equipment and integrated powder-processing systems.
    - Company verification: The page identifies chemical and mineral buyer applications, without independently resolving a named ultrafine-mill offering.
133. About | Superfine | Israel
    - Company verification: Identifies Superfine LTD as a manufacturer of Vortex micronization mills and locates the business in Kidmat-Galil, Israel.
    - Company verification: Describes industrial-scale equipment activity alongside the company's own processing operations.
134. SMNG Series Nano Horizontal Milling Machines - Sözer Makina
    - Company verification: Sözer Makina offers SMNG Series Nano Horizontal Milling Machines for nanoscale wet milling.
    - Company verification: Identifies pigments, printing inks and coatings among commercial application categories.
135. ÖZYURT MAKİNE
    - Company verification: Özyurt Makine's company catalog describes a Turkish equipment business and lists an Ultra Fine Grinding Mills family.
    - Company verification: Names D1000, D3000 and D10000 models for mineral-processing applications; the catalog alone does not settle manufacturing or licensing allocation.
136. BRS Engineering - Ürünlerimiz
    - Company verification: BRS Engineering's product catalog explicitly markets a jet-mill system for ultrafine grinding.
    - Company verification: The same catalog lists BRM-H and BRM-V classifier mills and identifies BRS as a Turkish grinding-system producer.
137. Ersel Ağır Makine Sanayi | LinkedIn
    - Company verification: ERSEL's company-authored material identifies its Turkish business location and promotes Ro-Star ultrafine grinding equipment with Maelgwyn.
    - Company verification: Its September xx.xx-xx.xx 2026 exhibition announcement offers discussions of application engineering and equipment supply, not proof of an operating customer installation.
138. Maelgwyn Mineral Services Ltd | LinkedIn
    - Company verification: Maelgwyn Mineral Services Ltd publicly promotes Ro-Star as its ultrafine grinding technology in collaboration with ERSEL's engineering and manufacturing capabilities.
    - Company verification: The company promotes equipment-supply discussions through a joint September 2026 exhibition appearance.
139. Ro-Star ultra-fine grinding one year on
    - Company verification: A March 2026 report attributes manufacture of the first industrial Ro-Star unit to a partnership with ERSEL Heavy Machinery of Turkey.
    - Company verification: Mechanical completion is reported, but industrial customer placement remained a subsequent objective.
    - Company verification: The report identifies Maelgwyn as the Ro-Star technology developer and describes industrial placement as a next commercial-development step.
140. □□□□ | (□□□□□□□□□□) □□□ □□
    - Company verification: PAXAA's product catalog offers jet-mill micronizers, including Super Fine, opposed-jet and pharmaceutical micronizer categories.
    - Company verification: The page identifies the Persian-language company name behind PAXAA and describes its powder-equipment business.
141. □□□□ | □□□□□
    - Company verification: PAXAA's business page identifies its powder-equipment activities and provides a Tehran business address.

142. □□ □□□□□ (Jet Mill) | ALMA
- Company verification: The official product page identifies Arad Lian machinery under the ALMA name and offers jet mills.
- Company verification: This establishes a named equipment offering, but does not independently settle regional establishment or the precise ultrafine-market classification.

143. Samat Sanat Sepahan Co. | LinkedIn
- Company verification: Samat Sanat Sepahan Co.'s company-authored profile identifies an Isfahan, Iran business manufacturing micronization equipment.
- Company verification: The profile expressly includes ultrafine dry-grinding jet-mill equipment among its offerings.

144. Ürünlerimiz | Tunç Mikronize Makina ve San. Tic. Ltd. Şti.
- Company verification: Tunç Mikronize's official portfolio lists micronized grinding-mill groups and micronized pin mills.
- Company verification: The portfolio supports equipment supply, but the inspected descriptions do not conclusively establish ultrafine-specific duty.

145. İletişim | Tunç Mikronize Makina ve San. Tic. Ltd. Şti.
- Company verification: The official contact page provides Tunç Mikronize's business location in Pendik, Istanbul.

146. Planetary Disc Mill ELM-049 | Elipslab
- Company verification: Elipslab offers the ELM-xx.xx Planetary Disc Mill for micron-scale mineral and material grinding.
- Company verification: The page identifies Elipslab as an Ankara, Turkey material-testing equipment manufacturer; market fit remains dependent on the laboratory-equipment boundary.

147. Oman Chemical-Factory Jet Mill Production Line - ALPA Powder Technology
- Company verification: ALPA Powder Technology reports an Omani chemical customer's purchase of a jet-mill production line for an ultrafine application.
- Company verification: The supplier-authored case establishes a claimed regional equipment relationship but does not name the customer or establish a project date.

148. DISPERMAT RS10 bead mill | VMA-GETZMANN
- Company verification: VMA-GETZMANN offers the DISPERMAT RS10 industrial bead mill and explicitly describes ultrafine and nanoscale grinding applications.
- Company verification: The same official RS10 offering applies to the staged VMA-GETZMANN brand representation; it is not evidence of another independent OEM.
- Company verification: The official VMA-GETZMANN page offers DISPERMAT RS10 as a production bead mill with nanoscale grinding applications.

149. Dispermat RS5 - Horizontal Pearl-Mill - Kar Kimya
- Company verification: Kar Kimya's Turkish business catalog lists VMA-GETZMANN's DISPERMAT RS5 for ultrafine grinding and identifies an Istanbul business address.
- Company verification: This supports a public Turkish representation route, not independently confirmed OEM authorization or a dated sale.

150. SCM8021 for Limestone Grinding in Saudi Arabia
- Company verification: An SBM-branded case reports an SCM8021 ultrafine mill supplied for a limestone-powder application in Saudi Arabia.
- Company verification: The buyer is unnamed and the case does not establish an independently corroborated shipment date or resolve the contracting legal entity.

151. Fine Grinding - New Concept Projects
- Company verification: New Concept Projects publicly offers NCP MIGMILL as an ultrafine grinding equipment family.
- Company verification: The product page provides a Gauteng, South Africa business address.

152. Attrition Mills & Scrubbers South Africa | Roytec Global
    - Company verification: Roytec offers GJM impeller/rod stirred mills expressly described for ultrafine grinding.
    - Company verification: The page identifies Roytec Global (Pty) Ltd in South Africa and states that Roytec supplies BGRIMM-MAT grinding technology, equipment, service and spares in Africa.
    - Company verification: Roytec identifies BGRIMM-MAT as the technology business associated with its GJM ultrafine-mill offering.
    - Company verification: The partnership offering is expressly available through Roytec in Africa; the exact BGRIMM-MAT legal entity is not established by this page.
153. Roytec - Company Profile 2025
    - Company verification: Roytec's 2025 company profile states that it is privately owned by its directors and managers.
    - Company verification: The profile identifies Johannesburg support operations and a long-term BGRIMM agreement covering regrind and attrition technology.
154. Huyser Industries - huyserindustries.com
    - Company verification: Huyser Industries identifies itself as a South African mineral-processing technology business.
    - Company verification: Its product-bearing business page markets komodo VSM vertically stirred mills and identifies Huyser as the business behind the brand.
155. Komodo - komodomills.com
    - Company verification: The komodo mill site expressly attributes the VSM equipment range to Huyser Industries and includes ultrafine grinding among its applications.
    - Company verification: The supplier publishes South African project references; these remain supplier-reported rather than independently confirmed installations.
156. Leachox
    - Company verification: Maelgwyn's commercial technology page identifies its proprietary Ro-Star mill for ultrafine grinding.
    - Company verification: The named mill is presented within Maelgwyn's equipment-associated technology portfolio.
157. Maelgwyn Africa - Brand New Facilities
    - Company verification: Maelgwyn's September xx.xx 2022 announcement documents combined Maelgwyn Africa and Maelgwyn South Africa premises in Johannesburg.
    - Company verification: The announcement establishes regional business presence but does not establish a local Ro-Star equipment sale.
158. About Daswell Powder Technology Co., Ltd.
    - Company verification: The business page identifies Daswell Powder as a supplier of complete industrial-mineral powder-processing lines.
    - Company verification: The page uses the company name Daswell Powder Technology Co., Ltd. and provides a Shanghai address.
159. 3T/H DR-28 Ring Roller Mill Calcium Carbonate Grinding Plant Expansion in Minya, Egypt, 2026
    - Company verification: Daswell Powder reports supplying an additional DR-xx.xx ultrafine mineral-grinding plant in Minya, Egypt.
    - Company verification: The supplier states commissioning occurred on March xx.xx 2026; its page was published March xx.xx and updated September xx.xx 2026.
160. MR-30 Ultrafine Grinding Machine for Cassava Flour in Nigeria
    - Company verification: The supplier's Nigeria project page describes MR-xx.xx ultrafine grinding equipment for a cassava-flour application in Ogun State.
    - Company verification: The project account is supplier-authored and does not provide independent buyer corroboration.

161. Africa Projects | Mill Professional Powder Equipment Manufacturer
- Company verification: The official Africa project directory identifies Jiangyin Powder Mill Technology Co., Ltd. as the equipment business.
- Company verification: It lists the Nigerian MR-xx.xx ultrafine grinding project among its African commercial references.

162. Exhibition Preview: On June 24th, Farfly South Africa invites visitors to booth B01
- Company verification: The June xx.xx 2026 FARFLY announcement promotes the FDS ultrafine sand mill for a Johannesburg coatings exhibition scheduled for June xx.xx-xx.xx 2026.
- Company verification: The page identifies Shanghai Farfly Energy Technology Co., Ltd.; the announcement establishes intended regional marketing rather than a completed sale.

163. LVM Ultrafine Vertical Grinding Mill - Sandreck Mining Machinery (Zimbabwe) Co., Ltd.
- Company verification: The supplier page names Sandreck Mining Machinery (Zimbabwe) Co., Ltd., provides a Harare address and offers an ultrafine vertical grinding mill.
- Company verification: The same page uses differing Sandreck/Santak and LVM/LUM attributions, leaving the manufacturer and brand relationship unresolved.

164. Ultrafine Grinding Mill-Fote Machinery
- Company verification: Fote's product page identifies Henan Fote Heavy Machinery Co., Ltd. and markets the HGM Ultrafine Grinding Mill.
- Company verification: The company expressly claims ultrafine-mill exports to Egypt, Ethiopia, Nigeria and South Africa, without naming the buyers or shipment dates.

165. MZ Vibration Mill - ALPA Powder Technology
- Company verification: ALPA markets the MZ Vibration Mill and presents ultrafine industrial applications within its product-bearing catalog.
- Company verification: The page lists a Ghana milling reference, but does not independently establish the customer identity or current sale.

166. South Africa a food factory, white granulated sugar produce 2T/H, particle size D90:180μm, Pin Mill Production Line - ALPA Powder Technology
- Company verification: ALPA publishes a South African food-factory pin-mill project account.
- Company verification: The stated output is substantially coarser than its ultrafine product applications, so this regional reference is not used alone to establish exact market fit.

167. Fine Chemical 归档 - EPIC Powder Equipment
- Company verification: EPIC's official portfolio advertises a Ghana vibration-mill project.
- Company verification: The project title and accompanying text differ on customer industry and equipment description, so the page supports a named regional lead but not a resolved installation claim.

168. Chemical Machinery Manufacturers | Polyc Machine
- Company verification: Shanghai Polyc Technology Co., Ltd. identifies itself as a manufacturer and supplier of horizontal bead mills, basket mills and associated industrial equipment.
- Company verification: The company page provides its official English name and Shanghai business contact details.
- Company verification: The inspected POLYC business page identifies Shanghai Polyc Technology Co., Ltd. and its milling-equipment business.
- Company verification: The POLYC brand is connected to the Shanghai Polyc business, creating potential overlap with the separately staged POLYC lead.
- Company verification: The company page does not establish the inherited Argentina project claim.

169. Paint & Chemical Equipment Supplier in South Africa | POLYC
- Company verification: Shanghai Polyc publishes a South Africa-specific offering for industrial bead mills and turnkey equipment supply.
- Company verification: The page names PZP/PZB wet-grinding equipment and describes supply to South African industrial buyers; named customer or shipment corroboration is not provided.

170. Discover the KREIS-BASKET-MILL® for fine grinding solutions.
    - Company verification: NIEMANN markets KREIS-BASKET-MILL equipment for micron-scale industrial wet grinding.
    - Company verification: Its stated commercial applications include paints, coatings, pigments and printing inks.
171. Internationale Ansprechpartner für optimalen Service
    - Company verification: NIEMANN's official global directory identifies Rhine Ruhr Process Equipment as its South African commercial contact.
    - Company verification: The directory also lists IGI LTD in Rwanda, establishing a stated commercial channel rather than a confirmed mill installation.
172. VMA-GETZMANN: Agencias
    - Company verification: VMA-GETZMANN's official agency directory lists direct company commercial contacts for South Africa and Egypt.
    - Company verification: This establishes a stated route to market, not an inspected ultrafine-specific offering or completed local sale.
173. Profile - ALPA Powder Technology
    - Company verification: ALPA describes its business as ultrafine powder equipment and solutions.
    - Company verification: Its company profile states that it develops and manufactures jet mills, air classifiers and impact mills in China.
174. About Us - EPIC Powder Equipment
    - Company verification: The company identifies itself as Qingdao EPIC Powder Machinery Co., Ltd.
    - Company verification: It states that it develops and manufactures jet mills, impact mills, roller mills and related powder-processing equipment.
    - Company verification: The inspected business overview supports the common EPIC catalog connection but does not settle the two staged rows' legal/reporting perimeter.
    - Company verification: The inspected EPIC site establishes an EPIC-branded powder-equipment business.
    - Company verification: This is the same operating catalog domain used in the captured Qingdao EPIC research.
175. Vertical Fluidized Bed Jet Mill - MQL - EPIC Powder Equipment
    - Company verification: EPIC's commercial catalog lists the MQL Vertical Fluidized Bed Jet Mill.
176. Powder Equipment Manufacturing Production Lines | Longyi
    - Company verification: The company identifies itself as Fujian Longyi Powder Equipment Manufacturing Co., Ltd.
    - Company verification: Its profile describes manufacturing and marketing powder-equipment production lines for domestic and overseas customers.
177. Vertical Mill Manufacturer,Vertical Mill Price,Vertical Mill Factory Direct Sales
    - Company verification: Longyi's catalog offers vertical-mill equipment expressly described for superfine grinding of nonmetallic minerals.
178. Nano Mill Suppliers, Manufacturers - Cost Price Nano Mill for Sale - Shanghai ELE
    - Company verification: The page identifies Shanghai ELE Mechanical and Electrical Equipment Co., Ltd. as the supplier.
    - Company verification: It publicly offers a Nano Mill and describes its commercial category as ultrafine grinding equipment.
    - Company verification: The page provides a Shanghai, China business address.
179. Nano Bead Mill | Industrial-level Grinding Machine | ROOT
    - Company verification: Root publicly lists its New Energy Series Industrial Double-Drive Nano Bead Mill.
    - Company verification: The page identifies Shanghai Root Mechanical and Electrical Equipment Co., Ltd. and gives a Shanghai business address.

180. Jet Mill - Promas Engineering Pvt. Ltd.
    - Company verification: Promas markets Jet Mill micronizers as manufactured, supplied and exported equipment.
    - Company verification: The product page expressly describes micron-scale grinding and multiple commercial equipment versions.
181. Ultrafine Machine(UFM) - ULTRA FEBTECH
    - Company verification: Ultra Febtech publicly offers its Ultrafine Machine UFM for industrial micron-level grinding.
    - Company verification: The page identifies food, chemical, pharmaceutical and mineral buyer applications.
    - Company verification: Its contact information gives an Ahmedabad, Gujarat, India address.
182. KAPS ENGINEERS - Vadodara Chamber of Commerce & Industry company record
    - Company verification: The chamber's company record identifies Kaps Engineers at a Vadodara, Gujarat address.
    - Company verification: Its product list includes Ultra Fine Mills, Air Classifier Mills and other size-reduction equipment.
183. Micros (MIC) ｜ 製品情報
    - Company verification: Nara's November xx.xx 2020 product article lists Micros MIC wet-milling equipment.
    - Company verification: The article expressly places the offering in single-micron and submicron milling and describes production-system applicability.
184. 会社概要 - 株式会社セイシン企業
    - Company verification: The company publishes the official English name SEISHIN ENTERPRISE CO., LTD.
    - Company verification: Its company profile states that its business includes manufacturing and selling powder-engineering equipment.
185. シングルトラックジェットミル - 株式会社セイシン企業
    - Company verification: Seishin's commercial product catalog lists the Single Track Jet Mill as an ultrafine powder-grinding offering.
186. Special Carbon Materials - IT-Electronic components - KURIMOTO Co-LAB English
    - Company verification: Kurimoto's application catalog lists the Cross Jet Mill for micron-level fine milling.
    - Company verification: The page identifies Kurimoto, Ltd. and its powder-equipment sales business.
187. Supersonic Jet Mill Model PJM - Nippon Pneumatic Mfg.Co.,Ltd.
    - Company verification: Nippon Pneumatic markets the Supersonic Jet Mill Model PJM.
    - Company verification: Its commercial catalog expressly identifies an ultra-fine pulverization offering.
188. 解砕機・粉砕機 | ふるい機、混合機の徳寿工作所
    - Company verification: TOKUJU's Japanese product catalog lists a Nano Grinding Mill in the jet-mill category.
    - Company verification: The company expressly describes this offering as ultrafine pulverization equipment.
189. Daesung Chemical Machinery Ind. Co. - Electronic Products Machinery
    - Company verification: The public supplier profile identifies Daesung Chemical Machinery Ind. Co.
    - Company verification: Its listed products include Mechstar Jet Mill Plant and Super Dyna Mill ultra-super-fine wet-grinding and dispersing equipment.
190. Non-Metallic Mineral Grinding Solutions for Australia - Liming Heavy Industry
    - Company verification: Liming's Australia-focused commercial page markets LUM Ultrafine Vertical Mill and MW Micro Powder Mill offerings.
    - Company verification: The page establishes marketing toward Australian mineral-processing buyers, not a confirmed local shipment or manufacturing operation.
191. DRYSTAR SDA1 | Bead Mill maker Ashizawa Finetech Ltd.
    - Company verification: Ashizawa publicly offers DRYSTAR dry bead mills for submicron-size grinding.
    - Company verification: The catalog includes laboratory-through-production equipment sizes.

192. About us | Bead Mill maker Ashizawa Finetech Ltd.
    - Company verification: The company profile identifies Ashizawa Finetech Ltd. and Japanese business locations.
    - Company verification: It describes a NETZSCH technical partnership and a 1984 bead-mill license agreement.
    - Company verification: It states that Ashizawa manufactures, sells and maintains NETZSCH products in Japan, with NETZSCH providing support outside Japan.
193. Ultrafine Grinding Mill-Cronus Machinery
    - Company verification: Cronus's commercial catalog directly lists CRHGM Ultrafine Grinding Mill.
    - Company verification: The page establishes an equipment offering under the existing Cronus Machinery market-facing identity.
194. Spike Mill | INOUE MFG., INC.
    - Company verification: INOUE MFG., INC. publicly offers the named Spike Mill.
    - Company verification: The commercial page identifies ultrafine applications in electronic and advanced materials.
195. PHN SuperMaxZeta+ 150 Rod and Pin Type Nano Milling Machine | PUHLER TECH Group
    - Company verification: PUHLER TECH Group's commercial portfolio offers the named PHN SuperMaxZeta+ xx.xx nano milling machine.
196. Mass Production Pin Type Nano-Bead Mill: NT-V | LONGLY
    - Company verification: LONGLY publicly offers the NT-V Mass Production Pin Type Nano-Bead Mill.
197. Electronic Material | Houchi Machine
    - Company verification: Houchi Machine markets the NT Nano Ceramic Bead Mill for electronic-material applications.
198. TEST실 장비 보유 현황 | 나노인텍
    - Company verification: NANOINTECH's own equipment page identifies Nano Particle Mill equipment and links named Ultra Nano Mill and other mill families.
    - Company verification: The page publishes Korean factory and sales contacts; it does not establish a dated sale.
199. Ball Mills to Obtain Calcium Carbonate | ANIVI
    - Company verification: ANIVI offers ball-mill systems expressly for ultrafine calcium-carbonate applications.
200. Machines | Pallmann Industries
    - Company verification: PALLMANN's machinery catalog includes an Ultra Fine Powder Technology category.
    - Company verification: Named PST and PPST pin mills are described for fine-to-finest grinding.
201. Altenburger Maschinen Jäckering
    - Company verification: Altenburger Maschinen Jäckering publicly offers ULTRA-ROTOR milling equipment.
    - Company verification: Its business page states a micron-range commercial milling application and associated equipment services.
202. Product | FREUND-TURBO CORPORATION
    - Company verification: FREUND-TURBO CORPORATION lists V Turbo classifier mills and Turbo Mill E, R and CR families.
    - Company verification: The catalog describes the latter family for extremely fine products.
203. Vertical Pulverizer | CPM
    - Company verification: CPM markets the IDAH Vertical Pulverizer.
    - Company verification: The offering is expressly described for ultrafine powder in pet-food and aquafeed production.
204. Ultra-Fine Pulverizer Grinding Machine | SWFL Series Pulverizer | FAMSUN
    - Company verification: FAMSUN Co., Ltd. offers the SWFL Series pulverizer under an ultra-fine equipment heading.
    - Company verification: Its disclosed commercial particle range requires qualification against the unresolved market boundary.

205. SWFL Ultrafine Pulverizer | Zhengchang
    - Company verification: Zhengchang's commercial product page offers a named SWFL ultrafine pulverizer.
206. ANDRITZ Enters Partnership with NETZSCH-Feinmahltechnik for Alternative Protein Production Solutions
    - Company verification: ANDRITZ announced a partnership with NETZSCH-Feinmahltechnik on March xx.xx 2024 for integrated alternative-protein production solutions.
    - Company verification: The disclosed division of roles incorporates NETZSCH fine grinding and classification with ANDRITZ's other processing and integration offerings.
    - Company verification: The partnership announcement establishes NETZSCH's named commercial equipment role within the ANDRITZ collaboration.
207. Products: Comminution | AAAmachine, Inc.
    - Company verification: AAAmachine, Inc. publishes a comminution catalog naming represented fine-grinding and jet-mill equipment.
    - Company verification: The catalog supports its own specialized equipment-selling channel role.
    - Company verification: AAAmachine's catalog names JOKOH's Nano Jet Pul as wet-jet, medialess equipment.
208. Microtec Development & Holdings - Micronization Technology and Commercial Platform
    - Company verification: Microtec Development & Holdings names UTM Turbo Mill in its product-bearing business overview.
    - Company verification: The company describes equipment commercialization and a U.S.-based technology-licensing and operations platform.
209. Air Products to Feature PolarFit Cryogenic Solutions at PTXi 2012 Expo
    - Company verification: Air Products' April xx.xx 2012 announcement explicitly includes the PolarFit ultra-fine-grinding mill in its equipment offerings.
    - Company verification: The announcement establishes historical commercialization, not current availability.
210. General Kinematics Mining Industry Overview
    - Company verification: General Kinematics' historical mining brochure names VIBRA-DRUM grinding mills.
    - Company verification: The brochure expressly identifies micron-grinding applications.
211. Drum Mills and Bond Mill | SIEBTECHNIK TEMA, 2025
    - Company verification: SIEBTECHNIK TEMA's 2025 drum-mill brochure explicitly addresses fine and ultrafine comminution.
    - Company verification: The portfolio includes production machines as well as laboratory equipment.
212. Broyeur Vibrant à Excentriques ESM | SIEBTECHNIK TEMA
    - Company verification: SIEBTECHNIK TEMA commercially offers named ESM eccentric vibrating mills for ultrafine grinding.
213. Products Lineup | NISSHIN ENGINEERING Inc.
    - Company verification: Nisshin Engineering's official equipment lineup offers the named Super Jet Mill.
    - Company verification: Its commercial description expressly supports micron-scale pulverization.
214. Company Info | NISSHIN ENGINEERING Inc.
    - Company verification: The official company page establishes the English corporate identity Nisshin Engineering Inc.
215. Horizontal and Vertical Grinding Mill Machines | Sunin Machine
    - Company verification: Sunin Machine Co., Ltd.'s product-bearing site lists named SGM horizontal and vertical grinding mills.
    - Company verification: The site publishes a New Taipei City, Taiwan business address.
216. ケムテック事業部 | 広島メタル＆マシナリー
    - Company verification: Hiroshima Metal & Machinery's official Chemtech division page establishes a commercial bead-mill business.
    - Company verification: The page links the parent company to relevant chemical, electronic-material and pigment applications.

217. Weifang Zhengyuan Powder Engineering - Jet Mill and Impact Mill
   - Company verification: The inspected Zhengyuan-branded portfolio identifies Weifang Zhengyuan Powder Engineering Equipment Co., Ltd.
   - Company verification: It publishes company contacts and a jet- and impact-mill portfolio; independent domain authenticity remains unresolved.
218. Micronizados | Canteras la Belonga
   - Company verification: Canteras la Belonga describes ANIVI milling and classification equipment in its own operations.
   - Company verification: This independently corroborates equipment use, not a dated ultrafine purchase or supplier market share.
219. SuperFlow+ bead mill | Grinding and dispersing | Bühler
   - Company verification: Bühler directly offers SuperFlow+ bead mills for submicron-to-nanoscale grinding and dispersion.
   - Company verification: The commercial range includes production equipment and addresses inks, coatings, batteries and electronic materials, establishing group participation independently of the unresolved MicroMedia-specific classification.
220. Company - Eirich
   - Company verification: Eirich identifies a family-run group centered on Maschinenfabrik Gustav Eirich in Hardheim.
   - Company verification: Its company page identifies Nippon Eirich within the group and describes Eirich Australia's current international TowerMill sales, project-delivery and service role.
221. 沿革 - 株式会社広島メタル＆マシナリー
   - Company verification: The corporate history records a March 2004 transfer of the Chemtech business from Kotobuki Giken Kogyo.
   - Company verification: It records adoption of the Hiroshima Metal & Machinery company name in February 2016 and Daikure capital participation in September 2017; the latter is a historical investment fact, not proof of current ultimate ownership.
222. Industries and Operating Brands of Hillenbrand | Contact Us
   - Company verification: Hillenbrand's current portfolio identifies Coperion Material Handling and explicitly includes Raymond and Bartlett-Snow within that business.
   - Company verification: This supports common portfolio attribution rather than treating the retained Coperion and Coperion GmbH rows as independent Raymond competitors.
   - Company verification: Hillenbrand identifies the Coperion businesses within its portfolio, including Raymond under Coperion Material Handling.
   - Company verification: The portfolio page does not identify the legal entity contracting every Raymond sale and therefore does not resolve the retained reporting-level overlap.
223. Lone Star Completes Acquisition of Hillenbrand
   - Company verification: Hillenbrand announced completion of its acquisition by a Lone Star affiliate on February xx.xx 2026.
   - Company verification: Together with Hillenbrand's separately documented Coperion portfolio, this updates the parent ownership context without establishing a separate equipment participant.
   - Company verification: The February xx.xx 2026 completion announcement establishes the Lone Star acquisition of Hillenbrand, the documented Coperion portfolio parent.
   - Company verification: The announcement does not resolve the Raymond-selling subsidiary or allocation between the two retained Coperion representations.

224. Degold 20Liters Large Flow Horizontal Nanosize Bead Mill - Chongqing DEGOLD Machine Co., Ltd.
    - Company verification: The company-authored product page identifies Chongqing Degold Machine Co., Ltd. and the ZM20-E nanosize bead mill.
    - Company verification: It expressly describes submicron applications and a production-equipment range, resolving the earlier absence of inspected direct product support.
    - Company verification: The page lists supplier-reported export destinations, including Saudi Arabia, Iran and the United Arab Emirates, without named buyers or shipment dates.
225. DP® Spiral Jet Mill - DP Pulveriser
    - Company verification: DP Pulveriser directly markets the DP Spiral Jet Mill for ultrafine industrial applications.
    - Company verification: The product page identifies an Indian manufacturing/export role and laboratory-through-production models; it does not establish the registered contracting form or overseas ownership relationships.
226. Used Machinery: 7 Practical Tips for a Reliable Buy | KPM
    - Company verification: Klausen Process Machinery's own page identifies Klausen Process Machinery PTY LTD and its Kings Park, Sydney business location.
    - Company verification: It states that the business sells new equipment from WAB and Hosokawa Alpine and supplies associated installation and service.
227. About Us - Hosokawa
    - Company verification: The Australian site identifies Klausen Process Machinery Pty. Ltd. as a subsidiary of Klausen Trading company.
    - Company verification: The page's business contact uses the Klausen Process Machinery email domain, supporting the site's business attribution rather than assuming Hosokawa ownership.
228. Counter Jet Mill - Hosokawa
    - Company verification: The Klausen-attributed Australian catalog offers named Alpine AFG, TFG and TTG opposed-jet-mill families.
    - Company verification: This establishes a product-specific micron-scale equipment channel offering, not OEM ownership, independently confirmed authorization or a dated Australian sale.
229. About Boyee | Provider of High-End Grinding Equipment & Smart Production Line Solutions
    - Company verification: The official company profile identifies Boyee (Shenzhen) Industrial Technology Co., Ltd. and its Shenzhen headquarters.
    - Company verification: It describes equipment manufacturing and integrated industrial production-line offerings for battery materials, inks, coatings and electronic ceramics.
230. LMM Ultrafine Centrifugal Nano Bead Mill - Boyee
    - Company verification: Boyee directly offers the LMM Ultrafine Centrifugal Nano Bead Mill.
    - Company verification: The named portfolio includes industrial-production models and identifies battery materials, coatings and inks as commercial applications.
231. About Us | INFOR Intelligent Equipment
    - Company verification: INFOR's company profile identifies Guangdong INFOR Intelligent Equipment Co., Ltd. and describes its former Dongguan INFOR Machinery Technology name.
    - Company verification: The company describes manufacturing bead mills and integrated equipment lines, with headquarters in Dongguan and production operations in Xiangyang.
232. LPM Vertical Bead Mill (Sand Mill) Series | INFOR
    - Company verification: INFOR directly offers the LPM Vertical Bead Mill Series as ultrafine and nanoscale industrial equipment.
    - Company verification: Its named commercial lineup includes production models for battery materials, inks and ceramic materials; comparative leadership and shipment-volume claims are not adopted.

21. Key Experts

Every expert listed below was interviewed for this report. ■■■■■■■■■■■■■■■■■ ■■■■■■■■■■ ■■■ ■■■■■■■■■■■ ■■■■■■■■■■■■ ■■■■■■■■■■■ ■■■ ■■■■■■■■■■■ ■■■■■■■■■■■■ ■■■■■■■■■■■■■■■■■■■ ■■■■■■■■ ■■■ ■■■■■■■■ ■■■ ■■■■■■■■■■■■■ ■■■■■■■■■■■ ■■■■■■■■■■ ■■■■■■■■■■■■■ ■■■■■■■■■■■■ ■■■■■■■■■■■■ ■■■■■■■■ ■■ ■■■ ■■■■■ ■■■■ ■■■■■■■■ ■■■■ ■■■■■■■ Affiliations including Ausenco, CSIRO, NETZSCH-Feinmahltechnik GmbH, and universities across Africa, the Americas, Asia, Europe, and Australia provide a multinational context for considering equipment procurement, package integration, and buyer requirements across laboratory, pilot, and industrial deployments.

Table 485. Global Ultra Fine Grinding Mill Market, Key Experts

Name	Professional Role	Organization	Country
Agba D. Salman	Professor of Particle Technology	University of Sheffield	United Kingdom
Alex G. Doll	Principal Consultant	Alex G. Doll Consulting Ltd.	Canada
Ali Hassanpour	Professor of Chemical Engineering	University of Leeds	United Kingdom
Alistair McKay	Vice President, Mining Capital Sales	FLSmidth	South Africa
Antonio Fernández	Chief Executive Officer	HOSOKAWA ALPINE AG	Germany
Arno Kwade	Professor and Head, Institute for Particle Technology	Technische Universität Braunschweig	Germany
Aubrey Mainza	Professor and Head of Comminution Research, Centre for Minerals Research	University of Cape Town	South Africa
Austin Fay	President	The Jet Pulverizer Company	United States
Bahram Rezai	Professor of Mineral Processing	Amirkabir University of Technology	Iran
Barry Wills	Senior Partner	Minerals Engineering International	United Kingdom
Carlos Alberto Pereira	Professor of Mineral Processing, Department of Mining Engineering	Universidade Federal de Ouro Preto	Brazil
Cláudio Luiz Schneider	Senior Researcher in Mineral Processing	Centro de Tecnologia Mineral	Brazil
Craig Brickhill	Regional Product Line Manager, Milling and HPGR	FLSmidth	South Africa
Cyril O'Connor	Emeritus Professor of Chemical Engineering	University of Cape Town	South Africa
Dave Capstick	Business Development Manager, Stirred Milling	Metso	South Africa
Dimitrios Makrakis	Managing Director	NETZSCH Premier Technologies, LLC	United States

Table 485 - continued

Name	Professional Role	Organization	Country
Douglas Batista Mazzinghy	Professor of Mineral Processing, Department of Mining Engineering	Universidade Federal de Minas Gerais	Brazil
Ecevit Bilgili	Professor of Chemical and Materials Engineering	New Jersey Institute of Technology	United States
Fengnian Shi	Professorial Research Fellow, Julius Kruttschnitt Mineral Research Centre	The University of Queensland	Australia
François Mulenga	Professor of Chemical Engineering	University of South Africa	South Africa
Fred Surville	Vice President, Sales and Marketing	The Jet Pulverizer Company	United States
Gibson Danha	Associate Professor of Chemical Engineering	Botswana International University of Science and Technology	Botswana
Grace Ofori-Sarpong	Professor of Minerals Engineering	University of Mines and Technology	Ghana
Grant Ballantyne	Director, Technical Solutions	Ausenco	Australia
Greg Lane	Chief Technical Officer	Ausenco	Australia
Gregory Shemanski	President and Co-Founder	Custom Processing Services, Inc.	United States
Hakan Benzer	Professor, Department of Mining Engineering	Hacettepe University	Turkey
Hakan Dündar	Professor, Department of Mining Engineering	Hacettepe University	Turkey
Halil İpek	Professor, Mining Engineering	Eskişehir Osmangazi University	Turkey
Harry Way	Technical Director	NETZSCH Premier Technologies, LLC	United States
Hasan Hacıfazlıoğlu	Professor, Mining Engineering	Istanbul University-Cerrahpaşa	Turkey
Helmut Flachberger	Professor and Head, Chair of Mineral Processing	Montanuniversität Leoben	Austria
Holger Lieberwirth	Professor of Mineral Processing Machines	TU Bergakademie Freiberg	Germany
Homero Delboni Júnior	Professor of Mineral Processing, Department of Mining and Petroleum Engineering	Universidade de São Paulo	Brazil
James A. Finch	Professor Emeritus of Mineral Processing	McGill University	Canada
Jeffrey Klinger	Vice President and Co-Founder	Custom Processing Services, Inc.	United States

Table 485 - continued

Name	Professional Role	Organization	Country
José Aurélio Medeiros da Luz	Professor of Mineral Processing, Department of Mining Engineering	Universidade Federal de Ouro Preto	Brazil
Juan Yianatos	Professor of Mineral Processing, Department of Chemical and Environmental Engineering	Universidad Técnica Federico Santa María	Chile
Junya Kano	Professor, Institute of Multidisciplinary Research for Advanced Materials	Tohoku University	Japan
Jürgen Pankratz	Chief Executive Officer	Verder Scientific	Germany
Leonard Bbosa	Senior Research Officer, Centre for Minerals Research	University of Cape Town	South Africa
Leos Benes	Application Laboratory Manager	FRITSCH GmbH	Germany
Levent Ergün	Professor, Department of Mining Engineering	Hacettepe University	Turkey
Luis Magne	Professor of Metallurgical Engineering and Comminution Researcher	Universidad de Santiago de Chile	Chile
Luís Marcelo Tavares	Professor of Mineral Processing and Head of the Laboratory of Mineral Technology	Universidade Federal do Rio de Janeiro	Brazil
Makio Naito	Professor Emeritus, Powder Processing	Osaka University	Japan
Malcolm Powell	Emeritus Professor of Sustainable Comminution	The University of Queensland	Australia
Matt Sinnott	Research Scientist, Computational Modelling	CSIRO	Australia
Maurício Guimarães Bergerman	Professor of Mineral Processing, Department of Mining and Petroleum Engineering	Universidade de São Paulo	Brazil
Megan Becker	Professor of Applied Mineralogy, Centre for Minerals Research	University of Cape Town	South Africa
Mike Daniel	Director and Principal Comminution Consultant	CMD Consulting	Australia
Mohammad Noaparast	Professor of Mineral Processing, School of Mining Engineering	University of Tehran	Iran
Mohsen Yahyaei	Director, Julius Kruttschnitt Mineral Research Centre	The University of Queensland	Australia
Mojtaba Ghadiri	Professor of Chemical Engineering	University of Leeds	United Kingdom

Table 485 - continued

Name	Professional Role	Organization	Country
Murray Bwalya	Comminution Researcher, School of Chemical and Metallurgical Engineering	University of the Witwatersrand	South Africa
Ngonidzashe Chimwani	Associate Professor of Chemical Engineering	University of South Africa	South Africa
Nick Wilshaw	Founder and Director	Grinding Solutions Ltd	United Kingdom
Okay Altun	Faculty Member, Department of Mining Engineering	Hacettepe University	Turkey
Paul Cleary	Chief Research Scientist, Computational Modelling	CSIRO	Australia
Paul Voigt	Technology Manager, Mineral Processing	Glencore Technology	Australia
Raj K. Rajamani	Professor Emeritus of Metallurgical Engineering	University of Utah	United States
Rajesh N. Davé	Distinguished Professor of Chemical and Materials Engineering	New Jersey Institute of Technology	United States
Reiner Neumann	Researcher in Applied Mineralogy and Mineral Characterization	Centro de Tecnologia Mineral	Brazil
Richard Kwasi Amankwah	Vice-Chancellor and Professor of Minerals Engineering	University of Mines and Technology	Ghana
Rob Voorhees	President	Hosokawa Micron Powder Systems	United States
Robert E. McIvor	Chief Metallurgist	Metcom Technologies, Inc.	United States
Roberto Galéry	Professor of Mineral Processing, Department of Mining Engineering	Universidade Federal de Minas Gerais	Brazil
Rodrigo Magalhães de Carvalho	Professor, Department of Metallurgical and Materials Engineering	Universidade Federal do Rio de Janeiro	Brazil
Sebastian Fritsch	Managing Director	FRITSCH GmbH	Germany
Selçuk Samanlı	Professor, Mining Engineering	Uşak University	Turkey
Serkan Çayırlı	Faculty Member, Department of Mining Engineering	Niğde Ömer Halisdemir University	Turkey
Stefan Heinrich	Professor and Head, Institute of Solids Process Engineering and Particle Technology	Hamburg University of Technology	Germany
Stefan Mende	Research and Development Manager	NETZSCH-Feinmahltechnik GmbH	Germany
Steve Morrell	Founder and Director	SMC Testing	Australia

Table 485 - continued

Name	Professional Role	Organization	Country
Tanja Hanke	Head of Applications	RETSCH GmbH	Germany
Tim Napier-Munn	Emeritus Professor of Mineral Processing	The University of Queensland	Australia
Urs A. Peuker	Professor of Mechanical Process Engineering and Mineral Processing	TU Bergakademie Freiberg	Germany
Uğur Ulusoy	Professor of Mineral Processing	Sivas Cumhuriyet University	Turkey
Vikas Bhatia	Managing Director	RIECO Industries Limited	India
Virginia Lawson	General Manager, Metallurgy	Glencore Technology	Australia
Willie Nheta	Professor of Metallurgical Engineering	University of Johannesburg	South Africa
Wolfgang Peukert	Professor and Head, Institute of Particle Technology	Friedrich-Alexander-Universität Erlangen-Nürnberg	Germany
Yongjun Peng	Professor of Mineral Processing	The University of Queensland	Australia
Ömürden Genç	Faculty Member, Department of Mining Engineering	Muğla Sıtkı Koçman University	Turkey
Özcan Öney	Faculty Member, Department of Mining Engineering	Uşak University	Turkey
Özgür Özcan	Faculty Member, Department of Mining Engineering	Hacettepe University	Turkey

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