

Sealed Sample Preparation Pulverizer Grinding Bowl Set

Zirconia Tungsten Carbide Chrome Steel High Manganese Steel

Stainless Steel Agate

Item Number: KT-JLB



Introduction

Engineered for analytical pulverizers, these sealed grinding bowls in tungsten carbide, zirconia, agate, and alloy steels ensure rapid particle reduction to 200 mesh while eliminating contamination across demanding mining, metallurgy, geological exploration, ceramics, and chemical quality control laboratories worldwide.

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Application	Description	Key Benefit
Geological & Mineral Exploration	Pulverization of hard granites, core drills, quartzites, and mineral ores prior to fire assay or ICP-OES geochemical characterization.	High-abrasion resistance prevents structural wear when processing hard minerals up to Mohs hardness 8.5–9.0.
Metallurgy & Ferrous Metal QA	Rapid comminution of iron ores, blast furnace slags, sinters, and ferroalloys to establish chemical and physical consistency.	Rapid throughput achieves 200-mesh homogeneity in under 2 minutes, accelerating smelter furnace feed verification.
Cement, Clinker & Aggregate Testing	Grinding raw limestone, raw meal, cement clinker, and gypsum to monitor kiln combustion kinetics and calcination quality.	Hardened alloy configurations withstand heavy frictional abrasion without spalling or micro-cracking.
Advanced Ceramics & Electronic Oxides	Ultra-pure processing of dielectric powders, titanates, alumina, and rare earth precursors requiring strict absence of metallic contamination.	Chemically inert zirconia and agate configurations eliminate transition metal contamination down to sub-ppm levels.
Coal, Coke & Petrochemical Residue	Fine milling of solid fossil fuels, fly ash, and petroleum coke for calorific value measurement and proximate ash determination.	Airtight hermetic sealing preserves volatile matter and prevents fine coal dust dispersal into laboratory air.
Environmental Soil & Waste Analysis	Comminution of dried agricultural soils, contaminated sediment cores, and industrial solid waste for heavy metal trace analysis.	Non-porous interior surfaces prevent analyte carryover and facilitate complete sample recovery for trace detection.

Model Designation	Nominal Batch Capacity	Base Outer Diameter (mm)	Total Height (mm)	Compatible Materials	Target Output Fineness
KT-JLB-100	100 g	152 mm	72 mm	Tungsten Carbide, High Manganese Steel, Chrome Steel, Stainless Steel, Zirconia, Agate	200 mesh (≤74 μm)
KT-JLB-150	150 g	156 mm	82 mm	Tungsten Carbide, High Manganese Steel, Chrome Steel, Stainless Steel, Zirconia, Agate	200 mesh (≤74 μm)
KT-JLB-200	200 g	182 mm	85 mm	Tungsten Carbide, High Manganese Steel, Chrome Steel, Stainless Steel, Zirconia, Agate	200 mesh (≤74 μm)
KT-JLB-400	400 g	210 mm	95 mm	Tungsten Carbide, High Manganese Steel, Chrome Steel, Stainless Steel, Zirconia, Agate	200 mesh (≤74 μm)
KT-JLB-1000	1000 g	256 mm	110 mm	Tungsten Carbide, High Manganese Steel, Chrome Steel, Stainless Steel	200 mesh (≤74 μm)

Material Type	Mohs Hardness	Typical Density (g/cm³)	Elemental Composition Profile	Recommended Sample Types
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Tungsten Carbide	8.5 – 9.0	14.5 – 14.9	WC + Co binder	Extremely hard materials, cemented carbides, ferrosilicon, ores, abrasives
High Manganese Steel	5.5 – 6.5	7.8 – 7.9	Fe, Mn (11-14%), C	General mining minerals, standard rocks, coal, industrial slag, construction aggregate
Chrome Steel	6.0 – 7.0	7.7 – 7.8	Fe, Cr (12-18%), C	Hard minerals, abrasive geological rock cores, ceramics, general metallurgy
Stainless Steel	5.5 – 6.0	7.9 – 8.0	Fe, Cr (18%), Ni (8-10%)	Corrosive chemicals, food-grade materials, plant tissue, mid-hardness minerals
Zirconia (YSZ)	8.0 – 8.5	5.9 – 6.0	ZrO ₂ + Y ₂ O ₃	High-purity electronic ceramics, pharmaceutical formulations, trace iron-free assays
Natural Agate	6.5 – 7.0	2.6 – 2.7	SiO ₂ (>99.5%)	Soil trace analysis, environmental sludge, soft-to-medium hardness biologicals