

Ash And Volatile Matter Crucibles And Crucible Racks For Laboratory Proximate Analysis

Item Number: KT-GG

Introduction

Designed for rigorous proximate fuel testing, this laboratory suite integrates high temperature volatile matter crucibles, resilient nickel chromium racks, muffle furnace ash dishes, and precision weighing bottles to deliver unmatched gravimetric accuracy, superior thermal endurance, and dependable operational performance.

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Application	Description	Key Benefit
Proximate Coal Analysis	Quantitative determination of moisture, volatile matter, ash yield, and fixed carbon in thermal and metallurgical coal batches according to ISO, ASTM, and GB standard protocols.	Guarantees compliance with international trade specifications while preventing sample oxidation or mass measurement errors.
Metallurgical Coke Testing	Evaluation of thermal stability, volatile gas content, and residual ash in blast furnace coke and foundry carbon additives under high-heat conditions.	Resists structural distortion and chemical fluxing at 1200°C, maintaining sample purity during high-temperature carbon testing.
Biomass & Biofuel Characterization	Ash content verification and volatile combustion indexing of wood pellets, agricultural residues, and refuse-derived fuels (RDF).	Optimized shallow dish profile ensures rapid oxygen diffusion, resulting in complete organic burnout without sample unburnt carbon loss.
Power Plant Fuel Quality Auditing	High-throughput proximate screening of pulverized coal feedstocks to calculate gross calorific values, boiler efficiency, and slagging potential.	Standardized six-place batch handling accelerates testing turnover, reducing furnace door open duration and lowering energy consumption.
Cement Kiln Raw Material Assaying	Loss-on-ignition (LOI) testing and decarbonation profiling of limestone, clay, raw meal mixtures, and alternative kiln fuels.	Chemically inert ceramic surfaces prevent cross-reaction with alkaline earth metals and basic mineral oxides at peak furnace temperatures.
Geological & Mineral Ore Assaying	Volatilization studies, roasting loss measurements, and ash constituent determination across mineral ores, metallurgical fluxes, and mineral concentrates.	Exceptional dimensional stability and tight tare tolerances ensure sub-milligram balance reproducibility across repeated roasting cycles.
Environmental Sludge & Waste Incineration	High-temperature gravimetric residue quantification for dewatered municipal sludge, industrial filter cakes, and hazardous incinerator fly ash.	High-durability nickel-chromium alloy racks withstand acidic and sulfurous combustion vapors without degrading or shedding particulate matter.

Parameter	KT-GG-VMC (Volatile Crucible)	KT-GG-VMR (Volatile Rack)	KT-GG-AD (Ash Dish / Boat)	KT-GG-ADR (Ash Dish Rack)	KT-GG-WB40 (Analytical Bottle)	KT-GG-WB70 (Total Moisture Bottle)
Component Type	Volatile Matter Crucible with Lid	Six-Hole Crucible Handling Rack	Rectangular Muffle Ashing Dish	Six-Hole Ash Dish Handling Rack	Analytical Moisture Weighing Bottle	Total Moisture Weighing Bottle
Primary Material	Refractory Technical Ceramic	Nickel-Chromium (Ni-Cr) Alloy Wire	Refractory Technical Ceramic	Nickel-Chromium (Ni-Cr) Alloy Wire	Ground-Stopper Borosilicate Glass	Ground-Stopper Borosilicate Glass
Maximum Working Temperature	~1200°C	~1200°C	~1200°C	~1200°C	150°C (Drying Oven)	150°C (Drying Oven)
Top Dimensions	Outer Diameter: 33 mm	Length: 128 mm	Opening Length: 55 mm	Length: 135 mm	Outer Diameter: 40 mm	Outer Diameter: 70 mm

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Bottom Dimensions	Outer Diameter: 18 mm	Width: 90 mm	Bottom Length: 45 mm	Width: 110 mm	Flat Ground Base	Flat Ground Base
Width / Aperture	Circular Geometry	6 Standard Crucible Apertures	Width: 22 mm	6 Dish Positioning Bays	Circular Geometry	Circular Geometry
Height	40 mm	50 mm	14 mm	50 mm	Height: 25 mm	Height: 35 mm
Nominal Capacity / Mass Range	20 ml Volumetric Capacity	Holds 6 × KT-GG-VMC	Thin-Layer Ashing Volume	Holds 6 × KT-GG-AD	Specimen Mass: 0.9 g to 1.1 g	Specimen Mass: 10 g to 12 g
Atmosphere Suitability	Inert Pyrolysis / Neutral	Oxidizing / Neutral / Inert	Oxidizing Combustion	Oxidizing / Neutral / Inert	Ambient / Desiccator / Air Oven	Ambient / Desiccator / Air Oven
Applicable Test Metric	Volatile Matter (VM)	Batch Volatile Manipulation	Ash Yield (A) / Loss-on-Ignition	Batch Ashing Manipulation	Analytical Moisture (Mad)	Total Moisture (Mt)

Engineering Feature	Specification Detail
Nickel-Chromium Wire Alloy Grade	High-temperature Ni-Cr resistance wire engineered for thermal deformation resistance and anti-scaling performance
Ceramic Thermal Shock Tolerance	Survives rapid ambient-to-1200°C insertion and rapid extraction without micro-fracturing or wall delamination
Chemical Compatibility	Inert toward volatile sulfur compounds, carbonaceous volatiles, silicate slags, and ambient atmospheric moisture
Batch Alignment Accuracy	Symmetrical aperture spacing ensures identical gas flow dynamics and furnace radiation access for all 6 positions
Tare Weight Reproducibility	Low-porosity vitrified ceramic and borosilicate glass surfaces prevent moisture absorption, ensuring constant baseline tare mass