

Calorimeter Accessories Bomb Combustion Vessels Crucibles And Analytical Consumables

Item Number: KT-LRY



Introduction

Optimize analytical precision with premium calorimeter accessories including oxygen combustion vessels ignition wire quartz crucibles benzoic acid calibration standards and specialized sealing rings engineered for rugged durability high thermal stability and strict compliance with international ASTM and ISO calorimetry standards

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Application	Description	Key Benefit
Coal and Coke Fuel Evaluation	Daily calorific testing of raw coal, pulverized fuel, and metallurgical coke in accordance with ASTM D5865 and ISO 1928 standards.	Resists corrosive sulfuric and nitric acid condensation, prolonging vessel operational life and ensuring reproducible calorific determinations.
Petroleum and Liquid Fuels Testing	Measurement of heat value across fuel oils, diesel, aviation kerosene, and heavy residual fractions using specialized gelatin or tape encapsulation.	Prevents unburned residue and volatile flash-off through secure ignition geometry and ultra-stable crucible positioning.
Biomass and Alternative Waste Fuels	Determination of gross energy content in wood pellets, agricultural residue, refuse-derived fuel (RDF), and municipal solid wastes.	Heavy-duty pelleting dies eliminate powder splattering, ensuring complete ignition and predictable combustion kinetics.
Hazardous Waste Halogen Profiling	Quantitative bomb wash analysis for total sulfur, chlorine, fluorine, and heavy metals following complete oxidative combustion.	Non-reactive internal vessel finishes guarantee complete recovery of ionic condensates without surface adsorption.
Food and Animal Feed Science	Gross energy quantification of grain blends, feed rations, dairy solids, and dietary formulations for nutritional balance studies.	High-precision thermal corrections and zero sample cross-contamination guarantee compliance with international food labeling regulations.
Energetic Materials and Chemical R&D	Controlled caloric evaluation of chemical propellants, pyrotechnic primers, and polymer formulations under high-pressure oxygen environments.	Certified high-strength vessel metallurgy and overpressure protection ensure absolute containment and operator safety under rapid energy release.
Commercial Testing and Inspection Labs	Continuous multi-shift testing running dozens of daily sample burns across diverse customer-submitted raw materials.	High-grade elastomeric seals and wear-resistant valve assemblies dramatically lower preventative maintenance downtime and consumable operating costs.

Component Category	Item Code	Material / Construction	Operating Limits / Capacity	Standard Compliance
Standard Oxygen Combustion Vessel	KT-LRY-BOMB-STD	Austenitic stainless steel (AISI 316Ti / 316L)	3.5 MPa charging pressure; 30 MPa hydrostatic proof; 300 mL volume	ASTM D5865, ISO 1928, GB/T 213
Halogen/Acid-Resistant Vessel	KT-LRY-BOMB-CR	Hastelloy C-276 / Inconel cladding	3.5 MPa charging pressure; 32 MPa hydrostatic proof; 320 mL volume	ASTM D240, ASTM D4809, DIN 51900
Quartz Combustion Crucibles	KT-LRY-CRU-QZ	High-purity fused optical quartz (>99.9% SiO ₂)	Thermal shock resistant up to 1200°C; 1.5 mL to 2.5 mL volume	Ash-free combustion, ISO 1716
Stainless Steel Crucibles	KT-LRY-CRU-SS	Heat-resistant 310S stainless steel	Continuous duty up to 1050°C; 2.0 mL volume; 0.5 mm wall thickness	ASTM E711, ASTM D5865
Platinum Crucibles	KT-LRY-CRU-PT	Chemically pure platinum (99.95% Pt)	Unreactive up to 1600°C; 2.0 mL volume; zero catalytic oxidation drift	High-precision thermodynamic research
Nickel-Chromium Ignition Wire	KT-LRY-IGN-NC	80/20 Ni-Cr alloy wire (0.1 mm to 0.15 mm dia.)	5.86 J/cm heat of combustion; resistance 14.5 Ω/m	ASTM D5865, ASTM D240, ISO 1928

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Platinum Ignition Wire	KT-LRY-IGN-PT	Pure platinum wire (0.1 mm dia.)	Non-consumable fuse wire; zero net calorific contribution	Micro-calorimetry and reference labs
Benzoic Acid Calibration Standard	KT-LRY-CAL-BA	Analytical grade benzoic acid (99.99% purity)	Certified calorific value: 26,454 J/g $\pm$ 5 J/g; 1.0 g pre-formed pellets	Traceable to NIST / Metrological references
Primary Vessel Main O-Rings	KT-LRY-SEAL-V	Fluoroelastomer (FKM / Viton) / High-density EPDM	Working pressure 0–35 MPa; temperature -20°C to 180°C	Chemical and aggressive solvent resistant
Benchtop Pellet Press	KT-LRY-PRS-MAN	Hardened alloy tool steel frame with hydraulic lever	0 to 20 kN manual force; interchangeable 6 mm, 8 mm, and 13 mm dies	Solid fuel and biomass sample prep
Oxygen Charging Manifold & Hose	KT-LRY-OXY-KIT	Dual-stage brass/stainless regulator with safety valve	0–5 MPa delivery range; 30 MPa input rating; integrated pressure gauge	CE, EN ISO 2503
Combustion Fuse Cotton Thread	KT-LRY-IGN-CTN	100% degreased natural pure cotton fiber	17.5 J/cm heat of combustion; low residue (<0.02% ash)	Standard ignition booster application