

Dual Tube Sulfur Determinator High Temperature Combustion Sulfur Analyzer

Item Number: KT-TE11



Introduction

Optimize laboratory throughput with this dual tube sulfur determinator engineered for precision high temperature combustion analysis of coal metallurgy and mineral samples adhering strictly to standardized analytical protocols with dual sample testing capability and reliable thermal performance across demanding industrial testing environments.

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Application	Description	Key Benefit
Coal & Coke Quality Assurance	Quantification of total sulfur content in thermal coal, metallurgical coking coal, and petroleum coke per standard combustion protocols.	Prevents boiler corrosion, ensures regulatory environmental compliance, and optimizes combustion efficiency.
Blast Furnace & Steelmaking Metallurgy	Measurement of sulfur impurities in raw iron, scrap steel, ferroalloys, and metallurgical fluxes.	Controls sulfur-induced embrittlement in structural alloys and verifies melt chemistry prior to casting.
Geological & Mining Ore Assay	Rapid evaluation of sulfide minerals, pyrites, and sulfate fractions within mineral exploration cores and mine tailings.	Accelerates mineral grading, informs flotation recovery workflows, and aids environmental acid-rock drainage forecasting.
Cement & Building Materials Testing	Analysis of total sulfur in clinker, raw gypsum, limestone, and alternative fuels utilized in cement kilns.	Prevents ring formation in rotary kilns and ensures finalized structural binders satisfy international mechanical standards.
Environmental & Ash Residue Verification	Precise tracing of residual sulfur content in bottom ash, fly ash, and industrial flue scrub sludges.	Verifies desulfurization performance and validates waste byproduct safety for downstream reclamation.
Petrochemical Catalyst & Slag Analysis	Detection of bound sulfur species in spent catalysts, refinery solid residues, and synthetic carbonaceous additives.	Informs catalyst regeneration cycles and safeguards downstream chemical processing systems against poisoning.

Specification Parameter	Technical Detail / Value
Product Item Number	KT-TE11
Analytical Standard Compliance	GB/T 214-2007 (High-Temperature Combustion Neutralization Method)
Furnace Operating Temperature	Continuous working: 1200°C; Short-term maximum: up to 1500°C
Constant Temperature Zone Length	80 mm
Thermal Gradient within Constant Zone	$\Delta T < 10^{\circ}\text{C}$
Ramp-Up Heating Velocity	20°C to 25°C / min (Reaches 1200°C within 60 minutes)
Heating Element Type & Geometry	Double-threaded silicon carbide tube ($\Phi 70/60 \times 250/100/30$ mm)
Reaction Combustion Tube Material & Dimensions	High-purity corundum stepped/reducing tube ($\Phi 22/18 \times 760$ mm / $\Phi 10/\Phi 6$ mm)
Operating Sample Capacity	Dual-tube configuration (2 simultaneous single-sample tests)
Temperature Controller Architecture	Silicon-Controlled Rectifier (SCR) proportional controller
Controller Measurement & Regulation Range	0°C to 1600°C
Gas Circuit Assembly	Integrated gas purification, oxygen flow metering, and absorption system

Specification Parameter	Technical Detail / Value
Quantitative Detection Mechanism	Combustion oxidation to SO ₂ , H ₂ O ₂ oxidation to H ₂ SO ₄ , standard NaOH titration
Power Rating	Approximately 4.0 kW
Electrical Power Requirements	AC 220V ± 10%, 50 Hz