

Rapid Intelligent Sulfur Analyzer Automatic Coulometric Coal And Coke Sulfur Determinometer

Item Number: KT-TE55



Introduction

Engineered for precise coulometric sulfur determination across coal, coke, and combustible fuels, this intelligent sulfur analyzer provides automated titration, robust thermal regulation, dynamic curve correction, and rapid testing turnaround in strict compliance with standard industrial laboratory quality testing protocols.

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Application	Description	Key Benefit
Thermal Power Generation	Routine screening of pulverized boiler coal to monitor sulfur input and optimize flue-gas desulfurization (FGD) systems.	Eliminates excessive scrubber reagent waste while ensuring compliance with national sulfur emission caps.
Metallurgical Coking Operations	Quantitative evaluation of metallurgical coke, washed coking coals, and coal blends intended for blast furnace reduction.	Prevents excess sulfur contamination in crude molten iron, minimizing downstream de-sulfurizing operational costs.
Commercial Custody Transfer & Trade	Independent inspection of export and domestic coal shipments across port terminals and railway logistics centers.	Provides legally defensible, highly reproducible test data compliant with international contract tolerances.
Coal Mining & Preparation Plants	Real-time monitoring of run-of-mine (ROM) coal, clean coal fractions, and rejected gangue during washing processes.	Delivers immediate process feedback to adjust dense medium separator densities and optimize coal washing efficiency.
Cement & Lime Kiln Manufacturing	Quality assessment of industrial petcoke, waste-derived fuels, and bituminous firing agents used in rotary calcination kilns.	Prevents volatile sulfur-induced kiln ring formations and ensures finished clinker meets mechanical performance limits.
Chemical & Petrochemical By-Products	Trace and bulk sulfur determination in solid carbon residues, pitch coke, and synthetic coal-to-chemical synthesis feedstocks.	Safeguards sensitive catalytic cracking catalysts and upstream reactors from irreversible sulfur-poisoning events.
Environmental Waste Characterization	Analysis of industrial solid sludge, combustible processing wastes, and biomass pellets before incineration.	Enables precise stoichiometric calculation of acid gas neutralization reagents for municipal and industrial incinerators.

Specification Parameter	Value / Characteristic
Product Item Number	KT-TE55
Method Standard Compliance	GB/T 214-2007 (Determination of Total Sulfur in Coal)
Primary Detection Method	Coulometric Titration via High-Temperature Combustion
Total Sulfur Measuring Range	0.00% – 99.00%
Measurement Resolution	0.0001% (0.0001 mass fraction)
Sample Analysis Time	3 – 9 minutes per sample (automated endpoint return)
Furnace Operating Temperature	1150 °C (user adjustable based on application)
Temperature Control Precision	± 5 °C at 1150 °C
Temperature Measurement Accuracy	Class 0.5 Instrument Precision
Heating Element Type	Silicon Carbide (SiC) High-Temperature Heating Rod

Specification Parameter	Value / Characteristic
High-Temperature Hot Zone	≥ 90 mm uniform thermal length
Thermal Heating Rate	25 °C - 30 °C / min (ambient to 1200 °C in ~35 minutes)
Post-Startup Stabilization Time	≤ 1 minute to reach operational baseline
Electrolytic Cell Capacity	450 mL internal volume
Electrode Material	High-purity metallic platinum (Pt) indicator/generator pins
Electrolyte Management	Hydrodynamic anti-backflow protection design
Filter Disc Maintenance	Quick-release structure for sintered glass melting plate
Carrier Gas Flow Rate	1000 mL/min regulated flow
System Control Core	Single-chip microcontroller with multi-parameter curve correction
Data Output	Integrated micro-printer and high-contrast digital display
Operational Power Supply	220 V ± 20%, 50 Hz
Maximum Power Consumption	≤ 2.2 kW total electrical load