

Microcomputer Automatic Ash Fusion Tester Coal Ash Melting Point Determination Apparatus

Item Number: KT-TE21



Introduction

Evaluate ash fusibility with this microcomputer automatic ash fusion tester. Built with a 1600°C horizontal furnace, automated ramp control, CCD optical imaging, and software logging for consistent laboratory thermal analysis.

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Application	Description	Key Benefit
Thermal Power Generation	Routine monitoring of coal ash melting points to predict slagging, clinker formation, and boiler tube fouling during pulverized coal combustion.	Prevents boiler shutdowns, optimizes soot-blowing cycles, and enhances overall thermal boiler efficiency.
Coal Mining & Quality Inspection	Commercial laboratory grading and certification of raw and washed coal shipments to verify compliance with contractual thermal quality specifications.	Guarantees transparent quality documentation, minimizes delivery disputes, and verifies commercial product grades.
Coal Gasification Operations	Assessment of coal mineral fusibility to evaluate slag tapping behavior and liquid ash viscosity in high-pressure entrained-flow and fixed-bed gasifiers.	Ensures uninterrupted liquid slag discharge, prevents tap-hole blockage, and reduces refractory lining corrosion.
Metallurgical & Coking Industry	Evaluation of ash fusibility in blast furnace injection coals and metallurgical coke blends affecting permeability and molten iron drainage.	Maintains smooth burden descent, stabilizes furnace hearth operation, and improves hot metal productivity.
Biomass & Co-Firing Plants	Determination of complex ash melting patterns and eutectic interactions in agricultural residues, wood pellets, and biomass-coal fuel mixtures.	Identifies low-melting alkaline silicate phases early to prevent catastrophic superheater corrosion and fouling.
Combustion Research & Academics	In-depth scientific investigation of synthetic mineral mixtures, additive-assisted ash modification, and high-temperature phase transition kinetics.	Delivers verifiable digital photographic evidence and precise temperature logs for high-level academic research.

Parameter Category	Specification Details (KT-TE21)
Product Identifier	KT-TE21
Furnace Orientation	Horizontal Tube Furnace Structure
Heating Element	Premium Silicon Carbide (SiC) Tube
Maximum Heating Temperature	1600°C
Temperature Sensor	Platinum Rhodium - Platinum Thermocouple (Type S)
Heating Control Architecture	Microcomputer-driven automatic adjustment and PID regulation
Temperature Ramp Rate Phase 1 (< 880°C)	15°C/min to 20°C/min
Temperature Ramp Rate Phase 2 (880°C to 900°C)	Decelerating transition ramp: 15°C/min down to 1°C/min
Temperature Ramp Rate Phase 3 (900°C to 1600°C)	Strict standard rate: 5 ± 1°C/min
Standard Compliance	Conforms strictly to GB/T 219-2004 thermal profile requirements
Optical Imaging System	Integrated industrial CCD camera assembly
Image Processing & Identification	Automated cone edge tracking and software-based phase evaluation
Operating Environment & Platform	Windows-based analytical software package

Parameter Category	Specification Details (KT-TE21)
Data Archival & Retrieval	Automatic hard drive storage of specimen photos, temperatures, and heating curves
Heating Power Supply	220V $\pm$ 10%, 50 Hz
Operating Heating Current	30 A