Automatic Ash Fusion Tester For Coal And Coke Ash Fusibility Determination

Item Number: KT-TE22

Introduction

Engineered for rigorous coal and coke analysis, this advanced ash fusion tester provides automated heating profiles up to 1600°C, exceptional ±3°C measurement precision, customizable isothermal dwell cycles, and integrated fault diagnostics to ensure dependable fusibility characterization across demanding laboratory operations.

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Application	Description	Key Benefit
Coal-Fired Power Utilities	Monitoring pulverised fuel ash melting behavior to anticipate clinker formation, slagging on boiler walls, and fouling of convective tube bundles.	Reduces forced boiler outages, optimizes soot-blowing schedules, and improves overall boiler thermal efficiency.
Metallurgical Coke & Ironmaking	Assessing coke mineral matter behavior under blast furnace conditions and analyzing the ash fusibility of metallurgical blends.	Protects blast furnace permeability, improves hot metal quality, and stabilizes tuyere race combustion dynamics.
Coal Gasification & Syngas Production	Evaluating feedstock behavior in slagging entrained-flow gasifiers and moving-bed reactors to determine suitable slag flow tapping temperatures.	Prevents nozzle plugging, maintains uniform liquid slag tap discharge, and extends refractory lining service life.
Commercial Fuel Testing Laboratories	Conducting third-party commercial arbitration, contract compliance screening, and certified analytical reporting of solid mineral fuels.	Delivers defensible, high-precision test results conforming to domestic and international trade criteria with high throughput.
Biomass & Waste Co-Firing Facilities	Evaluating the interaction between coal ash and low-melting alkaline ash components derived from agricultural biomass or municipal refuse.	Uncovers corrosive eutectics and complex agglomeration mechanisms early, mitigating severe superheater corrosion.
Refractory & Ceramic Engineering	Testing the pyro-plastic deformation and thermal softening of high-temperature ceramic cones, glazes, and industrial refractory raw materials.	Guarantees exact thermal boundary identification for high-temperature composite formulations and kiln furniture.

Parameter Category	Specification Attribute	Value / Operational Characteristic
Equipment Model	Item Code	KT-TE22
Methodological Standards	Test Compliance	GB/T219-2008 / GB/T219-2004 (Standard Test Method for Fusibility of Coal and Coke Ash)
Thermal Performance	Temperature Measurement Range	0°C to 1600°C
Thermal Performance	Temperature Measurement Accuracy	±3°C
Heating Dynamics	Pre-900°C Heating Ramp Rate	15°C/min to 20°C/min (User Selectable)
Heating Dynamics	Post-900°C Heating Ramp Rate	5°C/min ± 1°C/min (Automated Linear Control)
Heating Dynamics	Heating Mode Options	Automated standard ramping or customizable programmed thermal profiles
Temporal Precision	Chronometric Clock Timing Error	Less than 1 s/h (< 1 second per hour)
Temporal Precision	Isothermal Program Capability	User-definable timed constant-temperature soak routines
Diagnostic Architecture	System Protection & Self-Test	Automated fault identification with real-time multi-error alarms and operator prompts
Electrical Requirements	Rated Operating Current	30A
Electrical Requirements	Power Supply Specification	220V AC ± 10%, 50 Hz

Parameter Category	Specification Attribute	Value / Operational Characteristic
Target Samples	Specimen Compatibility	Coal ash, metallurgical coke ash, synthetic solid fuels, and mineral residue cones