MS Synchronous Thermal Analyzer: Precision STA for Advanced Material Research

Model **MSDSCTGA1550STASWISS** | Brand **Master Science**



Synchronous Thermal Analyzer (STA)

Are you a lab researcher or equipment purchaser struggling with inconsistent thermal analysis results, time-consuming setups, or limited instrument versatility?

KEY HIGHLIGHTS

- Time-Efficient Operations
- High-Quality Built-In Balance
- Position-Independent Weighing
- Closed Ceramic Furnace
- Capillary Water Circulation Cooling

Request a Quotation
Contact us for pricing, configuration options and delivery details.

support@themsci.com
www.themsci.com

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Overview

The MS Synchronous Thermal Analyzer (Model: MSDSCTGA1550STASWISS) is your all-in-one solution for simultaneous TGA and DSC measurements, delivering unmatched precision from room temperature to 1550°C. Designed for demanding applications in plastics, pharmaceuticals, catalysts, and composites, this Swiss-engineered instrument streamlines your workflow, enhances data accuracy, and accelerates material insights—helping you overcome common pain points like unreliable baselines, slow cooling times, and manual calibrations.

Achieve temperature fluctuations as low as ±0.01°C and mass resolution of 0.01mg, minimizing errors in critical experiments and ensuring repeatable results even in high-temperature scenarios.

Modular design allows quick furnace swaps and automated gas switching, cutting setup time and enabling seamless transitions between heating, cooling, and isothermal tests—ideal for high-throughput labs.

Measure melting points, oxidation induction, adsorption/desorption, and more, solving pain points like incomplete data from separate instruments and supporting diverse materials from polymers to inorganics.

Key Benefits

SUPERIOR PRECISION AND RELIABILITY

Time-Efficient Operations

KEY FEATURES

High-Quality Built-In Balance
Imported weighing system with internal calibration, temperature compensation, and constant-temperature water bath for superior accuracy and repeatability—perfect for detecting subtle mass changes.

Position-Independent Weighing
Built-in quality level guidance ensures consistent results regardless of sample placement within the scale range.

Closed Ceramic Furnace
Improves signal sensitivity, resolution, and baseline stability while supporting dual gas paths for airtight experiments.

Capillary Water Circulation Cooling
Wraps the furnace for rapid cooling, reducing wait times between runs.

Customizable Exhaust Interfaces
Reserves ports for secondary exhaust gas analysis, ideal for environmental or advanced studies.

Flexible Sensors
Imported brackets with switchable K-type or E-type sensors, optimized for polymer phase transitions and vitrification.

Dual Temperature Sensors
Monitors furnace and sample temperatures simultaneously for precise control.

Dynamic PID Temperature Control
Optimized algorithm enhances robustness in dual-mode operations.

FTC and STC Modes
Friendly, flexible temperature settings for diverse scenarios.

Multi-Point Calibration
On both hardware and software for scenario-specific accuracy.

High-Frequency Processor
Faster processing for efficient control.

Intelligent Atmosphere Switching
Software-driven for higher efficiency.

Comprehensive Testing
Supports heating, cooling, and isothermal processes.

Touch Screen Interface
Real-time status and data display.

Smart Software
USB communication for baseline deduction, auto reports, and data processing (e.g., glass transition, oxidation induction, melting/crystallization).

Top-Loading Modular Design
Easy furnace/sensor swaps for wide applications and maintenance.

Weight Gain/Loss Experiments
Ideal for adsorption, decomposition, and more.

Versatile Material Analysis
Measures DSC/DTA (melting, crystallization, reaction heat) and TG (stability, composition ratios, water content).

These features emphasize precision, making the MS STA a reliable partner for solving pain points like unstable weighing in variable environments or inefficient multi-test setups.

Additional Information

By integrating these features, the MS STA eliminates the frustration of fragmented analysis, providing synchronized TG and DSC/DTA data from the same sample. This leads to faster decision-making, reduced material waste, and compliance with stringent quality standards in research and industry. These specs highlight the instrument's precision, with features like dual temperature sensors for simultaneous furnace and sample monitoring, ensuring accurate insights into material behaviors such as thermal stability, decomposition, and phase transitions.

Technical Specifications

PARAMETER	SPECIFICATION
ParameterSpecification	
Temperature RangeRoom temperature to 1550°C	
Temperature Resolution0.01°C	
Temperature Fluctuations±0.01°C	
Heating Rate0.1 to 100°C/min	
Balance Measurement Range0.01mg to 5g	
Mass Resolution0.01mg	
DSC Range0 to ±2000 mW	
DSC Sensitivity0.001 mW	
Constant Temperature Time0 to 500 min (arbitrary setting)	
Cooling Time30 min (from 1000°C to 100°C)	
Toggle Rate16.6 Hz	
Sample Rate0.05 to 10 Hz (programmable)	
Sensor TypeK-type (standard) or E-type (optional), software-switchable	
Experimental ModesFTC and STC (arbitrary setting)	
Experimental TypesWeight loss, weight gain (e.g., adsorption)	
Temperature ControlHeating, constant temperature, cooling	
Instrument CalibrationMulti-point temperature correction on both host and software	
Display24-bit color, 7-inch LCD touch screen	
Atmosphere ControlDual atmospheres, automatic software switching	
Parameter StandardsIncludes standard substances for user calibration	
Power SupplyAC 220V / 50Hz	
Adjustable Sampling Frequency0.05-10Hz settings for tailored data collection.	
Our analyzer emphasizes precision engineering for laboratory excellence. Below is a clear overview of its capabilities:	
Program Temperature ControlUp to 12 stages, with cyclic scanning up to 9999 times (auto-save data)	
Multi-Stage Programming12-level control with cyclic scanning up to 9999 times and auto data saving.	

Applications

User-Friendly Interface
A 7-inch full-color LCD touch screen with real-time data display and intelligent software for automatic reporting, baseline deduction, and multi-point calibration—reducing operator training needs and human error.

Enhanced Safety and Maintenance
Closed ceramic insulation, exhaust gas interfaces, and capillary cooling systems protect your samples and extend instrument life, addressing concerns over contamination and downtime.

Cost-Effective Long-Term Value
Built-in calibration, temperature compensation, and robust PID algorithms mean fewer recalibrations and lower maintenance costs, maximizing your ROI in lab equipment investments.

Standard Accessories Included

- Host Unit: MSDSCTGA1550STASWISS (1)
- Power Line: 1
- Experimental Software USB Drive: 1
- Data Line: 1
- Crucibles: 100 pcs
- Water Pumps: 2
- Water Pump Adapters: 2
- Multi-Functional Wrench: 1
- Tweezers: 1
- Fuses: 5
- PU Trachea: 2
- Silicone Water Pipes: 4
- Scoops: 1
- Certificate of Conformity, Warranty Card, Instruction Manual: 1
- Note: You'll need a computer, nitrogen cylinder, oxygen cylinder, and pressure-reducing gauges for full operation.
- Ready to elevate your thermal analysis? Contact us today for a demo or quote.