



MINI MUFFLE FURNACE TT-MF-1000

Mini Muffle Furnace TT-MF-1000 is designed for routine laboratory research and testing. It features high-purity alumina for the chamber and a durable alloy resistance wire for the heating element. The advanced temperature control system and premium furnace materials ensure consistent performance and reliable experimental results.

APPLICATIONS

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- **Routine Laboratory Testing** – Designed for daily laboratory operations, providing reliable heat treatment for small samples. Ensures repeatable results and consistent performance for quality control and research tasks.
- **Materials Research & Development** – Enables precise thermal processing of metals, ceramics, composites, and advanced materials. Supports innovation in new material design, mechanical testing, and thermal property evaluation.
- **Nanomaterials & Functional Composites** – Provides controlled high-temperature treatment for nanoparticles, thin films, and composite materials. Ensures uniform heating and reproducibility essential for advanced functional material studies.

- **Semiconductor & Electronics Research** – Facilitates annealing, diffusion, and thermal oxidation processes in semiconductor substrates. Delivers accurate, stable temperature control required for microelectronics and optoelectronic device development.
- **Powder Metallurgy & Metallographic Studies** – Supports sintering, phase transformation, and microstructural analysis of metallic powders. Widely used in material densification, alloy testing, and metallurgical research.
- **Chemical & Petrochemical Laboratories** – Suitable for catalyst activation, decomposition studies, and controlled thermal reactions. Provides energy-efficient heating and precise regulation critical for chemical research and analysis.
- **Energy & Battery Material Research** – Provides thermal processing of cathode, anode, and electrolyte materials for advanced energy storage systems. Enhances consistency and stability of next-generation lithium-ion and solid-state batteries.
- **Educational & Academic Institutions** – Ideal for training, demonstrations, and applied research in universities and technical schools. Combines durability, user-friendly controls, and robust safety features for academic environments.
- **Industrial Quality Control & Certification** – Delivers high-precision heat treatment for product verification, standard compliance, and certification testing. Meets ISO, CE, and SGS standards, ensuring trust and reliability for regulated industries.

FEATURES

Furnace Shell

Constructed from Q235 low-carbon steel, the shell features an electrostatic, corrosion-resistant coating.

Its solid metal frame design maintains a low external surface temperature.

The side-opening door with a fixed left hinge allows for smooth, user-friendly operation.

Refractory Structure

Engineered with a multi-layer thermal insulation system, including a double-layer lining of lightweight refractory bricks. The bricks are precisely stacked and fitted for durability—free from asbestos, offering minimal heat loss and improved energy efficiency.

Heating System

Equipped with high-quality HRE spiral resistance wire, wound around ceramic support tubes for free heat radiation inside the chamber. This design delivers energy-efficient, uniform heating and extended service life.

Heating elements are located on three sides—left, right, and bottom—for even temperature distribution.

The silicon carbide base plate shields the bottom heating elements while offering strong thermal conductivity and structural support.

Temperature Control Panel

Features PID control integrated with SCR for precise temperature regulation.

Uses an internationally standardized N-type nickel-chromium-silicon thermocouple with a temperature range of 0–900 °C and long operational life.

Includes a door safety switch that cuts power when the door is opened.

Program Controller

Advanced controller supports complex thermal processes.

User-friendly interface with flexible programming options.

Allows up to 30 programmable segments per temperature curve.

Includes over-temperature and fault alarms, along with automatic safety shutdown.

Optional features include manual air intake, automatic exhaust lid, and a rapid cooling unit capable of cooling the furnace from high temperatures to 400 °C quickly and safely.

Model	TT-MF-1-1000	TT-MF-3-1200	TT-MF-6-1200	TT-MF-8-1200	TT-MF-12-1200	TT-MF-18-1200	TT-MF-30-1200
Chamber size□ W xD xH□ mm	100 x100x100	150 x150x150	180x230x150	200x300x120	200 x300x200	250 x300x250	300 x500x200
Outer size□ W xD xH□ mm	250 x240x350	430x465x620	460x570x660	480 x630x630	480 x630x710	550x635x780	600 x870x735
Max temperature	1200℃						
Working temperature	1100℃						
Voltage	220V/1.2KW (110V is also available)	220V/2.5KW (110V is also available)	220V/3KW (110V is also available)	220V/3KW (110V is also available)	220V/4KW (110V is also available)	220V/6KW (110V is also available)	380V/7.5KW
Heating element	HRE Alloy resistance wire						
Chamber material	Polycrystalline inorganic alumina ceramic fiber material prepared by wet vacuum filtration						
Temp.Precision	±1℃						
Termocouple	N Type termocouple						
Temperature controller	Intelligent microcomputer PID temperature control instrument, SSR control, PID parameter self-tuning function; programmable 30 program segments, program temperature rise, program heat preservation, program cooling						
Heating rate	1-25℃/min free adjustment						
Furnace structure	Furnace temperature control integrated structure						
Equipment protection	Modular control, sound and light alarm signal will be sent out for over temperature and broken coupler in the working process, and the protection action will be completed automatically						

Safety protection	The equipment is equipped with a circuit breaker, which will automatically pop open in case of short circuit leakage, which can protect the safety of equipment and operators
Furnace shell	High-quality cold-rolled steel plate CNC machine tool blanking processing, after welding, grinding, polishing, phosphating, pickling, surface electrostatic spraying plastic powder
Quality certificate	ISO9001 CE SGS TUV (By Request)
Standard packing	1. Furnace body 1 set 2. Temperature controller 1 set 3. Power cord 3 meters 4. Thermocouple 1 set 5. Manual 1 copy 6. Crucible pliers 1 set 7. High temperature gloves 1 pair
Optional	1. Optional exhaust chimney for evacuation of volatile substances 2. Optional corundum crucible, furnace floor, shed board and other kiln furniture 3. Optional material recorder for online recording of temperature curves



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