TORONTECH

MUFFLE FURNACE TT-MF-8-1200

Electric Muffle Furnace TT-MF-8-1200 is designed for high-temperature heat treatment, including sintering and heating of advanced materials such as metals, ceramics, nanomaterials, and semiconductors.

APPLICATIONS

Muffle Furnace TT-MF-8-1200

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- **Advanced Materials Processing** – Enables high-temperature sintering, annealing, and heat treatment of metals, ceramics, nanomaterials, and semiconductors. Ensures uniform heating and consistent results for advanced material development.
- **Metallurgical Research & Testing** – Provides precise thermal treatment for alloy studies, phase transformation analysis, and oxidation resistance testing. Supports metallurgical R&D with reproducible, traceable outcomes.
- **Ceramics & Glass Laboratories** – Ideal for firing ceramics, glaze testing, and glass transition studies. Delivers stable and uniform thermal environments to maintain material integrity and quality.
- **Electronics & Semiconductor Manufacturing** – Facilitates controlled diffusion, thermal oxidation, and annealing processes for semiconductor wafers and electronic components. Ensures high-precision processing aligned with industry standards.

- **Chemical & Catalysis Applications** – Suitable for catalyst preparation, pyrolysis, thermal decomposition, and chemical reaction studies. Flexible temperature programming supports complex experimental requirements.

- **Battery & Energy Materials Development** – Supports thermal processing of lithium-ion, solid-state, and next-generation energy materials. Provides stable heating for cathodes, anodes, and electrolytes during R&D and quality validation.

- **Academic & Institutional Research** – Widely used in universities and research institutions for experiments in chemistry, physics, materials science, and engineering. Offers safety, accuracy, and ease of use for laboratory applications.

- **Industrial Quality Control & Certification** – Enables consistent high-temperature testing for product validation, third-party inspection, and certification. Compliant with ISO, CE, SGS, and TÜV standards for reliable quality assurance.

FEATURES

Furnace Shell

1. Constructed from Q235 low-carbon steel with an electrostatic-resistant, corrosion-resistant finish.
2. Durable metal frame helps maintain a low external surface temperature.
3. Side-opening door design with right-hand hinge for convenient access.

Refractory Material

Features a multi-layer insulation system made of lightweight alumina ceramic fiber and high-performance insulation board. Asbestos-free, with low heat loss and reduced energy consumption.

Heating System

1. High-quality HRE spiral resistance wire heating elements are securely embedded on the furnace surface, providing efficient, energy-saving radiant heat with a long lifespan.
2. Three-sided heating (left, right, and bottom) ensures uniform temperature distribution.
3. A silicon carbide base plate shields the bottom heating element, offering strong mechanical support, excellent thermal conductivity, and stable horizontal load capacity.

Temperature Control Panel

1. Combines PID and SSR control for accurate temperature regulation.
2. Equipped with an internationally standardized N-type nickel-chromium-silicon thermocouple, measuring temperatures from 0–1300°C with extended durability.
3. Safety switch cuts power when the furnace door is opened.

Program Controller

1. Advanced controller supports complex thermal processing needs.
2. User-friendly interface with flexible programming options.
3. Capable of storing up to 30 segments for single-curve programs.
4. Built-in over-temperature and system fault alarms ensure automatic safety protection.

TECHNICAL SPECIFICATIONS

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						
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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