



TORONTECH



MUFFLE FURNACE TT- MF-30-1200

Laboratory Muffle Furnace TT-MF-30-1200 is designed for high-temperature heat treatment processes such as sintering and heating of advanced materials, including metals, ceramics, nanomaterials, and semiconductors.

APPLICATIONS

Muffle Furnace TT-MF-30-1200

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- **Advanced Materials Research & Development** - Designed for large-scale sintering, annealing, and thermal processing of metals, ceramics, nanomaterials, and semiconductors. Provides consistent high-temperature performance for advanced material innovation.
- **Metallurgical Engineering & Alloy Testing** - Enables reliable heat treatment of alloys, phase transformation studies, and oxidation testing on a larger batch scale. Supports both R&D and industrial metallurgical applications.
- **Ceramics & Glass Industry** - Suitable for high-volume ceramic sintering, glaze evaluation, and controlled glass heating. Ensures stable temperature uniformity for consistent product quality in industrial production.

- **Semiconductor & Electronics Manufacturing** - Facilitates thermal oxidation, diffusion, and annealing processes for wafers and advanced electronic materials. Offers precise temperature control for larger-scale semiconductor applications.
- **Chemical & Catalysis Laboratories** - Ideal for catalyst preparation, pyrolysis, and thermal decomposition experiments requiring high reproducibility and programmable thermal cycles. Supports both small-batch and semi-industrial research needs.
- **Energy & Battery Materials Processing** - Provides scalable heat treatment for cathodes, anodes, and electrolyte materials in lithium-ion, solid-state, and next-generation battery R&D. Ensures uniform high-temperature performance for bulk samples.
- **Academic & Government Research Institutes** - Used for advanced materials science, physics, and chemistry experiments where larger sample sizes or multiple test specimens are required. Offers reliability, programmability, and safety for institutional labs.
- **Industrial Quality Control & Certification Agencies** - Delivers reproducible, high-temperature testing for large-scale product validation, compliance, and third-party certification. Compliant with ISO, CE, SGS, and TÜV standards for regulated industries.

FEATURES

Furnace Shell

1. Constructed from Q235 low-carbon steel with a corrosion-resistant, electrostatically coated surface.

2. Reinforced metal frame provides structural stability and helps maintain a low external temperature.
3. Side-hinged door opens to the right for easy and safe operation.

Refractory Material

Features a multi-layer insulation system made of lightweight alumina ceramic fiber and high-quality insulation board. It is asbestos-free, offers low heat loss, and supports energy efficiency.

Heating System

1. Equipped with high-grade HRE spiral resistance wire heating elements, securely embedded for safe and efficient radiant heat transfer within the chamber. Offers long operational life and energy savings.
2. Heating elements are distributed on three sides—left, right, and bottom—for uniform temperature distribution.
3. A silicon carbide bottom plate shields the bottom heating element, providing strong mechanical support, excellent thermal conductivity, and horizontal load capacity.

Temperature Control Panel

1. Utilizes PID and SSR control modes for accurate temperature regulation.
2. Fitted with an N-type nickel-chromium-silicon thermocouple, compliant with international standards, offering a temperature range of 0–1300°C and extended durability.
3. A safety switch automatically cuts power when the furnace door is opened.

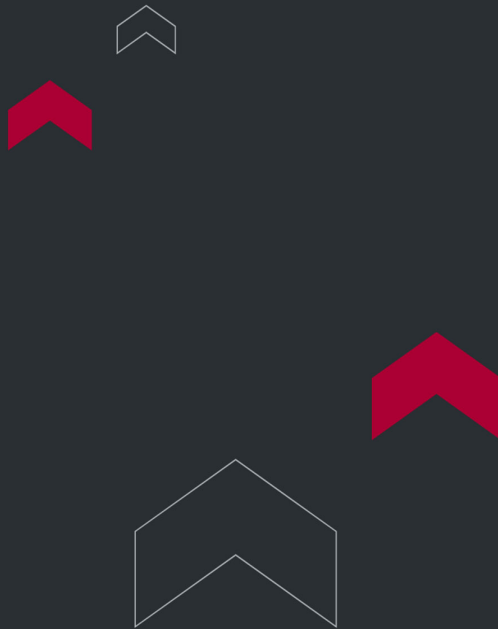
Program Controller

1. Advanced controller supports a wide range of heat treatment processes.
2. User-friendly interface with flexible programming capabilities.
3. Supports up to 30 programmable segments in a single temperature curve.
4. Includes over-temperature and system fault alarms with automatic safety shutoff.

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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