



TORONTECH



MUFFLE FURNACE TT- MF-8-1800

Laboratory Muffle Furnace TT-MF-8-1800 is designed for high-temperature heat treatment processes such as sintering ceramic materials, nanomaterials, semiconductors, powder metallurgy, and other advanced materials. It is widely used in universities, research institutes, manufacturing facilities, and sectors including petrochemical and aerospace.

APPLICATIONS

Muffle Furnace TT-MF-8-1800

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- **Advanced Materials Research & Development** – Designed for high-temperature sintering, annealing, and thermal treatment of ceramics, nanomaterials, powder metallurgy, and semiconductor materials. Dual-sided MoSi₂ heating elements provide excellent temperature uniformity up to 1800°C, ensuring reproducible and accurate results for advanced R&D projects.
- **Electronics & Semiconductor Manufacturing** – Enables precise processing of wafers, thin films, and semiconductor components under controlled thermal conditions. Equipped with a high-grade B-type platinum-rhodium thermocouple and PID-SCR temperature control, it ensures stability and consistency in microelectronics production and testing.

- **Chemical & Petrochemical Laboratories** – Facilitates calcination, catalyst activation, and thermal decomposition of specialty chemicals with minimal heat loss and efficient energy use. The 30-segment programmable controller supports complex heating cycles, making it ideal for industrial R&D and quality control laboratories.
- **Academic & Institutional Research** – Widely used in universities and research institutes for high-temperature studies in chemistry, materials science, and solid-state physics. Programmable heating profiles enable flexible experimentation for crystallization, structural analysis, and nanostructure development.
- **Aerospace & Metallurgical Engineering** – Supports the heat treatment of high-performance alloys, ceramics, and composites used in aerospace, automotive, and defense applications. Provides accurate high-temperature conditions for phase transformation, oxidation resistance testing, and structural stability evaluations.
- **Pharmaceutical & Biotechnology Research** – Used for ashing, calcination, and thermal decomposition of pharmaceutical materials and intermediates. Ensures precise and repeatable results in compliance with international research and laboratory standards.
- **Environmental & Geological Testing Centers** – Ideal for sample preparation, mineral characterization, and soil or rock ashing. Delivers reproducible high-temperature processing for environmental monitoring and geoscience investigations.
- **Independent Certification & Testing Agencies** – Provides traceable and secure thermal processing with safety interlocks, over-temperature protection, and internationally certified quality (ISO, CE, SGS, TUV). Ensures audit-ready compliance for verification, certification, and third-party testing services.

FEATURES

Furnace Shell

1. Constructed from Q235 low-carbon steel, the shell features an electrostatic-resistant, corrosion-resistant surface.
2. Its robust double-layer metal frame helps maintain a low external temperature.
3. The side-opening door swings to the right for easy access and operation.

Refractory Material

1. The multi-layer insulation system is made of lightweight alumina ceramic fiber and high-grade insulation board.
2. It is asbestos-free, delivers minimal heat loss, and promotes energy efficiency.

Heating System

1. Equipped with premium MoSi₂ heating elements securely mounted on both sides of the chamber.
2. This free-radiation design ensures energy-efficient, even heating and long operational life.
3. Dual-side heating (left and right) enhances temperature uniformity inside the furnace.
4. Custom models are available with maximum temperatures of 1750°C or 1800°C—ideal for ceramic sintering applications.

Temperature Control Panel

1. Features PID and SCR control for precise temperature regulation.
2. Uses a B-type platinum-rhodium thermocouple (temperature range: 50–1800°C) designed for longevity.
3. A built-in safety switch cuts power automatically when the door is opened.

Program Controller

1. Advanced controller meets complex processing needs
2. Intuitive interface for easy programming
3. Supports up to 30 programmable segments
4. Includes over-temperature and fault alarms with automatic protection functions

Model	TT-MF-1-1800	TT-MF-3-1800	TT-MF-8-1800	TT-MF-12-1800	TT-MF-20-1800	TT-MF-36-1800	TT-MF-45-1800
Chamber size □ W xD xH□ mm	100 x120x100	150 x150x150	200x200x200	200x300x200	250 x320x250	300x400x300	300 x500x300
Outer size □ W xD xH□ mm	383 x432x660	510x560x870	600x620x920	600x693x920	610 x730x970	700x840x1500	700x940x1500
Max temperature	1800℃						
Working temperature	1700℃						
Voltage	220V/2KW (110V is also available)	220V/4KW (110V is also available)	220V/5KW (110V is also available)	220V/6KW (110V is also available)	220V/7KW (110V is also available)	380V/15KW	380V/18KW
Heating element	MoSi2 rod						
Chamber material	Polycrystalline inorganic alumina ceramic fiber material prepared by wet vacuum filtration						
Temp.Precision	±1℃						
Termocouple	B Type termocouple						
Temperature controller	Intelligent microcomputer PID temperature control instrument, SCR/SSR control, PID parameter self-tuning function; programmable 32 time periods, program heating, program heat preservation, program cooling						
Heating rate	1-15℃/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
Quality certificate	ISO9001 CE SGS TUV
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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