



TORONTECH



MUFFLE FURNACE TT- MF-36-1700

TT-MF-36-1700 Box Muffle Furnace 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 institutions, industrial facilities, the petrochemical sector, and the aerospace industry.

APPLICATIONS

Muffle Furnace TT-MF-36-1700

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- **Advanced Materials Research & Development** – Provides precise high-temperature sintering and thermal treatment of ceramics, nanomaterials, powder metallurgy, and semiconductor materials. Dual-sided MoSi₂ heating elements deliver excellent temperature uniformity up to 1700°C, ensuring reproducible results in advanced material innovation.
- **Electronics & Semiconductor Manufacturing** – Enables controlled processing of wafers, thin films, and semiconductor components under strict thermal conditions. Equipped with a B-type platinum-rhodium thermocouple and PID-SCR control, it ensures stable, accurate heat profiles critical for microelectronics fabrication.
- **Chemical & Petrochemical Laboratories** – Facilitates reliable calcination, catalyst activation, and specialty chemical processing. Multi-segment programmable heating cycles (up to 32 steps) allow customized protocols for analytical studies, industrial R&D, and quality control applications.

- **Academic & Institutional Research** – Widely used in universities and research institutes for high-temperature experiments in chemistry, physics, and materials science. Supports complex thermal profiles for advanced studies in solid-state reactions, crystallography, and nanostructure development.
- **Aerospace & Metallurgical Engineering** – Ideal for testing high-performance alloys, ceramics, and composites used in aerospace and defense applications. Delivers stable high-temperature conditions for phase transformation studies, oxidation resistance testing, and structural evaluations.
- **Pharmaceutical & Biotechnology Research** – Supports ashing, thermal decomposition, and high-temperature sterilization processes for pharmaceutical materials. Ensures precise and repeatable results in compliance with international laboratory standards.
- **Environmental & Geological Testing Centers** – Designed for reliable sample preparation, mineral analysis, and soil/rock ashing studies. Provides consistent high-temperature conditions for accurate geoscience and environmental research data.
- **Independent Certification & Testing Agencies** – Offers secure, audit-ready operation with fault alarms, over-temperature protection, and internationally certified components (ISO, CE, SGS, TUV). Ensures traceability and compliance for third-party testing and verification services.

FEATURES

Furnace Shell

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

2. The durable double-layer metal frame helps minimize the external surface temperature.
3. Features a side-opening door that opens to the right for convenient operation.

Refractory Material

Designed with multi-layer insulation, including lightweight alumina ceramic fiber and premium insulation board backing. Asbestos-free, with low heat loss and reduced energy consumption.

Heating System

1. Equipped with high-quality MoSi₂ heating elements, securely installed on both sides of the chamber for efficient and consistent heat distribution.
2. Dual-side heating ensures excellent temperature uniformity.
3. Custom high-temperature models available, with maximum temperatures of 1750°C or 1800°C—ideal for ceramic material sintering.
4. Energy-efficient design with long service life.

Temperature Control Panel

1. Features PID and SCR control for precise temperature regulation.
2. Uses a high-grade B-type platinum-rhodium thermocouple (temperature range: 50–1800°C) for accuracy and durability.
3. Built-in safety switch cuts power when the furnace door is opened.

Program Controller

1. Advanced controller supports complex thermal processing.
2. Intuitive interface with flexible programming options.
3. Supports up to 32 programmable segments.
4. Includes over-temperature and fault alarms for automatic safety protection.

TECHNICAL SPECIFICATIONS

Model	TT-MF-1-1700	TT-MF-3-1700	TT-MF-8-1700	TT-MF-12-1700	TT-MF-20-1700	TT-MF-36-1700	TT-MF-45-1700
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	1700℃						
Working temperature	1600℃						
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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