

# Chamber Muffle Furnace >>



## The Overview Of Chamber Muffle Furnace

SAFTHERM chamber muffle furnace range has a maximum operating temperature of 1800 °C and chamber capacities up to more than 2000 liters. It is mainly used in the Universities, Colleges, Laboratories, Institutions of higher learning, Scientific research institutions, Factory enterprises and apply to new material fields such as metal material, ceramic material, nano material, semiconductor material applications etc.

- > Chamber furnaces generally has a much larger working chamber size and suitable for different size and type of samples for heating.
- > For special usage of experiment process, it is better to consider fully to check the function or whether need to choose other type of furnace.
- > When choosing a furnace, also need to consider whether the special parts for samples. Like powders in crucibles and other tools.



HRE Resistance Wire



N-Type Thermocouple



PID Temperature Control

## How to choose a Muffle Furnace ?

### What Is The Operate Temperature ?

- > SAFTHERM muffle furnace mainly with range of 1200°C, 1400°C, 1700°C and OEM 1800°C.
- > When real operating lower than 1200°C, we generally use high grade HRE spiral wire coils as heating element.
- > When real operating lower than 1400°C, we generally use high grade SIC ( Silicon Carbide Heaters ) heating element.
- > When real operating lower than 1700°C, we generally use high grade MoSi2 ( Molybdenum Disilicide Heaters ) heating element.
- > Continuous operating temp will be 100°C below the max temp design and right using will extend the furnace service life.
- > Furnaces are designed to operate at high temperatures. Operation below temperatures of approximately 600 °C will be less accurate and continuous use at low temperatures may reduce the element life of some furnaces, ie MoSi2 heated furnaces.

### What Is The Chamber Size Required ?

- > SAFTHERM definite and real working chamber side with Width ( W ), Depth ( D ) and Height ( H ) and you will see the specification with : W\*D\*H (mm).
- > SAFTHERM has wide range of working chamber size for chamber furnaces.

## What Is The Temp Controller ?

- > SAFTHERM standard furnaces controlled by SHIMADEN (Japan ) 32 segments digital PID (proportional, integral and derivative) controller with accurate control .
- > Multi-segments and/or multi-program controllers are available as an option on most models or any other brand models as customer want to have.
- > The Furnace built-in RS485 digital communications port and USB adaptor as optional setting , allowing the user to connect to a PC for remote control and monitoring of the furnace. You can also save or export test results.

## What Is Electric Parts Used ?

- > SAFTHERM furnace all use international parts to keep safety and quality .
- > Main Electric parts use France SCHNEIDER electronics parts.
- > Main Control use USA Crydom Solid Relay or German SEMIKRON SCR control.

## What Is Your OEM Furnace Service ?

- > SAFTHERM has professional designers team and can design different furnaces according to customer technical request.
- > SAFTHERM will confirm the OEM design with customers before final manufacturing.

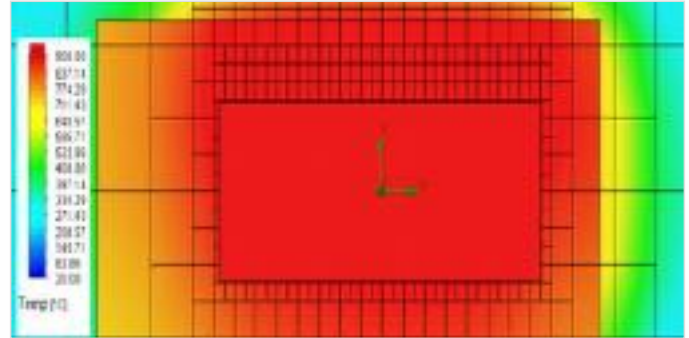


# STM-8-12

## 1200°C Chamber Muffle Furnace

### Main Features

- > Integrated Structure with elegant design.
- > Chamber Materials: Vacuum forming ceramic fiber, which has the advantage of no powder drops off with high temperature, and saving energy more than 50%.
- > SHIMADEN (Japan) Microprocessor based self-tuning PID control provides optimum thermal.
- > Long life type N thermocouple.
- > CE compliant.
- > Built-in RS485 port and USB adaptor as optional setting for computer control , it need to add extra fees.



Heat Distribution Profile Diagram



- 01 Ceramic Insulation Door
- 02 HRE Resistance Wire
- 03 Shimaden Temperature Controller
- 04 N Type Thermocouple
- 05 SS304 Safty Buckle
- 06 Sound -light Alarm
- 07 Schneider Air Switch
- 08 Operating Buttons

### Technical Parameters

Model	STM-1-10	STM-3-12	STM-6-12	STM-8-12	STM-12-12	STM-18-12	STM-30-12	OEM
Inner Dimension (WxDxH)mm	100x100x100	150x150x150	180x230x150	200x300x120	200x300x200	250x300x250	300x500x200	Any size
Outer Dimension (WxDxH)mm	250x240x350	430x465x620	460x570x660	480x630x630	480x630x710	550x635x780	600x870x735	
Type	Benchtop							
Furnace structure	Alumina Ceramic Chamber, Temperature control system, Heating element, Furnace shell ,Main Electric Parts and other relative accessories							
Max temperature	1200°C							
Continue Temp	1100°C							
Power Supply	220V/1.2KW	220V/2.5KW	220V/3KW	220V/3KW	220V/4KW	220V/6KW	380V/7.5KW	
Heating Element	High quality alloy resistance wire (HRE)							
Chamber Material	High temperature polycrystal alumina ceramic fiber plate							
Temp Precision	±1°C							
Thermocouple	N type							
Temp controller	SHIMADEN (Japan) brand intelligent microcomputer PID controller can program 4 groups 32 segments							
Electronic Parts	SCHNEIDER (France ) electronics brand							
Heating rate	≤ 40°C/min ( suggest 15-20°C/min for longer life using of furnace )							
Safety protection	Overheat and Thermocouple-break Alarm							
Certification	ISO9001 /CE/ SGS							
Furnace shell	High quality cold-rolled steel sheets CNC processing							
Insulation	High quality thermal insulation material to ensure a good uniformity							
Accessories	One pair of high temperature gloves, One pair of crucible tongs, one catalog and operation manual							
Optional	Paperless recorder, Stainless steel exhaust chimney, Quartz /Alumina crucible							

# STM-8-14

## 1400°C Chamber Muffle Furnace

### Main Features

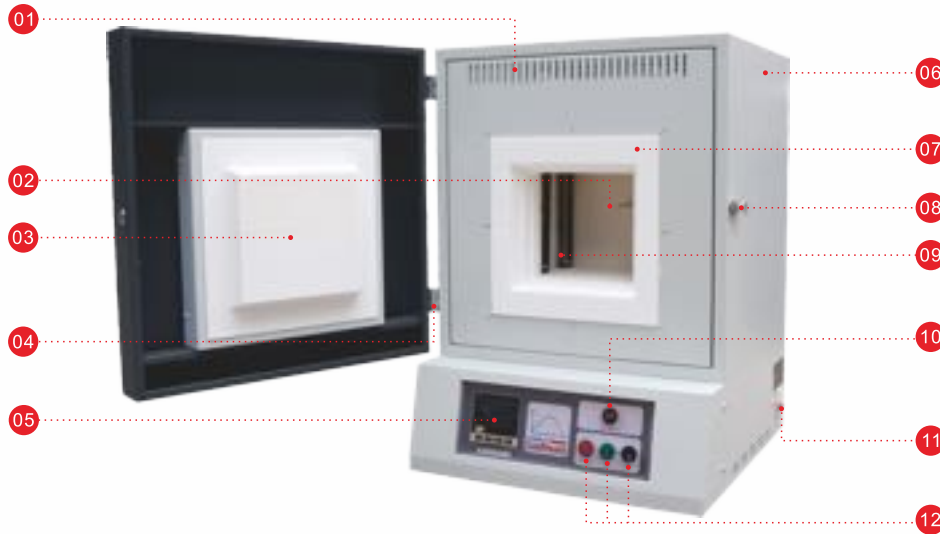
- > Integrated Structure with elegant design.
- > Chamber Materials: Vacuum forming ceramic fiber with advantage of no powder drops off in high temperature and energy saving.
- > Heater: It use high grade SIC ( Silicon Carbide Heaters) heating element.
- > SHIMADEN (Japan) Microprocessor based self-tuning PID control provides optimum thermal.
- > Long life type S thermocouple.
- > CE compliant.
- > Built-in RS485 port and USB adaptor as optional setting for computer control, it need to add extra fees.



SIC Heating Element



Furnace Inner Picture



- 01 Ventilation Holes
- 02 S-Type Thermocouple
- 03 Ceramic Insulation Door
- 04 SS304 Alloy Hinge
- 05 Shimaden Temperature Controller
- 06 Dual-wall Housing
- 07 Ceramic Insulation Lining
- 08 SS304 Safty Buckle
- 09 SiC Rod Heater
- 10 Sound-light Alarm
- 11 Schneider Air Switch
- 12 Operating Buttons

### Technical Parameters

Model	STM-1.7-14	STM-3-14	STM-8-14	STM-12-14	STM-18-14	STM-27-14	OEM
Inner Dimmension (WxDxH)mm	120×120×120	150×150×150	200×200×200	200×300×200	250×300×250	300×300×300	Any size
Outer Dimension (WxDxH)mm	460×500×720	490×530×750	575×610×825	590×680×835	610×700×860	650×670×900	
Type	Benchtop						
Furnace structure	Alumina Ceramic Chamber, Temperature control system, Heating element, Furnace shell ,Main Electric Parts and other relative accessories						
Max temperature	1450°C			1400°C			
Continue Temp.	1400°C			1350°C			
Power Supply	220V/2.5KW	220V/3KW	220V/5KW	220V/5KW	220V/6KW	380V/9KW	
Heating Element	High quality Silicon Carbide Rod ( SIC) heater						
Chamber Material	High temperature 1500 Type polycrystal alumina ceramic fiber material						
Temp Precision	±1°C						
Thermocouple	S type						
Temp controller	SHIMADEN (Japan) brand intelligent microcomputer PID controller can program 4 groups 32 segments						
Electronic Parts	SCHNEIDER (France ) electronics brand						
Heating rate	≤ 25°C/min ( suggest 15°C/min for longer life using of furnace )						
Safety protection	Overheat and thermocouple-break alarm						
Certification	ISO9001 /CE/ SGS						
Furnace shell	High quality cold-rolled steel sheets CNC processing						
Insulation	High quality thermal insulation material to ensure a good uniformity						
Accessories	One pair of high temperature gloves, One pair of crucible tongs, one catalog and operation manual						
Optional	Paperless recorder, Stainless steel exhaust chimney, Quartz /Alumina crucible						

# STM-12-17

## 1700°C Chamber Muffle Furnace

### Main Features

- >Integrated Structure with elegant design.
- >Chamber Materials: Vacuum forming ceramic fiber with advantage of no powder drops off in high temperature and energy saving .
- >Heater: It use high grade MoSi2 ( Molybdenum Disilicide Heaters ) heating element.
- >YUDIAN brand Microprocessor PID controller or any other brand as option.
- >Long life type B thermocouple.
- >CE compliant.
- >Built-in RS485 port and USB adaptor as optional setting for computer control, it need to add extra fees.



MoSi2 Rod Heater



Furnace inner picture



- 01 Ventilation Holes
- 02 Dual-wall Housing
- 03 Ceramic Insulation Door
- 04 Zinc Alloy Hinges
- 05 Temperature Controller
- 06 Ceramic Fiber Lining
- 07 SS304 Safty Buckle
- 08 MoSi2 Rod Heater
- 09 Amp&Volt Meters
- 10 Schneider Air Switch
- 11 Operating Buttons

### Technical Parameters

Model	STM-1-17	STM-3-17	STM-8-17	STM-12-17	STM-20-17	STM-36-17	OEM
Inner Dimmension (WxDxH)mm	100x120x100	150x150x150	200x200x200	200x300x200	250x320x250	300x400x300	Any size
Outer Dimension (WxDxH)mm	383x432x660	510x560x870	600x620x920	600x693x920	610x730x970	1040x840x1250	
Type	Benchtop						
Furnace structure	Alumina Ceramic Chamber, Temperature control system, Heating element, Furnace shell ,Main Electric Parts and other relative accessories						
Max temperature	1700°C						
Continue Temp.	1600°C						
Power Supply	220V/2KW	220V/4KW	220V/5KW	220V/6KW	380V/7KW	380V/13KW	
Heating Element	High quality Molybdenum Disilicide ( MoSi2) heater						
Chamber Material	High temperature 1800 Grade polycrystal alumina ceramic fiber material						
Temp Precision	±1°C						
Thermocouple	B type						
Temp controller	YUDIAN brand 518P Microprocessor PID controller as standard or any other brand as option						
Electronic Parts	SCHNEIDER (France ) main electronic parts /High quality electric transformer						
Heating rate	≤ 15°C/min ( suggest 10°C/min for longer life using of furnace )						
Safety protection	Overheat and thermocouple-break alarm						
Certification	ISO9001 /CE/ SGS						
Furnace shell	High quality cold-rolled steel sheets CNC processing						
Insulation	High quality thermal insulation material to ensure a good uniformity						
Accessories	One pair of high temperature gloves, One pair of crucible tongs, one catalog and operation manual						
Optional	Paperless recorder, Stainless steel exhaust chimney, Quartz /Alumina crucible						