muffle furnace for laboratory ashing test of various samples

Muffle furnace through resistance heating to provide a stable high-temperature environment, the material can be ashing, heat treatment, sintering, melting and other thermal operations.

Muffle Furnace

This muffle furnace is equipped with program control, real-time temperature display, safety protection and networking record function, which is an important tool for precision heat treatment and material property research.

Structure Features

1. a variety of hearth options: configured with ceramic fiber hearth and silicon carbide hearth, the former rapid warming, fast thermal response, suitable for rapid experiments. the latter corrosion resistance, wear resistance, more suitable for long-term high temperature conditions.
2. Double-layer furnace body design: the shell adopts double-layer cooling structure, and the middle is filled with polycrystalline mullite heat preservation layer, which can effectively insulate the heat, ensure the low temperature on the surface, and safe operation.
3. high-quality heating element: the use of 1400 °C imported alloy resistance wire or silicon-carbon rods, high thermal efficiency, long life, low wire breakage rate.

4. Intelligent operating system: equipped with a large-size color LCD display, real-time display of the heating curve. with self-programming function, you can set up a number of constant temperature range and insulation time.
5. multiple safety protection: including open door power off, over-current protection, over-temperature alarm, leakage protection and electronic furnace door lock, to protect personnel and experimental data security.

Main Advantages

1. accurate temperature control: three-point temperature measurement technology to provide more uniform and accurate temperature control, suitable for tests requiring high precision of constant temperature.
2. high degree of automation: built-in conventional ash, volatile matter, bonding index test program, automatic execution of the experimental process, the key nodes of the alarm prompts to reduce human error.
3. data traceability: support networking function, the experimental temperature, time, test content, door lock status and other parameters can be synchronized transmission to the host computer, to facilitate remote monitoring and data archiving.
4. flexible application: the program can be programmed on demand to meet the needs of scientific research on the setting of complex heat treatment path.

Working Principle

Muffle furnace mainly relies on resistance heating principle work. After energized, the furnace wire, the resistance element due to the current flow and generate Joule heat, the heat will be conducted to the interior of the furnace

chamber. Under the high temperature environment, the sample is placed in the heat-resistant crucible and heated by thermal radiation and convection, thus accomplishing a series of heat treatment tasks. The temperature control system utilizes thermocouples to sense the temperature of the furnace chamber and adjusts the heating power through a PID algorithm to stabilize the temperature within the set range.

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Model	**AF100**
Door opening method	Door opens upwards
Heating Resistance Wire	foreign import
Temperature range	less than 1200°C
Temperature accuracy	±1°C
Number of thermocouples	1
networking function	yes
Furnace chamber dimensions	200x300x120mm
Furnace chamber Volume	7L

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Model	**AF100**
Power	less than 4kw
Power supply	220Vac, 50Hz
Weight	70Kg