

Nanomaterials Synthesis Lab

Muffle Furnace

Model Name: LEF-2055-0

Watts 1450W

Serial No. DLCOLF1705C



A muffle furnace is a furnace with an externally heated chamber, the walls of which radiantly heat the contents of the chamber, so that the material being heated has no contact with the flame. Muffle furnaces are most often utilized in laboratories as a compact means of creating extremely high-temperature atmospheres. They are employed to test the characteristics of materials at extremely high and accurate temperatures. A muffle furnace is also known as a retort furnace.

It is used to sinter the materials at high-temperature such as:

- ✓ Fusing glass
- ✓ Creating enamel coatings
- ✓ Ceramics
- ✓ Soldering
- ✓ Brazing

High temperature Furnace

Model Name: 1620HT

Sr No: 1505001006

Power: 240VAC/50Hz/3.0Kw



Max temperature:1800°C, Chamber size: 150*150*150mm, 200*200 200mm, 300 300 300mm, Heating element: MoSi₂ heater, Chamber Size:200*200*200mm (8*8*8inch), Max. temperature:1800°C, Work temperature:1700°C, Temperature control:30segments programable and PID auto control, Heating elements: MoSi₂ heater, Thermocouple: B type, Heating rate:0-40C/min, Temperature accuracy:±1C, Power: AC208-240V, 50/60HZ, Single phase, Max power:8KW, Net weight:170kgs

TUBE FURNACE

Serail Number: 07/0001

Model name: HTTF-1/06

Code No: 02

A tube furnace is an electric heating device used to conduct syntheses and purifications of inorganic compounds and occasionally inorganic synthesis. Temperature can be controlled via feedback from a thermocouple. Digital temperature controllers provide an RS232 interface, and permit the operator to program segments for uses like ramping, soaking, sintering, and more. Advanced materials in the heating elements, such as molybdenum silicide offered in certain models can now produce working temperatures up to 1800 °C.



Weight balance

S/N: D307520173

Model name: ATY222

An analytical balance is a class of balance designed to measure small mass in the sub-milligram range. The use of a mechanically vented balance safety enclosure, which has uniquely designed acrylic airfoils, allows a smooth turbulence-free airflow that prevents balance fluctuation and the measure of mass down to 1 µg without fluctuations or loss of product. Also, the sample must be at room temperature to prevent natural convection from forming air currents inside the enclosure from causing an error in reading. Single-pan mechanical substitution balance maintains consistent response throughout the useful capacity is achieved by maintaining a constant load on the balance beam, thus the fulcrum, by subtracting mass on the same side of the beam to which the sample is added.



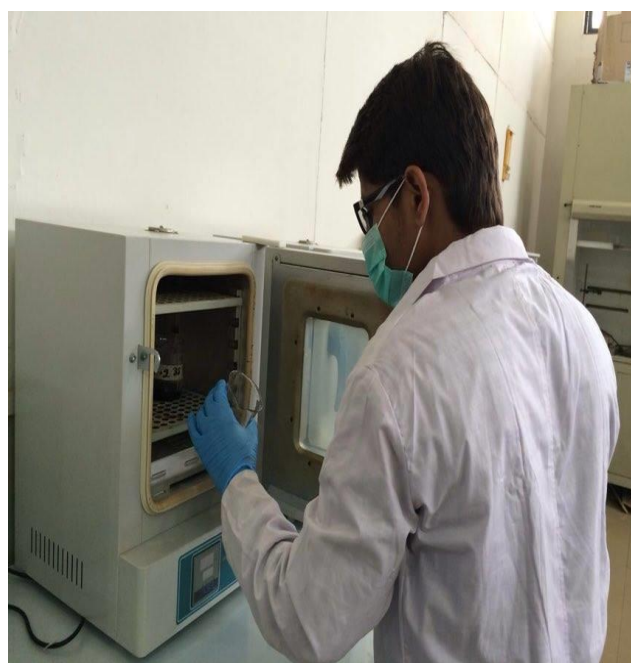
Electronic analytical scales measure the force needed to counter the mass being measured rather than using actual masses. As such they must have calibration adjustments made to compensate for gravitational differences. They use an electromagnet to generate a force to counter the sample being measured and outputs the result by measuring the force needed to achieve balance. Such measurement device is called electromagnetic force restoration sensor.

Drying Oven

Model name: WHL-25A

Desktop constant Temperature

Drying ovens are used across a range of industries and research laboratories for simple applications, such as drying and sterilizing glassware, to complex processes that require controlled heating and temperature uniformity such as bonding and curing. Drying ovens generally operate from ambient heat to 538°C (1000°F.) Drying ovens may be designed for batch processing or with a conveyor for continuous processing. All drying ovens feature programmable controls and stainless steel interiors to prevent corrosion. When selecting the right drying oven, critical factors to consider are the heat-up, soak and cool-down times required within your application. Cool down is achieved when the heated air is



exhausted out from the drying oven, replaced by cooler, ambient air.

Fume Hood

Model name: EFB-4A1 Cust WO 40988

Serial number: 2011-63716

Power: 60W 220-240VAC 50Hz 1PH

A fume hood (sometimes called a fume cupboard or fume closet) is a type of local ventilation device that is designed to limit exposure to hazardous or toxic fumes, vapours or dusts. A fume hood is typically a large piece of equipment enclosing five sides of a work area, the bottom of which is most commonly located at a standing work height.

- protect the user from inhaling toxic gases (fume hoods, biosafety cabinets, glove boxes)
- protect the product or experiment (biosafety cabinets, glove boxes)
- protect the environment (recirculating fume hoods, certain biosafety cabinets, and any other type when fitted with appropriate filters in the exhaust airstream)
- Include explosion protection, spill containment.



Fume hoods are generally set back against the walls and are often fitted with infills above, to cover up the exhaust ductwork. Because of their shape they are generally dim inside, so many have internal lights with vapor-proof covers. For exceptionally hazardous materials, an enclosed glove box may be used, which completely isolates the operator from all contact with the work material and tools.

PHLEGM SUCTION

Model name: 7E-A

Description:

Suction is the flow of a fluid into a partial vacuum, or region of low pressure. The pressure gradient between this region and the ambient pressure will propel matter toward the low pressure area. Suction is popularly thought of as an attractive effect, which is incorrect since vacuums do not innately attract matter.

Dust is "sucked" into a vacuum cleaner when it is pushed in by the higher pressure air on the outside of the cleaner. The higher pressure of the surrounding fluid can push matter into a vacuum but a vacuum cannot attract matter.

- ✓ High pressure, low noise
- ✓ Overflow-protection design, prevent pus and mucus from leaking into the machine
- ✓ Compact, lightweight, and easy to carry



- ✓ Suitable for emergency and outside use
- ✓ Pumping rate : 18L/min
- ✓ Volume : 1000ml

Rotary evaporator

Type: LABOROTA 4000

Modal name: 519-00000-00-3

AC 230/240V 50/60 Hz

Ser No: 080714517

A rotary evaporator is a device used in chemical laboratories for the efficient and gentle removal of solvents from samples by evaporation. When referenced in the chemistry research literature, description of the use of this technique and equipment may include the phrase "rotary evaporator", though use is often rather signalled by other language.



Ball milling machine

Model name: PM200

Serial number: 1215200215L

Power 1~220-230V 50/60Hz

A ball mill is a type of grinder used to grind and blend materials for use in mineral dressing processes, paints, pyrotechnics, and ceramics. The material to be ground is fed from the left through a 60° cone and the product is discharged through a 30° cone to the right. As the shell rotates, the balls are lifted up on the rising side of the shell and then they cascade down (or drop down on to the feed), from near the top of the shell. The ball mill is used for grinding materials such as coal, pigments, and feldspar for pottery. Grinding can be carried out either wet or dry but the former is performed at low speed. Blending of explosives is an example of an application for rubber balls.



Microwave oven

Model name: ME9114W

230V-50Hz

A basic laboratory microwave from Microwave Research and Applications for staining microscope tissue samples, waste solids testing, moisture testing, chemical processing, agar heating and other laboratory processing. It produces up to 1,000 watts of microwave power, the most common power level of domestic microwaves sold today meaning you should be able to use your existing protocol. The microwave has a powered cavity ventilation system that can be connected into the house air handling system or to an approved laboratory air handling system.



Centrifuge Machine

A centrifuge is a piece of equipment that puts an object in rotation around a fixed axis (spins it in a circle), applying a potentially strong force perpendicular to the axis of spin (outward). The centrifuge works using the sedimentation principle, where the centripetal acceleration causes denser substances and particles to move outward in the radial direction.



Refrigerated thermostatic bath

Model name: RA12

Nr. LCK1908-15-0023

230V;50 Hz

The cooling technology of the cooling thermostats RA 8, RA 12 and RA 24 enables cooling performance through the entire temperature range of -25 up to 100 °C. Emptying the heat transfer liquid is done by a drain connection on the rear side of the devices. Bath covers and pump kits are included in the standard equipment.

