Common Laboratory Apparatus & Equipments

Laboratory Apparatuses

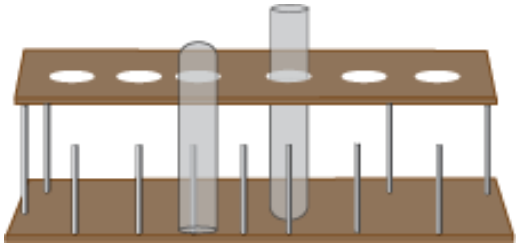
Experimentation

Science and especially chemistry require a lot of experimentation and various types of things are required for carrying out these experiments. The substances that are required to carry out experiments are known as apparatus. Some common apparatus that are required in a chemistry laboratory are discussed below.

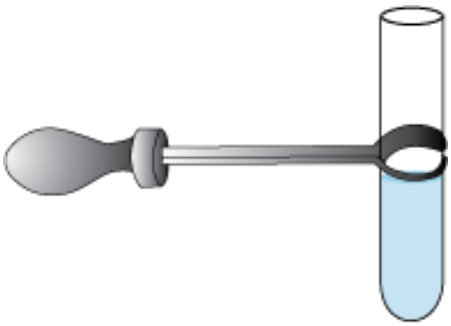
Laboratory Apparatuses

Test tube: It is a glass tube with one end open and the other closed. The test tubes are of different types and made of different types of glass. The test tube which can be heated directly on flame is called hard glass test tube or boiling test tube. Such test tubes are made of pyrex glass.

Test tube stand: It is a plastic or wooden stand for keeping test tubes. It has holes as well as bars to keep the test tubes upright and in inverted position respectively.



Test tube holder: It is an iron tong with plastic or wooden handle. It is used to hold a test tube when the substance is being heated or strong chemicals such as acids or alkalis are being poured into the test tube.



Beaker: It is an open glass container with a lip for pouring liquids. It is of various sizes and is used to store and mix chemicals.

Round-bottom flask: It is a glass container with a spherical bulb and a narrow cylindrical neck. It is generally used for heating liquids.

Flat-bottom flask: It is a glass container having a spherical bulb with a flattened base and a narrow cylindrical neck. It is used for storing and mixing liquid chemicals and should not be used for heating purposes.

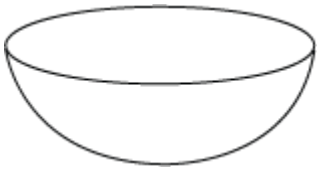
Conical flask: It is a conical-shaped flat-bottom flask. It is used for storing and mixing liquid chemicals.

Glass tubing: It is a hollow glass tube of 1.5 mm radius, which is open at both ends. It is shaped to make delivery tubes of different shapes by heating.

Glass rod: It is a solid tube of 1.5 mm radius. It is used for stirring liquid chemicals.

Funnel: It is a conical-shaped vessel with a long tapering neck. It is made of either glass or plastic. It is of various sizes and is used to pour liquids from one vessel to another.

China dish: It is a dish made of porcelain. It is used for evaporating liquids by heating and hence also called evaporating dish.

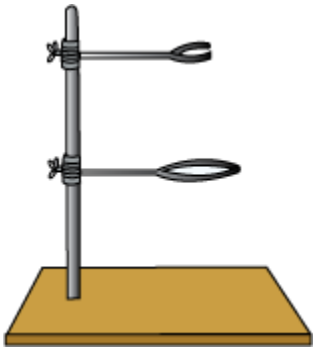


Pipette: It is a long narrow tube with a nozzle at one end and a bulb in the middle. It is used for measuring and transferring fixed volume of liquid chemicals. To signify the volume of liquid, a circular mark is made on its neck.

Burette: It is a long graduated tube with a stopcock at its bottom end. It is used for measuring and transferring fixed volume of liquid chemicals. It is graduated with 50 mL.

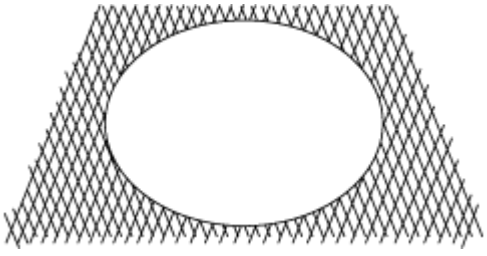
Measuring cylinder: It is a cylindrical glass vessel with a flat base and a lip near the top. It is used to measure fixed volume of a liquid chemical. It is also called graduated jar.

Iron stand: It is used for holding apparatus such as round-bottom flask or test tubes in a specific position.



Tripod stand: It is made up of cast iron. It is used for supporting apparatus. It is called tripod stand because it has three legs.

Asbestos wire gauge: It is an iron wire mesh with thin asbestos fixed in the middle. It helps in even distribution of heat from the burner to the glass apparatus.



Pestle and mortar: They are made of porcelain. Solid substances are ground into powder in a mortar with the help of a pestle.

Spirit lamp: It consists of a tank containing liquid with a neck through which a cotton wick passes. It is used for heating. The wick soaks up the spirit and burns when lighted.

Bunsen burner: Nowadays, spirit lamps have been replaced by Bunsen burners. Used for heating purposes, the Bunsen burner is connected to a gas supply. The mixture of gas (from the nozzle) and air (from the air holes) burns on the top of burner tube with blue flame when ignited.

Recording An Experiment

Recording of an experiment should be done in the following order.

- Experiment number
- Object (Aim) of the experiment
- Apparatus
- Procedure
- Observations
- Result
- Precautions

Laboratory Safety Precautions

- Always work under the supervision of teacher or laboratory assistant.
- Always wear a lab coat and shoes in the laboratory.
- Clean the work area properly once the work is done.
- Avoid direct touching or inhaling of any substance or gas.
- Wash your hands properly before leaving the lab.
- Never point the open end of the test tube at yourself or others.
- Use a pipetting device to fill the pipette.
- Carefully handle the hot glassware and apparatus in the laboratory.
- Wash the apparatus properly after completing the experiment.