

# COMMON LABORATORY APPARATUS AND EQUIPMENTS

## INTRODUCTION

**SUBJECT-CHEMISTRY**

**CHAPTER-02**

**CHAPTER NAME-COMMON LABORATORY APPARATUS AND  
EQUIPMENTS**

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# INTRODUCTION TO LABORATORY FACILITIES

The knowledge of chemistry would be incomplete if we do not utilise our ability to observe a natural phenomenon, then put in to an experiment and finally, draw our own conclusions to verify the facts.

## LABORATORY

A chemical laboratory is a place to perform experiments, observe chemical processes and to analyse



## WORKING TABLE

- ❖ It is a special type of table, fitted with a gas burner, a sink with a tap, a reagent shelf and a waste paper basket. There is also a side shelf for keeping glassware apparatus and a fume closet.



## REAGENT SHELF

- ❖ This Shelf is meant for keeping all reagents with labels on every bottle to certainly avoid confusion.



## EXHAUST FAN

- ❖ These fans are fitted near the roof of the walls to expel poisonous gases and fumes so that one can comfortably work for a longer time in the laboratory.



## BALANCE ROOM

- ❖ A Chemical Laboratory has a separate room where a number of physical, chemical and electronic balances are kept for weighing chemicals.



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# DESCRIPTION AND USES OF LABORATORY APPARATUS

A good Chemical Laboratory must have the apparatus and equipment shown below.

**SPECIAL NOTE:** Most of the Laboratory apparatus are made of glass because of the following factors -

- Glass is transparent.
- Glass can withstand high temperatures
- Glass is easy to clean.
- Glass do not react with chemicals
- Pyrex glass or Borosil glass is used for making laboratory equipment.



# DIAGRAMS OF SOME COMMON LABORATORY APPARATUS



## USES OF SOME LABORATORY APPARATUS

Name of Apparatus	Description	Use
▪ Test tube	Made of hard or Pyrex glass.	Used to conduct tests with small amount of chemical for heating and boiling purposes.
▪ Beaker	Made of glass and available in different sizes.	For preparation and keeping of solutions.
▪ Bunsen Burner	A burner that uses gas as a fuel.	For heating purposes
▪ Gas Jar	Glass cylinder	For collecting gases

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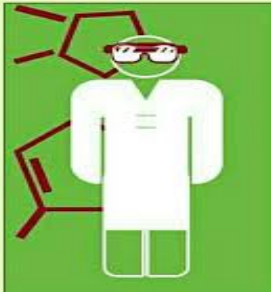














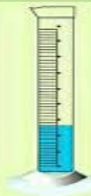

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# PRECAUTIONS IN A CHEMICAL LABORATORY

- Do not work alone in the laboratory.
- Always wear a lab coat.
- Follow your teacher's instructions.
- Do not touch or taste any unknown substances.
- Do not inhale any unknown gases.
- Do not throw hot concentrated acids directly into the sink.
- Do not throw broken glass apparatus or used filter paper in the sink.
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- In case of accidental burns, immediately wash affected part with running water.
- Maintain silence and discipline in the Laboratory.



# SAFETY RULES IN A CHEMICAL LABORATORY

 <h2>Lab Safety Rules</h2> <p>Science labs offer great opportunities for learning, teaching, and research. They also pose hazards that require proper safety precautions.</p>	 <h3>Dress appropriately</h3> <p>Tie back long hair, and wear suitable gloves, goggles, and other protective equipment.</p>	<h3>Proper supervision</h3> <p>Don't perform lab experiments without instructor supervision (unless given permission to do so)</p> 	
	 <h3>Know location of emergency numbers &amp; safety equipment</h3> <p>Know the location of safety equipment &amp; emergency phone numbers. So you can access them quickly if necessary.</p> 	 <h3>No Food</h3> <p>Don't eat or drink in lab and never taste chemicals</p>	 <h3>ID Hazards</h3> <p>Identify hazardous materials before beginning labs</p>
	<h3>Be careful when handling hot glassware</h3> <p>Turn off all heating appliances when not in use. Keep flammable objects away from your workspace.</p>  	 <h3>Be Attentive</h3> <p>Be attentive while in the lab. Don't leave lit Bunsen burners unattended or leave an experiment in progress.</p>	
	  <h3>Keep a clean workspace</h3> <p>Don't obstruct work areas, floors or exits. Keep coats, bags, and other personal items stored in designated areas away from the lab. Don't block sink drains with debris.</p>	 <h3>Handle glassware carefully</h3> <p>Properly dispose of anything that is broken, report cuts, spills, and broken glass to your instructor immediately.</p>	  <h3>Clean up</h3> <p>After completing the lab, carefully clear workspace and the equipment, and wash your hands.</p>
 <h3>Stay safe when conducting your labs by following these guidelines.</h3>	 <p>with Confidence</p>		

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