CHE 101L

General Chemistry Lab

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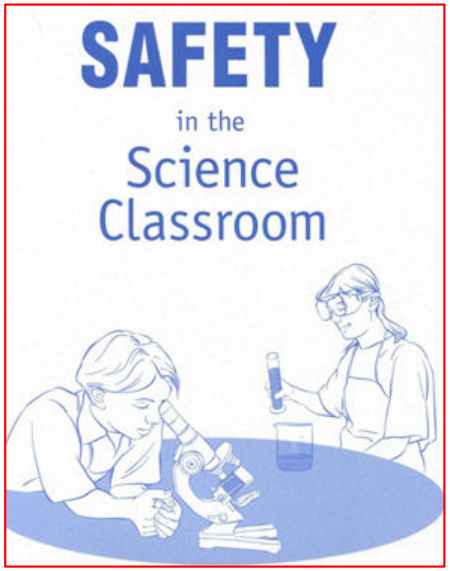
Laboratory procedures

- **Practical laboratory science has many objectives and opinion:**
- **The growth of experience and knowledge in laboratory safety**
- **Experience in scientific instrumentation**

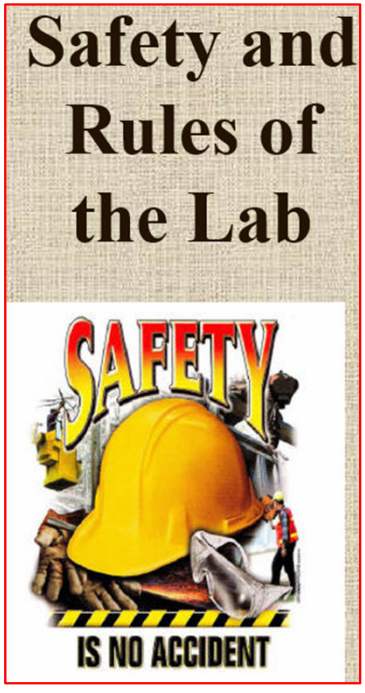


Laboratory Attendance

- **All laboratory classes must be attended except in cases of illness**

Laboratory Hours

- **No student may work in the laboratory outside the allotted class periods without permission from the laboratory supervisor**



Safety

Accidents

- From time to time accidents do occur in the laboratory
- If you receive a chemical burn from acid, alkali, etc., immediately flood the affected area with water
- For all accidents, immediately informed to demonstrator

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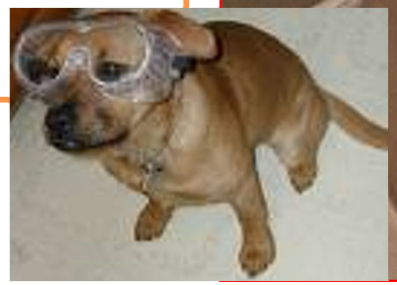
Allergies

- If you are aware that you suffer from allergic reactions to any type of chemical, please inform the Unit Coordinator and your laboratory demonstrator before the commencement of laboratory classes

Safety Glasses

- In order to minimise the risk of eye damage, safety glasses must be worn in the laboratory by all persons at all times



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Chemical Safety

- Read all labels twice before removing a chemical from the container
- Only use the type and amount of chemical instructed to use
- Never touch, taste, or smell a chemical unless instructed by the teacher
- Never mix chemicals unless instructed to do so

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Toxic and Corrosive Chemicals

- Splashing by corrosive chemicals most frequently arises when test tubes are heated too rapidly
- Test tubes should never be placed inside a Bunsen flame, but held above it and shaken gently
- Concentrated acids should always be diluted by pouring the acid carefully into water; never add water to concentrated acid solutions

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Toxic and Corrosive Chemicals

- If either skin or clothing is splashed with any corrosive liquid, immediately douse with large quantities of water over
- *No liquids* are to be pipetted by mouth; manually operated pipette pumps are available in the laboratory

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Forbidden

- Smoking, eating and drinking - are absolutely forbidden at all times in the laboratory

Oxidising Agents

- Chemicals such as nitric acid and hydrogen peroxide, permanganates, persulfates, chlorates and (particularly) perchlorates, can be very dangerous when in contact with oxidisable materials

Reducing Agents

- Some reducing agents, such as sodium metal and lithium aluminium hydride, can react with explosive violence on contact with water

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Fire

- Fires can arise from incompletely extinguished matches or spills being placed in waste paper baskets
- For fire-fighting, every laboratory room is provided with Bromochlorodifluoromethane (BCF) or carbon dioxide extinguishers

Clothing

- You must be adequately clothed to be admitted to a laboratory. Covered shoes (not sandals or thongs) must always be worn.

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Glassware

- Dispose of broken glassware safely after notifying your demonstrator

Summary of important rules

- You MUST: wear shoes, wear safety glasses and a laboratory coat, tie back long hair, report all accidents immediately
- You MUST NOT: drink, eat, smoke, work unsupervised, use volatile solvents near a flame

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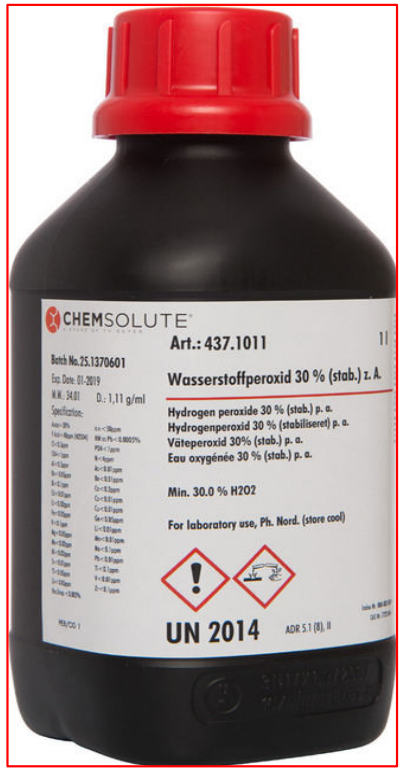
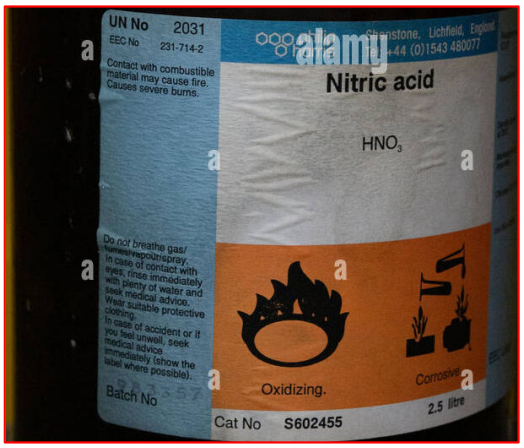
Chemical Hazard Symbols





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Glass Apparatus & Instruments


Pipette Filler

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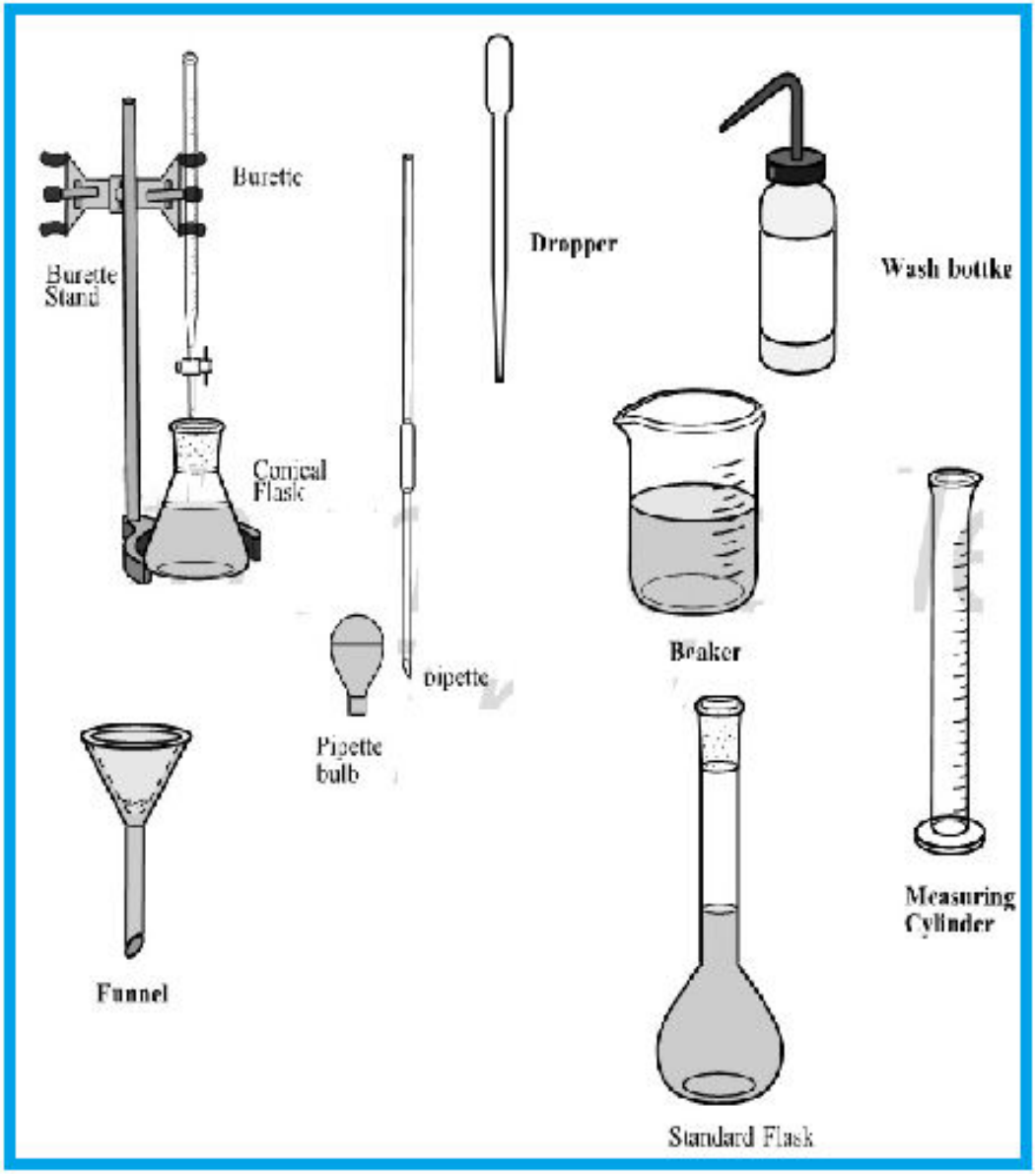
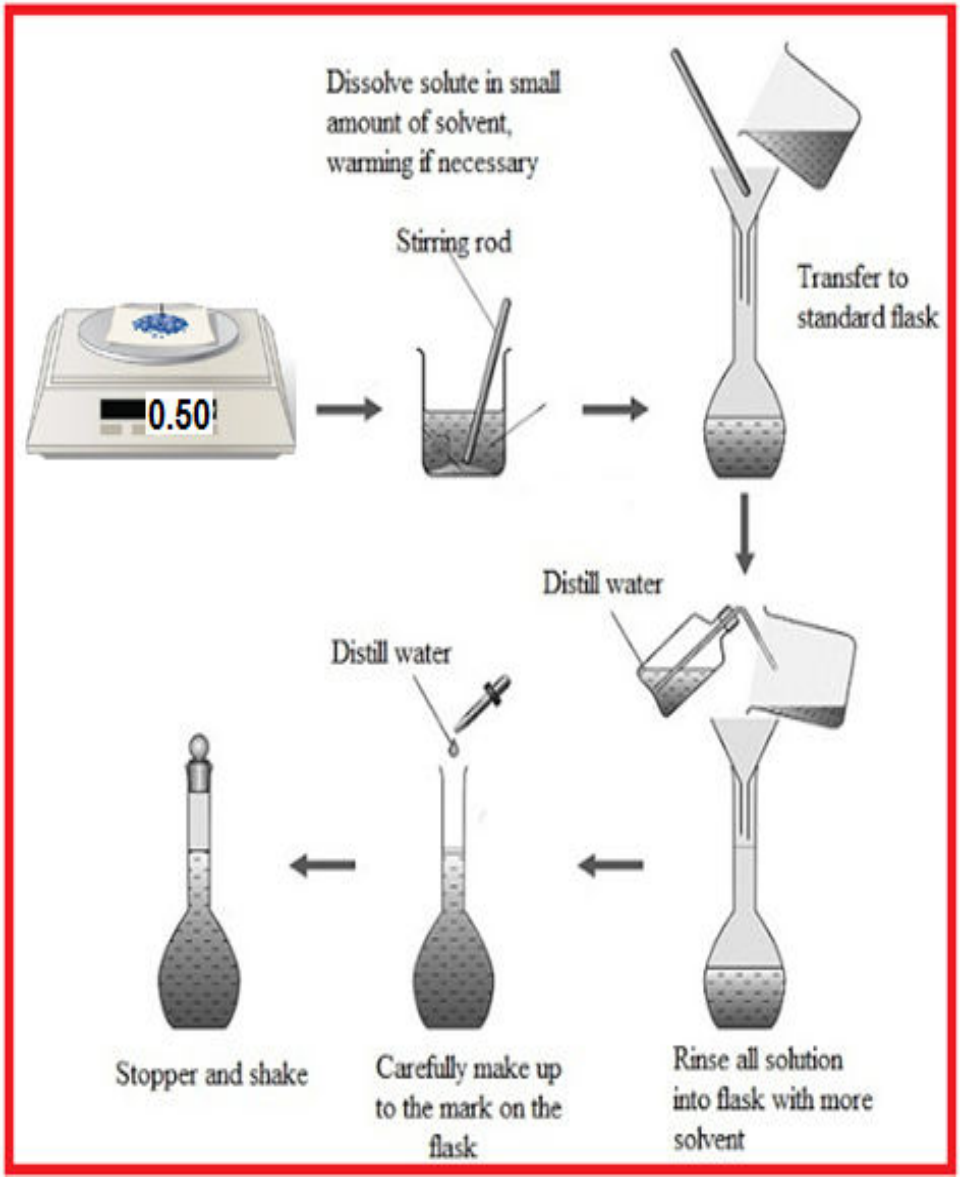

Burette
Burette Stand
Conical Flask
Dropper
Wash bottle
pipette
Pipette bulb
Beaker
Measuring Cylinder
Funnel
Standard Flask


Dissolve solute in small amount of solvent, warming if necessary
Stirring rod
Transfer to standard flask
0.50
Distill water
Distill water
Stopper and shake
Carefully make up to the mark on the flask
Rinse all solution into flask with more solvent

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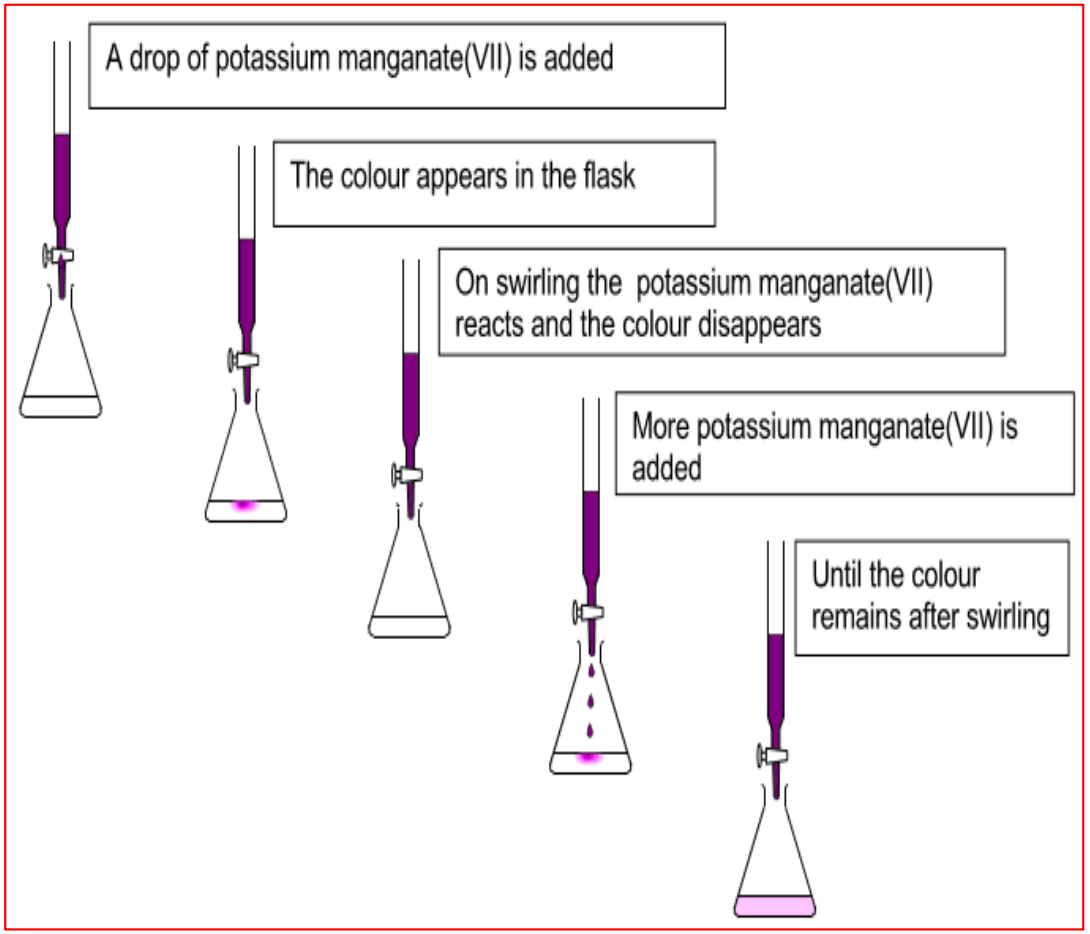
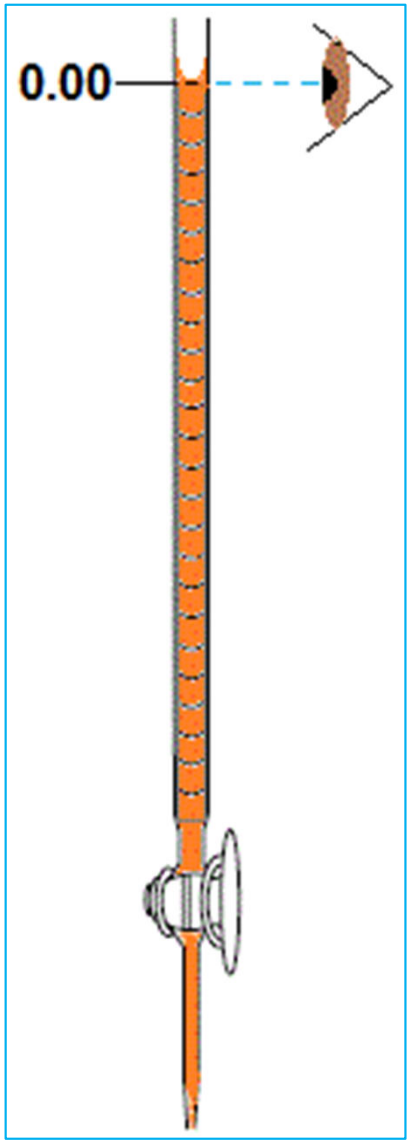

A drop of potassium manganate(VII) is added
The colour appears in the flask
On swirling the potassium manganate(VII) reacts and the colour disappears
More potassium manganate(VII) is added
Until the colour remains after swirling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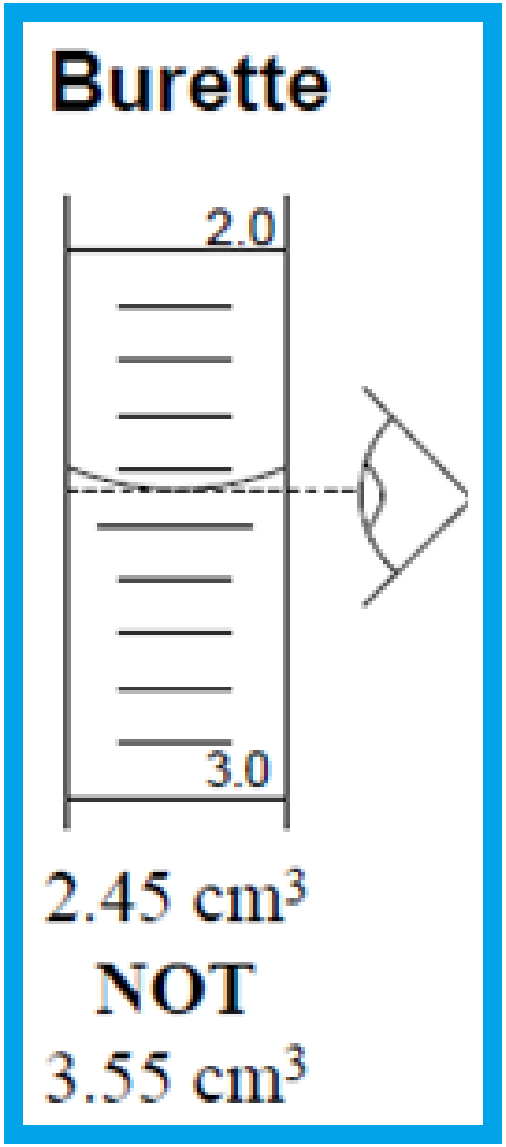
Burette
2.0
3.0
2.45 cm3
NOT
3.55 cm3

Thank You for Listening

Any Question