

Laboratory Equipment

Section 1L

Chemistry I & II



Erlenmeyer Flask

- Used to contain liquids or solids that may release gases when mixed or heated.
- Narrow neck provides safety in case of splattering when heating or stirring
- Available in various sizes
- Developed in 1861 by German Chemist Emil Erlenmeyer



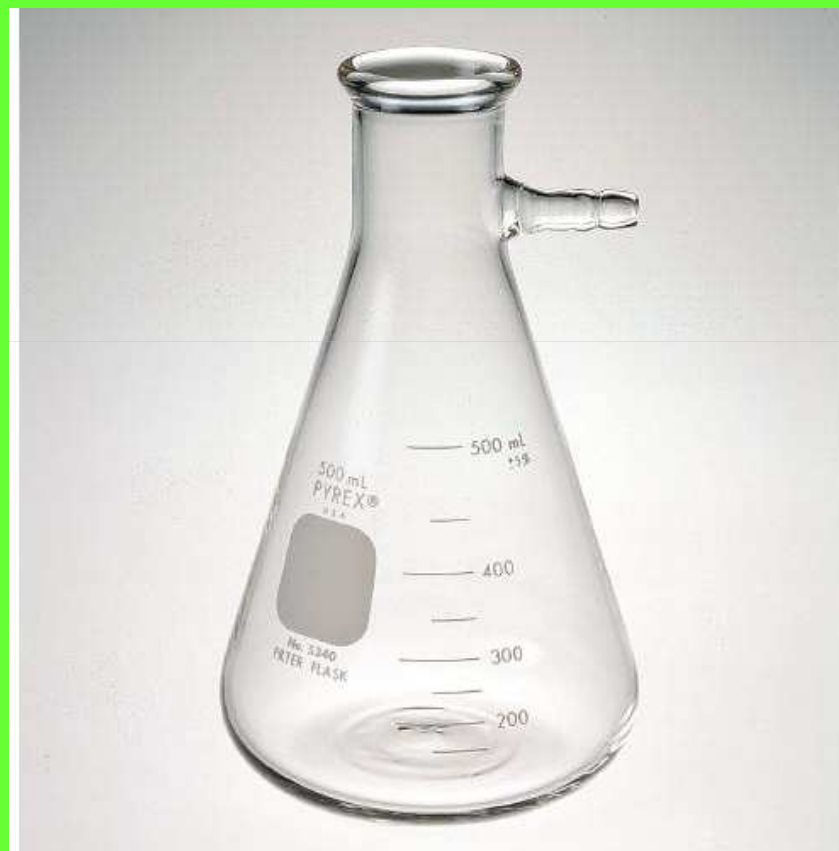
Volumetric Flask



- Used to prepare standard solutions
- Calibrated for a specific volume
- Typically stoppered with a glass or rubber stopper or a cork
- Available in various sizes

Filter Flask

- Used for vacuum filtration – a technique for separating a solid product from a solvent or liquid reaction mixture.
- Available in various sizes



Florence Flask



- Used for mixing chemicals
- Narrow neck prevents splashing
- Available in different sizes

Beaker

- Used to mix or hold solids and liquids when there is no fear of splattering when heated or stirred.
- Available in various sizes



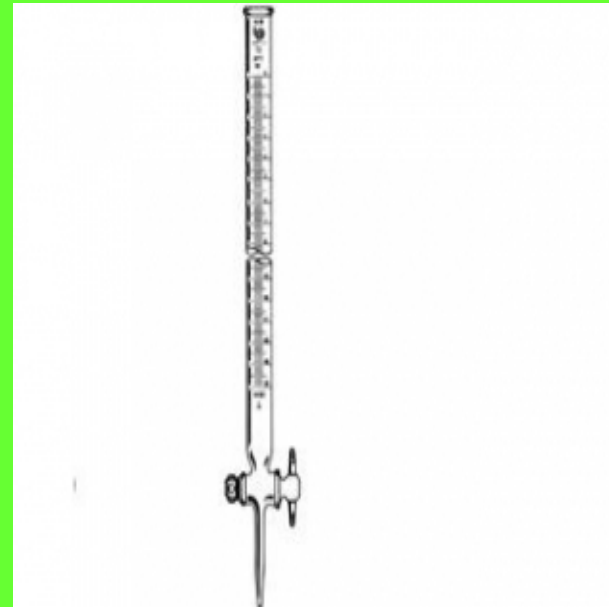
Graduated Cylinder



- Used to make precise measurements when measuring a specific volume of a liquid
- Available in various sizes

Buret

- Used to measure a precise volume of liquid
- Typically used to measure liquid into a beaker or flask
- Available in various sizes



Gas Collecting Bottles



- Used to collect large volumes of gas through the use of water displacement

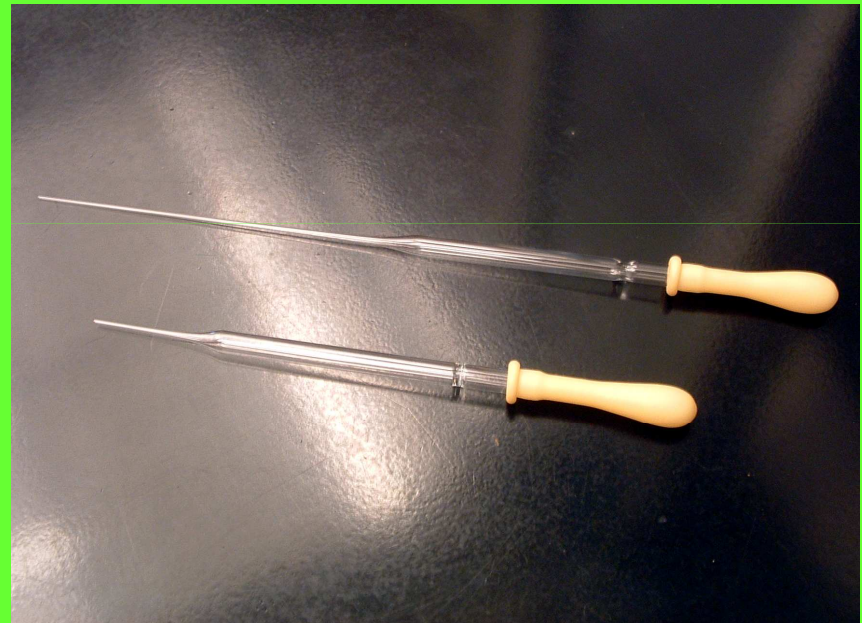
Crucible and Lid

- Used to heat solids typically over a bunsen burner flame



Pasteur Pipet and Bulb

- Used to transfer liquids, typically in small volumes



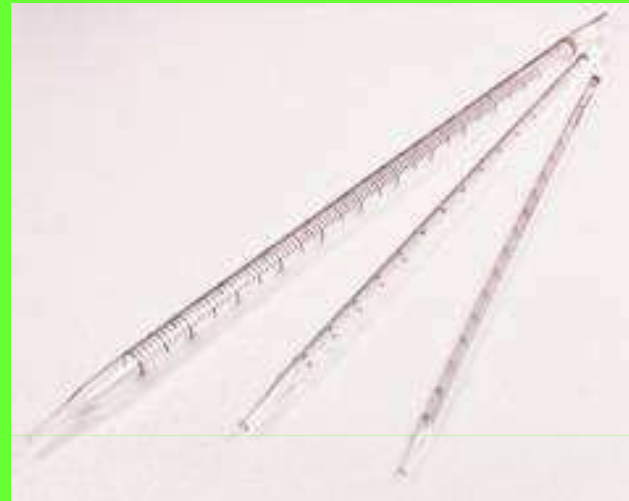
Beral Pipet



- Used to transfer small volumes of liquid

Other Pipets

- Transfer Pipets
 - Transfer small volumes of liquid quantitatively
- Volumetric Pipets
 - Transfer small volumes of liquid quantitatively





Thistle Tube

- Used to add liquid to an existing system apparatus.

Medicine Dropper with Rubber Bulb

- Used to dispense very small amounts of liquid, typically drop by drop



Evaporating Dish

- Used to evaporate solutions (evaporate liquid, leaving solid behind)



Watch Glass

- Used to evaporate solutions
- Cover beakers or containers during heating or short-term storage
- Used to hold solids



Mortar and Pestle



- Used to grind solids into a fine powder
 - Used in medicine



Weighing Boat

- Used to measure out solids to a specific mass on a balance



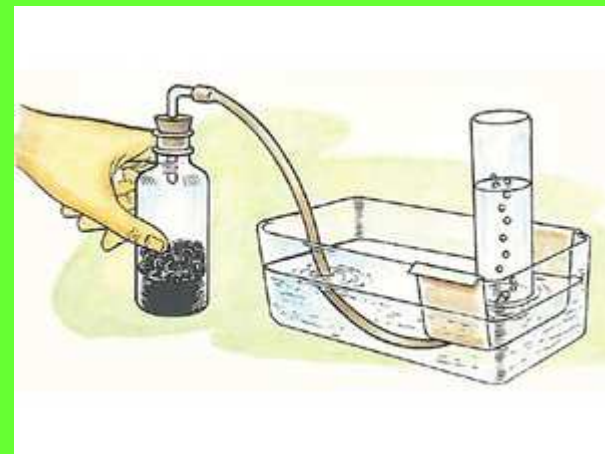
Test Tubes and Test Tube Rack



- Used to contain both liquids and solids
- Can be heated over a flame or in a sand or water bath
- Available in various sizes

Pneumatic Water Trough

- Used for collecting gases (such as hydrogen and oxygen) through the use of water displacement.



Spot Plate



- Used to hold small samples of solids/liquids to be tested and observed using other liquids.
- Available in plastic or ceramic

Buchner Funnel

- Used for filtering a solid from a liquid
- Used in vacuum filtration



Short Stem Funnel



- Used to transfer and filter solid particles from liquid solution

Stirring Rod and Rubber Policeman

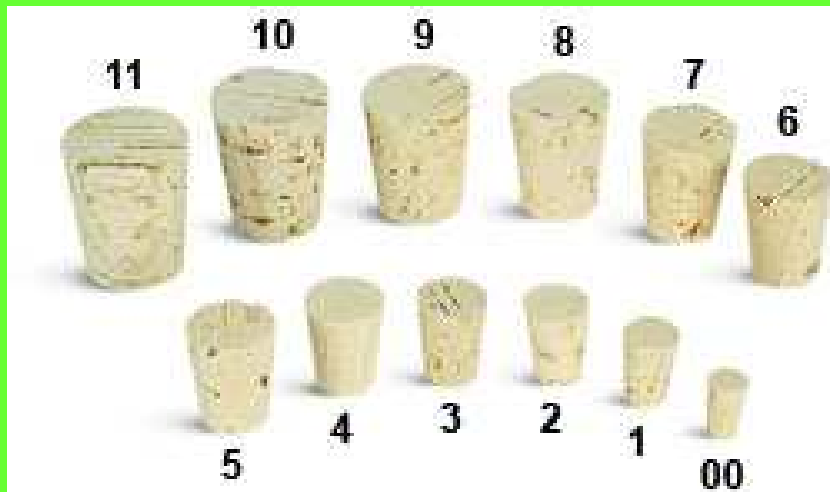
- Stir solutions (glass stirring rod)
- Transfer precipitates to separate container or funnel (rubber policeman)



Rubber Stoppers / Cork



- Used in test tubes and flasks to seal off containers.
- Available in various sizes
 - Gauge 00 to 8 in our lab
 - Smaller the gauge, smaller the stopper
 - Solid, one-hole, or two-hole

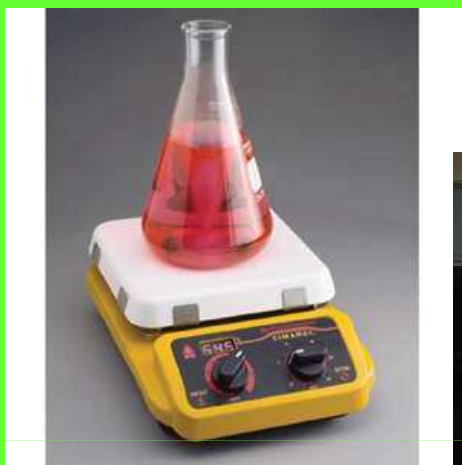


Electronic Balance

- Used to measure specific amounts of solids
- Needs calibrated using a weight with a known mass
- Provides mass in grams (with up to two or three decimal places)



Hot Plate and Magnetic Stirrer



- Used for heating solids or liquids in beakers, flasks, etc.
 - Allows for moderate control of heat
- Used for stirring solutions with the use of a stir bar when constant mixing is needed.



Bunsen Burner

- Used for heating solids and liquids over high heat.
- Able to control the amount of gas and air contributing to the flame.
- Gas carried to burner through the use of a rubber hose connected to gas valve at lab station.



Wing – Top Flame Spreader



- Used to spread the flame of a Bunsen Burner

Clay Triangle

- Used to support a crucible during heating using a ring stand, ring, and Bunsen burner



Forceps

- Used to grasp and hold small objects



Beaker Tong

- Used to grasp and hold beakers



Crucible Tongs



- Used to hold and move crucibles and hot glassware

Triangular File

- Used to score glass rods and tubing



Spatula

- Used to transfer solids from container to container



Scoopula

- Used to transfer solids from one container to another



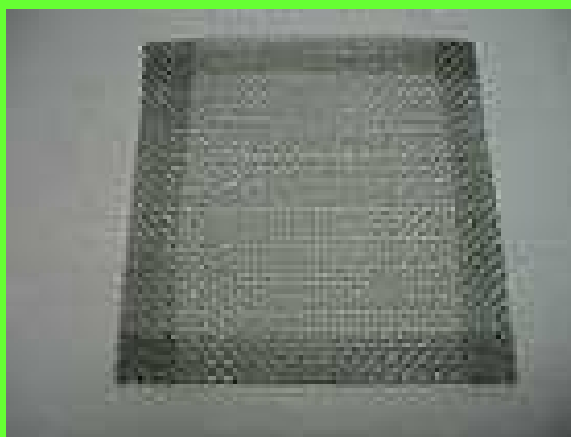
Striker

- Used to provide a spark to ignite burner
- Used in place of matches



Wire Gauze

- Used to support glassware during heating.
- Some have a ceramic center



Thermometer



- Used to measure temperature
- Most measure in degrees celsius
- Contain an colored alcohol solution – mercury no longer used in school thermometers

Ring Stand and Ring

- Used to support glassware and equipment



Desiccator

- Used to dry solids
- Typically contains some sort of material that will absorb water



Wash Bottle

- Used to wash precipitates
- Contains deionized or distilled water **ONLY!**



Double Buret Clamp



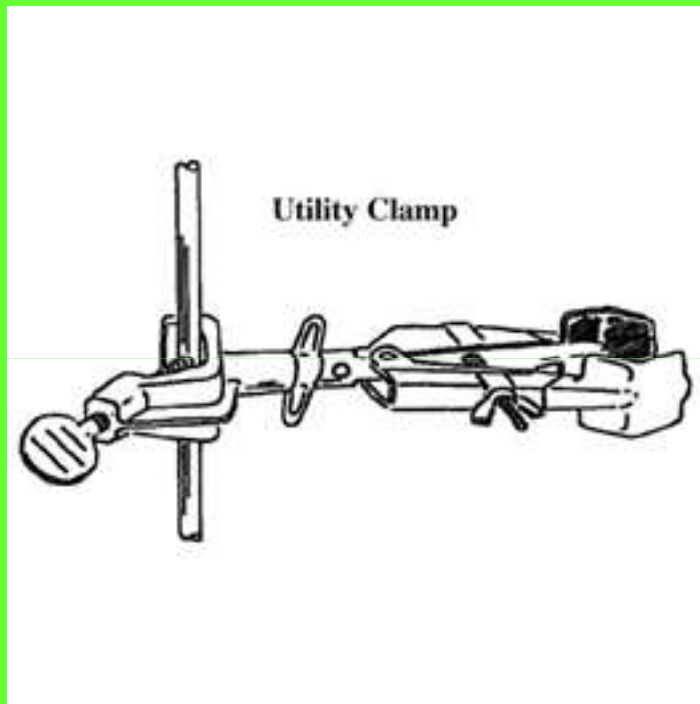
- Used to attach burets to a support (ring) stand

Test Tube Holder

- Used to hold test tubes



Utility Clamp



- Used to hold equipment or glassware to a support stand.



Pinch Clamp

- Used to close rubber tubing



Test Tube Brushes

- Used to clean glassware
- Available in different sizes



Fume Hood

- Used as a ventilation hood to remove gases from classroom.
- Some experiments will need carried out in fume hood to prevent spread of hazardous gases.

