

CHEMISTRY I LAB: KNOWING THE EQUIPMENT

WHAT TO TURN IN: *Data Table, #1-40*

OBJECTIVES

- To identify different pieces of laboratory equipment.
- To learn the uses of different pieces of laboratory equipment.

PROCEDURE

- 1) Obtain three copies of the data table with the headings *Equipment, Uses, and Sketch*. You may make a data table on paper if you did not print it.
- 2) As you view the equipment, learn the uses for each specific piece of equipment.
- 3) Use the pictures of equipment as necessary to make the identification.

FUNCTIONS OF MAJOR LABORATORY EQUIPMENT

- BALANCE (TRIPLE-BEAM, PLATFORM, ELECTRONIC): used to determine the mass of chemicals and small objects
- BEAKER: used to hold chemicals and liquids; may be heated
- BEAKER TONGS: tongs with rubber grips shaped to hold a beaker
- BÜCHNER FUNNEL: made of porcelain; works with suction to dry chemicals
- BUNSEN (GAS, LABORATORY) BURNER: used to heat chemicals
- BURET: used to measure volumes of solutions in titrations
- CERAMIC SQUARE: used under hot glassware
- CLAMP (UTILITY CLAMP, BURET CLAMP, TEST TUBE CLAMP): used to fasten or support apparatus
- CLAY (PIPESTEM) TRIANGLE: wire frame with porcelain supports; supports crucible
- CORK: used as a cap for test tubes and flasks
- CRUCIBLE AND COVER: used to heat small amounts of solids at high temperatures
- CRUCIBLE TONGS: used to pick up and hold crucible covers and small items
- DEFLAGRATING (COMBUSTION) SPOON: used to heat very small amounts of chemicals directly in the flame
- DISPOSABLE PLASTIC PIPET/MEDICINE DROPPER: small; used to transfer small amounts of liquid; made of disposable plastic
- DOUBLE BURET CLAMP: special clamp holding two burets to a ring stand
- DROPPER PIPET: used to transfer small volumes of liquid
- ERLLENMEYER FLASK: flat-bottomed flask; may be heated
- EUDIOMETER (GAS COLLECTING TUBE): large tube used to measure gas volumes
- EYEDROPPER / MEDICINE DROPPER / DROPPER PIPET: small; used to transfer small amounts of liquid
- FILTER PAPER: semi-permeable paper used in separating mixtures
- FLORENCE FLASK: round-bottomed flask; may be heated
- FORCEPS: used to hold or pick up small objects
- FUNNEL: used to transfer liquids without spilling

- GRADUATED CYLINDER: used to measure approximate volume; more accurate than a beaker; should not be heated
- GRADUATED PIPET: used to measure small volumes; more accurate than a graduated cylinder but less accurate than a volumetric pipet
- MORTAR AND PESTLE: used to grind crystals and lumpy chemicals to a powder
- PINCH CLAMP: used to block off rubber tubing; small clamp
- PIPET/RUBBER BULB: used to draw liquid into a pipet to fill it
- PIPET: long graduated glass tube for measuring liquids; works like a syringe
- PLASTIC WASH BOTTLE: used to dispense distilled water
- PNEUMATIC TROUGH: used in gas collection experiments
- RING CLAMP / IRON RING: used as a support, fastened to the ring stand
- RING STAND: used as a support for various types of clamps
- ROD (METAL OR GLASS) WITH NICHROME WIRE: used in flame tests
- RUBBER STOPPER: used as a cap for test tubes and flasks
- RUBBER TUBING: used to connect burners to the gas jet
- SAFETY GOGGLES/GLASSES: worn in the lab to protect the eyes
- SCREW CLAMP: used to block off rubber tubing; small clamp
- SEPARATORY FUNNEL: seal and gently shake to mix chemicals before separating them into layers; can drain off each layer as needed
- SPATULA / SCOOPULA: used to transfer solid chemicals
- SPOT PLATE: used to hold and test small amounts of chemicals in multiple “wells”
- STIRRING ROD: used to stir, remove precipitates, and assist in pouring liquids; may be glass or strong plastic
- TEST TUBE: holds various amounts of chemicals; best to heat gently and indirectly
- TEST TUBE BRUSH: used to clean inside glassware
- TEST TUBE HOLDER: metal clamp with a spring handle; holds a test tubes in the hand
- TEST TUBE RACK: used to hold test tubes in a stable vertical position; metal, plastic, or wood
- THERMOMETER: used to determine the temperature of chemicals
- TRIANGULAR FILE: used to scratch glass tubing before breaking it into desired length
- TRIPOD: used to support containers of chemicals above the flame of a burner
- VOLUMETRIC FLASK: used to make solutions; has a one-liter etched mark
- VOLUMETRIC PIPET: the most accurate way to measure a volume of a solution; should not be heated
- WATCH GLASS: used to cover an evaporating dish or beaker; used to hold small amounts of chemicals to evaporate excess liquid
- WIDE-MOUTH BOTTLE: general container; used with pneumatic trough to collect gas
- WING TOP: fans out the burner flame; made of metal
- WIRE GAUZE: used to spread the heat of a burner flame and to support glassware
- WOOD SPLINT: small wooden stick used for flame tests and testing small amounts of flammable gases and vapors