Test Tube

A test tube is a tube-shaped piece of glassware or plastic used for holding substances during experiments. Micro test tubes are smaller test tubes that reduce waste and expense.

Test Tube Rack

A test tube rack is a wooden or plastic stand that holds a large number of test tubes at once.

Test Tube Holder

A test tube holder is a small metal tool designed to hold a single test tube. Squeeze the handles of the test tube holder to open, and put the test tube in the open end. Release your squeeze to close the test tube holder around the test tube. Squeeze again to release the grip on the test tube for removal.

Test Tube Brush

A test tube brush is a long, thin brush used to clean test tubes after use.

Watch Glass

A watch glass is a rounded piece of glass shaped a bit like a lens in a pair of glasses. A watch glass can be used as an evaporating dish for very small amounts of liquid. It can also be used to cover beakers to keep a gas from escaping.

Balance (or Scale)

A balance is used to measure the mass of a substance. Two types are the triple beam balance and the electronic balance. Before using it, be sure to tare, or zero, the balance. Do not bump the balance after zeroing it. Place the substance you want to measure in the center of the pan. When it is stabilized, read and record the mass in grams (g). Do not place powders directly onto a balance; use a dish or weighing paper. Handle objects with tongs, tweezers, gloves, or paper to prevent fingerprints. Measure the mass of cool objects, not hot objects.

Spatula

A spatula is a slim metal scoop used to transfer solids from one container to another.

Weighing Paper

Weighing paper is used as a container for weighing powdered solids. To keep the solid in the middle of the paper, crease the paper down the middle or fold it in half twice and open it up. For an electronic balance, place the paper on the balance first, zero the balance, then place the solid on the paper and measure the mass. If you are using a triple beam balance, first measure the mass of the paper, then measure the mass of the paper and your solid. Subtract the mass of the paper from the total mass to determine the mass of the solid.

Erlenmeyer Flask

The Erlenmeyer flask is a piece of glassware with a wide circular base and a narrow neck. It is used as a container for liquids. Its cone shape allows easy and safe swirling of a liquid without the liquid splashing over the top. Erlenmeyer flasks are not used to measure the volume of a liquid because the cone shape makes measurement difficult.

Burette

A burette is a graduated piece of glassware used to measure precise amounts of liquid. It consists of a long glass tube with graduations, or markings, along the length of the tube. There is a valve at the bottom. Pour liquid into the burette with the valve closed. Then open the valve to release liquid into a container below the burette. To determine the volume of liquid that went into the container below the burette, measure the liquid level before and after the liquid has been released into the container. The difference between these two measurements is the volume of liquid delivered. Most burettes are marked in tenths of a milliliter.

Magnetic Stirrer

A magnetic stirrer is used for dissolving solids in liquids. Most magnetic stirrers consist of a base with a speed-controlled spinning magnet inside and an external stirring bar magnet. To prevent breakage, gently place (do not drop) the stirring bar into a flask or beaker by sliding it along the wall of the container. Place the container on the stirrer base and turn the speed control knob to the lowest setting that starts the bar turning in the container.

Pipette and Bulb

A pipette is used to measure exact volumes of liquids. Pipettes are much more precise than graduated cylinders. Liquid must be drawn into the pipette using a bulb. Never pipette directly from a reagent bottle. First pour the liquid into a beaker. Squeeze the pipette bulb, then place the tip of the pipette below the surface of the liquid. Gradually release your squeeze on the bulb to draw the liquid into the pipette. Do not allow any liquid to enter the bulb. Quickly remove the bulb from the pipette and place your thumb over the top of the pipette to prevent the solution from draining back into the container. Record the exact volume of liquid in the pipette. To release some liquid, roll your thumb to the side, then quickly roll it back.

Wash Bottle

A wash bottle is a plastic squeeze bottle with a narrow spout on one side. It is filled with distilled water to rinse solids out of a container when filtering. It is also used to add controlled amounts of water to test tubes, graduated cylinders, or other small containers.

Filter Paper

Filter paper is used with a glass funnel to separate a solid from a liquid. To prepare the filter paper, fold the paper in half, then fold it in half again. Look at the four edges of paper. Hold three of these edges of paper and squeeze the sides of the folded paper to open it into a cone. Place this cone of paper into the funnel. Support the funnel on a ring stand with a clay triangle. Place a "catch container" under the stem of the filter funnel and adjust the height of the ring on the ring stand until the tip of the stem is below the mouth of the container. Use a wash bottle to wet down the inside of the filter paper to help it stick to the funnel.

Funnel

A funnel is a cone-shaped piece of glassware or plastic used to pour liquids or other substances into a container. A glass funnel can be used with filter paper for gravity filtering. To use a funnel for gravity filtering, support the funnel on the ring of a ring stand by using a clay triangle. Place the clay triangle across the ring and put the filter into the triangle. Be sure to put a "catch container" directly under the stem of the filter. Pour the mixture of liquid and solid onto the filter paper that was placed in the funnel. The liquid will drip into the container, and the solid will remain on the filter paper.

Beaker

A beaker is a cylindrical glass container. Beakers are the most versatile glassware in the lab. Use beakers as containers for holding liquids and for mixing substances. The markings on a beaker are only for estimates, not accurate volume measurements.

Hot Plate

A hot plate is an electrical device used for heating solutions. Place beakers directly on the hot plate, which is plugged into an ordinary electrical outlet. Use the dial on the hot plate to adjust the temperature. Always turn off hot plates when not in use. Do not get the plug wet.

Boiling Stones

Boiling stones are small stones that are added to liquids to make them boil more smoothly. These stones are commonly known as boil easers or antibumping agents. Boiling stones help prevent "bumping," which can cause hot solution to splash out of the beaker.

Stirring Rod

A stirring rod is a piece of glass about 8 to 12 inches in length and typically less than 1/2 inch in diameter used for stirring solutions. While pouring a liquid from one container to another, use the stirring rod to prevent splashing by allowing the liquid to flow down the rod.

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Utility Clamp

A utility clamp is used to hold a test tube or Erlenmeyer flask above the lab table. This is especially useful when you are heating the contents of a test tube or an Erlenmeyer flask. The utility clamp can be attached to a ring stand.

Crucible

A crucible is a dish used in performing chemical reactions and chemical analysis. Crucibles are usually made of porcelain and can stand very high temperatures in a Bunsen burner flame or an oven. But a crucible can break if dropped or if set down on cool countertops while still hot. Use a clay triangle to support a crucible when the crucible is heated over a Bunsen burner. Heat a crucible slowly by keeping the Bunsen burner farther away at first and then bringing it closer as the crucible gets warmer. To cool a hot crucible, always place it on a wire gauze.

Clay Triangle

A clay triangle is used to support a crucible on a ring stand for heating with a Bunsen burner. A clay triangle can also be used to support a glass funnel on the ring of a ring stand during filtering.

Tongs

Tongs are used for picking up items that are dangerous to pick up by hand. Pick up hot items such as crucibles and crucible covers with tongs.

Thermometer

A thermometer is used to measure the temperature of solids, liquids, or gases. A thermometer contains a substance that changes in response to temperature. Bulb thermometers contain a liquid (such as mercury or alcohol) in a reservoir. When the liquid is heated, it expands into a narrow tube that has been marked to show the temperature. Temperature can be recorded in degrees Celsius, degrees Fahrenheit, or Kelvin. It is important to note which scale is on the thermometer.

Graduated Cylinder

A graduated cylinder is a cylindrical piece of glassware or plastic marked with graduations along its side. Use a graduated cylinder to make accurate measurements of liquid volumes, in milliliters, by comparing the level of the liquid with the marked graduations on the side. The top surface of the liquid is usually curved. This curve is called a meniscus. Record the volume at the bottom of the meniscus. The bumper ring on larger cylinders prevents breakage if the graduated cylinder is tipped over. Keep the bumper ring near the top of the cylinder.

Litmus Paper or pH Paper

Litmus paper is used to test the acidity or basicity of a substance, also known as the pH of a substance. An acid turns blue litmus paper red, and a base turns red litmus paper blue. Never dip the test paper into the solution being tested. Instead, place the test paper on a watch glass. Dip a clean stirring rod into the solution, then touch the wet stirring rod to the paper.

Tubing

Rubber tubing is usually used in the laboratory for transporting gases. Bunsen burners are hooked up to the gas outlet with tubing. Use a twisting motion to help put tubing in place when the fit is tight.

Bunsen Burner

Bunsen burners produce a flame to heat things in the lab. Bunsen burners usually use methane or propane gas, which is delivered through gas outlets at lab stations. To light a burner, first check that the nozzle at the base of the burner is open and clear. Attach the hose to the nozzle and the gas outlet. Turn the handle on the outlet 90°. When the gas is on, it makes a soft hissing sound. Use the striker to light the burner. If the flame is yellow, the burner needs more air. Adjust the air control vent by rotating the cylindrical metal tube at the bottom of the burner. Turn the outlet handle back to its original position to turn off the burner.

Striker

A striker is used to create a spark to ignite the gas coming from a Bunsen burner. Place the striker over the source of the gas and squeeze the handle.

Wire Gauze

Wire gauze is a square piece of metal mesh used to support a beaker on a metal ring. Wire gauze is very durable and can take extensive heating. To heat a beaker and its contents, clamp the metal ring to a ring stand, place the wire gauze across the ring, and set the beaker on the gauze. Place a Bunsen burner under the wire gauze.

Ring Stand

A ring stand is an iron support structure with a heavy metal base. It is used to hold a beaker or crucible above a Bunsen burner. The support ring is attached to the ring stand by a metal utility clamp and can be moved up or down. Wire gauze is placed on top of the ring to support the beaker or crucible.