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LABWARE PICTURE GLOSSARY

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Pack your lab like a pro with this chemistry labware guide. Complete with images, names, and types of common lab items and their uses, this picture glossary will help you select the right supplies.

Popular Glassware

Griffin beakers are used to mix chemicals, dissolve into solutions, heat or cool solutions, and hold sand or water baths. They typically have graduations, but they are not very accurate.

Erlenmeyer flasks, like beakers, can be used to mix, dissolve into solutions, and heat or cool solutions. In addition, they can be plugged with stoppers and used to catch vapor or condensed liquid. Graduations are not very accurate.

Florence/boiling flasks are round to provide uniform heating or boiling of liquids. They can be used to mix or store solutions as well as collect vapor in distillation processes. They can have either round or flat bottoms.

Volumetric flasks are used to accurately prepare solutions. A weighed amount of solid chemical is placed at the bottom, and the liquid solvent is added until the fill line is reached.

Filtering flasks are used to filter mixtures through a funnel and filter paper. A tube near the top prevents unwanted pressure buildup. The process can be accelerated with a vacuum pump.

Graduated cylinders are used for precise and accurate measurement. Smaller sizes can be more accurate, but hold less volume, while larger sizes sacrifice accuracy for volume.

Test tubes are used to observe chemical reactions, mix solutions, heat solutions, melt or burn solids, and perform chemical analysis.

Burettes are used to measure liquids drop-by-drop for titration experiments or other experiments requiring precise measurement.

Bottles are used to store solid and liquid chemicals for extended periods of time. **Barnes bottles** (pictured) are small bottles with dropper lids for drop-by-drop measurement.

Condensers are used to condense chemical vapor into a liquid. This is done by sending the vapor through a long (often coiled) glass tube to cool.

Evaporating dishes are used to separate water and solids from a solution by allowing the water to evaporate off into the air. This is usually done by heating the evaporating dish over a burner.

A **mortar and pestle** is used to crush up solid chemicals into smaller pieces, or to grind solids into fine powder. This makes dissolving solids into solutions much easier.

Thermometers assure accurate temperature measurements in labwork. Find partial immersion, wall mounted, indoor/outdoor, combinations with hygrometers and hydrometers, digital, and infrared.

Pipettes or droppers (pictured) are used to measure or transfer liquids a few drops at a time. Mohr pipettes are graduated pipettes used for precise measurement.

Watch glasses can be used to cover beakers, evaporate water from solutions, weigh out solid chemicals, or observe samples under a stereo microscope.

Crucibles are used to melt or burn solid chemicals over a burner. They are made from heat-resistant ceramics to prevent breakage.

Funnels are used to pour liquids into narrow-mouth containers such as flasks and bottles. **Buchner funnels** (pictured) are special two-piece funnels for filtering mixtures through filter paper into a filtering flask.

A **separatory funnel** separates two immiscible liquids of different densities. The heaver liquid settles at the bottom to be drawn off. Separatory funnels are also used to slowly add a reagent in a distillation or reaction process.

Popular Lab Equipment

Lab burners come in many different styles and usually run on alcohol, propane, or butane. They are used to heat or boil solutions, burn or melt solid chemicals, or form glass tubing.

A **centrifuge** is a motorized device used to spin liquids at high speeds. In labs, a centrifuge uses gravity and centrifugal force to separate substances with different mass. An example is separating particles from a liquid.

Hot plates are typically used to heat glassware and the liquid inside. They can be combined with a magnetic stirrer to both mix and heat the liquid contents all at once. They have more precise temperature control than an alcohol lamp or burner.

A **scissor jack** is used to elevate equipment for various lab setups. The height is adjustable for flexibility. Use to elevate lab heaters and stirrers, beakers, flasks, and other glassware. Scissor jacks are often useful in distillations.

Rubber tubing is used to connect evaporating chambers, flasks, condensers, and other glassware, usually in distillation processes.

Wash bottles are plastic bottles with a nozzle at the top for rinsing glassware, cleaning/disinfecting, or applying solutions. They can be filled with a variety of reagents, such as water or alcohol.

Support stands come in different sizes and styles. Support stands are versatile and can have various clamps or rings mounted to them to hold several pieces of equipment at once.

Ring supports are also called iron rings or ring clamps. Used with a ring stand; ring supports raise and secure an object above a work surface. For example, a round bottom flask or separatory funnel.

Use **universal clamps** to hold common labware like plates, beakers, flasks, test tubes, and more. With a ring stand and more, a universal clamp can set up complex distillation apparatus or other laboratory equipment.

A **burette clamp** is a metal tool that attaches to a ring stand at various heights. It's used to hold a burette, test tube, flask, etc. Double burette clamps hold two burettes at once. Its clamp jaw holds the burette securely in place.

Wire gauze is a fine mesh wire sheet that is used to evenly distribute heat from an open flame. It rests on a support ring attached to a ring stand and holds glassware above a burner.

Use a **lab scoop/spatula** for easy dispensing of chemicals. Lab scoops or spatulas are often double-sided. One side may be used to scoop and the other to break up chunks of powdered chemicals. Stainless steel resists contamination.

Glass tubing is usually inserted into stoppers to attach rubber tubing, but it can also be used to splice two pieces of rubber tubing. It can be cut with a file or tubing cutter and shaped with a flame.

Stoppers are used to seal narrow-mouth containers such as flasks and test tubes, and to hold pieces of glass tubing for distillation experiments, or to mount thermometers inside a flask.

Desiccators are sealable containers for low-humidity and dust-free storage. The most common type is round, made of heavy glass, and has a removable platform inside. Desiccant sits below the platform and items to be stored sit atop it.

A **calorimeter** measures the heat transfer during a chemical reaction or physical change. A reactant is placed inside the inner chamber of the calorimeter. Measuring the temperature difference before and after allows heat transfer evaluation.