

## Glassware and Equipment

The equipment in the laboratory at your work station is housed in three cabinets. Two of the cabinets can be locked and contain a variety of glassware. The third cabinet contains a variety of hardware that is relatively non-destructible. The two lockable cabinets contain mostly glassware and are identified as a personal locker and as a community locker. You will be assigned a key to your personal locker and with the exception of the stockroom personnel, no one else will have access to its contents. You will be able to store your personal belongings in this locker. To assist you and your colleagues working at your lab station (as well as the teaching staff), we will ask you to attach your name on a label that will be provided to you during check-in on your personal locker.

The community locker that you will be using will have limited access by a maximum of three other students. This locker contains most of the glassware with the ground glass joints. Since this glassware is expensive, and will be used by others, we have devised the following system to insure that if any glassware is broken or lost, the student responsible for the loss is held accountable. During the first five minutes of the laboratory, this locker will be opened and you should inspect the contents. At this time you will also be asked to sign the log-in for the community locker. If you find the contents incomplete or equipment broken, you are to bring this to the attention of the instructor who will proceed to the storeroom to replace the damaged or missing item and will instruct the storeroom to charge the replacement costs to the individual whose name appears as the previous last entry in the log-in. In order to insure that this process works properly, it will be necessary that you familiarize yourself with the contents of this locker. The following list itemizes each piece but you should become familiar with the shape and function of each. During check-in, the price of each item is indicated on the check-in sheet you will use to verify the contents of each locker.

### Community Cabinet Equipment

6	24/40 single neck round bottom flasks, assorted sizes
2	24/40 condensers
1	24/40 125 mL addition funnel with pressure equalizer with stopper
1	pear shaped separatory funnel (250 mL) and stopper
1	24/40 distilling head with a thermometer adapter
1	24/40 Claisen distilling head
1.	24/40 distillation connector with vacuum adapter
1	24/40 250 mL three neck round bottom flask
1	24/40 stopper
1	24/40 drying tube
1	24/40 thermometer adapter
3	24/40 plastic clips

The following equipment is included in your personal locker:

### Personal Locker

Number	Item	Use
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10	beakers, assorted sizes	containers
11	Erlenmeyer flasks, assorted sizes	containers for crystallization
3	vacuum filter flasks, assorted sizes	containers for vacuum filtrations
3	graduated cylinders, containers for	measuring volume of liquids
6	sample vials	handling in samples
3	narrow mouth bottles	handling in samples
2	wide mouth bottles	handling in samples
2	narrow stem funnels	gravity filtration of liquids
1	powder funnel	adding solids to flasks, gravity filtering hot solutions
3	porcelain funnels	vacuum filtration of cold solutions containing solids
1	drying tube	preventing moisture backup
1	stainless steel spatula	handling small amounts of solids
1	stainless steel scoopula with handle	handling larger amounts of solids
4	watch glasses	for spot tests, evaporating small amounts of liquids, covers
18	test tubes	for tests
1	test tube with side arm	used as a cold finger in sublimation
1	Teflon thermometer adapter	for use in attachment of thermometer to distilling head
1	-10-260 °C thermometer	measurement of temperature
1	polyethylene wash bottle	acetone wash bottle
1	filter vac	for attaching porcelain funnels to filter flasks
1	stirring rods	for stirring solutions and scratching glass vessels during crystallization

The following hardware will be found in your second community cabinet

### Hardware in Community Cabinet

6	two and three prong clamps, assorted sizes
6	clamp holders
2	pinch clamps
2	screw clamps
12'	flexible rubber tubing, assorted lengths
6'	vacuum tubing, assorted lengths
3	cork rings, assorted sizes
1	test tube rack, 6 tube capacity
1	test tube rack, 12 tube capacity
1	test tube clamp
1	wire gauze
1	crucible tongs
3	iron rings, assorted sizes

Not included in your lockers but considered consumables and available in kit form (or individually) at cost are the following:

**Consumable Items** (subject to change)

Number	Item	Use
12	disposable pipettes	for dispensing small volumes of liquids
6	pipette bulbs	for dispensing small volumes of liquids
1	towel	for cleaning and drying
1	sponge	for cleaning
1	test tube brush	for cleaning
1 pkg.	glass slides	for Fischer Johns melting point apparatus
3 pair	disposable gloves	for handling toxic and corrosive substances
3	KBr vials for Wiggle Bug	for preparing samples in infrared spectroscopy.
6	vials, assorted sizes	for samples

**Other Equipment in the Laboratory**

You will also find a Variac or variable voltage supply unit at each of your work stations. These Variacs are usually attached to the racks by your work station and are to be used whenever you wish to control the power delivered to an apparatus, usually a heating mantle. Your instructor will demonstrate their use. Please note that heating mantles are never to be attached directly to the 115 V receptacles.

You will also find other equipment in the laboratory that you will use from time to time. This includes two rotatory evaporators that can be used to evaporate and recover solvents quickly. These units operate on the principles of vacuum distillation and will be discussed later in the semester. You will also find a vacuum pump and appropriate condensing flasks on a movable cart that you may use later.

A variety of top loading electronic balances are available for use in the laboratory. Although these are easy to use, if you are unfamiliar with them, take a minute to ask for instructions. These few minutes could save you hours in having to repeat an experiment later. In addition to the top loading balances which will weigh to 0.1, 0.01 and 0.001g respectively, an analytical balance is also available that will weigh to 0.0001 g. This balance should be used only when you require this accuracy. Generally for most experiments, use of the top loading balances will suffice.

The laboratory does not contain a source of distilled water nor is distilled water required unless you are specifically requested to use it. Distilled water is available in the Physical Chemistry Laboratory and will be made available if necessary.

A variety of different sources of heat are available in the laboratory including steam. Only the steam baths in the hoods are to be used. Hot plates and heating mantles are available in various cabinets in the laboratory and will be made available when necessary.

In addition to the equipment housed in the organic chemistry laboratory, additional equipment that will be used during the semester can be found in the organic instrument room that is directly attached to the laboratory. This room houses the Perkin Elmer Fourier Transform Infrared Spectrometer and a variety of accessories that are used to prepare samples for infrared analysis and a variety of

computers. The spectrometer and the computers are for use by students enrolled in the organic laboratory and are available for use during laboratory time. For use at other times, you may need to make arrangements with your instructor.