

# CHEMISTRY STUDENT LABORATORY SAFETY CONTRACT CENTRAL CAMPUS



Potential hazards exist in all chemical laboratories and some can cause serious accidents. Fortunately, most accidents can be prevented if each person in the lab observes a set of common sense precautions and uses proper experimental procedures. The following rules are to be observed at all times.

Please read the following carefully and be sure that you understand the contents completely prior to filling in the information and signing.

## Medical Conditions

If a student has any medical condition which might be affected by chemistry laboratory work (allergies for example) or which might affect safe performance of laboratory work (seizure disorders, for example), it is essential that the student inform the course instructor well in advance of the initiation of any laboratory work.

If a student thinks or knows she is pregnant, it is strongly recommended that she contact the course instructor in advance of the initiation of laboratory work to make arrangements to defer the Chemistry Laboratory to a later semester to assure the avoidance of exposure to teratogens (chemicals which may cause birth defects).

## Never Work Alone

No laboratory work may be carried out without the supervision or authorization of an instructor. Absolutely no unauthorized experiments are to be performed. Never work in the laboratory alone. All experiments are to be **performed as written** in the lab manual or handout or as modified by the instructor.

## Protective Clothing and Dress

Wear sensible clothing in the laboratory. Sandals are prohibited, as are shorts, short skirts, and bare midriffs. All students **must** wear safety goggles, gloves, and protective clothing (e.g. lab coat or apron) at ALL TIMES when in the Chemistry Labs. Long hair must be pulled back and only closed-toe shoes are allowed.

### Personal Safety Equipment:

- A.** Students supply and wear their own **goggles**. Goggles must meet **ANSI Z87.1-1989 standards** for chemical splash and impact resistance. *Safety glasses are prohibited.*
- B.** Students must wear **gloves** at all times in the laboratory (unless otherwise instructed by your professor). At the end of the lab, the gloves are to be disposed of and hands washed before exiting the lab.
- C.** Students must wear a **lab coat or apron**. You will be provided a reusable apron. You may purchase your own lab coat or you may opt to wear both. One or the other is required.
- D.** Students must wear **closed-toe shoes** at all times. Leather shoes are suggested for best protection.

## Handling Chemicals and Equipment

Never put anything in your mouth in the laboratory. **No eating, drinking, gum chewing, candy, or smoking** permitted in the laboratory.

Flammable solvents such as ether, acetone, toluene, alcohols, etc., must be kept well away from open flames.

**All chemicals** should be handled with care using goggles and gloves and be considered toxic, corrosive, flammable and/or pungent unless your instructor informs you otherwise. Read all labels carefully.

Use only what is needed. Never pour unused reagent back into the reagent bottles.

Return chemicals immediately to their proper places. **Replace lids on all containers immediately after use.** Leaving containers open increases everyone's exposure to the substances within them. Spills are also more likely when a container is open. In addition, some reagents can be ruined by excessive exposure to air.

If you spill a chemical, alert your laboratory instructor. He will instruct you on proper clean-up procedures.

Properly label all chemical containers you are saving for the second week of the experiment, with your name, your instructor's name, class time, and most importantly, the **chemical name**. No chemical container must be found in the lab without the chemical name on it.

Keep all chemical containers covered to prevent contamination of the laboratory with fumes.

Never heat a closed container.

The chemical fume hoods are to be used for conducting those experiments that produce either toxic or irritating gaseous substances that may be easily inhaled. Be sure to restrict specified experiments to this area as designated by your instructor and **never remove chemicals from the fume hoods** unless instructed to do so.

Make certain the sash is lowered to a safe level, as shown on the side of the hood. The vertical glass panels on the fume hoods should never be opened. These are for Laboratory Staff to load the fume hoods and do not provide any protection from splashes or fumes. Only use the fume hoods by raising the sash vertically.

Clean up any spills you create. If you are uncertain as to how a spill should be cleaned, ask your lab instructor. If it is a particularly hazardous material, inform your instructor.

Use only equipment that is in good condition. Report broken or malfunctioning equipment (Meltemps, hot plates, etc) to your instructor. Do not use broken glassware; replace it. Dispose of broken glassware in the designated red containers in the laboratory.

Do not force glass tubing (or thermometers) into rubber stoppers, do not force tubing onto flasks or other equipment, etc.; lubricate the glass with glycerine. Protect your hands with towels when inserting glass into a stopper. Handle all **glassware and equipment** properly and according to safety regulations to avoid cuts and burns. Never struggle with the equipment, if you are unsure or need assistance, ask your instructor for details on the proper procedure.

## **Waste**

You may dispose of dilute acids with plenty of water in the sinks in the laboratory and sinks in the fume hoods. All other **chemicals should be disposed of in labeled waste containers** located in the fume hoods or on the front counter. Never put any chemical waste in the trash, down the drain, or in any container not labeled as waste. Check with your instructor for proper disposal information.

## **Accidents**

Check and memorize the location of the fire extinguisher, safety shower, and eye wash station. Be prepared and know how to use this equipment in case of an emergency. Learn and memorize the locations of the building exits and evacuation routes.

Each laboratory has an eyewash station to be used if a chemical has come in contact with your eyes. Just place your face between the two fountains and press the lever to activate the water. Try to keep your eyes open as best you can, as this flushes them much more effectively.

Report any accident or injury to your instructor immediately. Your instructor will contact Campus Safety personnel and/or call 911 in the event of an accident or injury.

In case of fire, alert your instructor and other students immediately and exit the laboratory in an orderly fashion, if instructed to do so. Never attempt to extinguish a fire by yourself.

### **Working Cleanly and Efficiently**

Never begin an experiment without reading the complete procedure first.

Keep aisles and work areas clear and drawers and cabinets closed.

Keep your laboratory bench and all other working areas clean at all times and free of items not related to the experiment.

**Balances must be kept clean.** Do not put any chemicals directly on the balance pans. Clean up all spills immediately. See your instructor for details. Follow all instructions on how to properly use the balances. If you have any questions, ask your instructor. Close all containers tightly, and clean up the surrounding area. Always use the provided weighing bottles unless otherwise instructed.

At the close of the laboratory, clean your glassware and put everything away. Clean your desk top and other working areas.

All labels must be removed from all glassware including tubes, beakers, flasks, etc. when you are done with the lab.

Do not dump broken glassware, paper towels, and other lab items in the troughs or sinks.

All paper towels, filter papers, labels, etc. must be cleaned from the countertops, sinks, troughs, and fume hoods and placed in the proper receptacles.

Wash and dry your weighing bottles when done and return to basket by balances.

Tighten the lids on all jars and bottles of chemicals. Do not leave any container open to the air.

### **Gas Jet Procedure**

When lighting the burner, open up flow valve on burner, turn on gas, use striker to light the burner.

When shutting off, turn the burner off first then turn the gas jet to the off position by turning clockwise all the way. Turn off the gas (burner and jet) immediately after finishing with it.

### **Other**

Report any unsafe laboratory condition or situation to your instructor immediately.

Put things back where you found them. This includes reagents, aprons, special equipment, and anything non-disposable.

Dispose of broken glass, used pipettes, and capillaries in the red broken glass containers beside the front counter.

Students must refill the deionized water squeeze bottles from the carboys on the student reagent shelf at the end of each lab.

Do not disassemble heat lamps or other equipment that is set up for you when you enter the lab.

Do not make any changes to the computers when they are set up in your lab.

Never look directly into lasers or UV lamps.

As a matter of routine, **always wash your hands** thoroughly before leaving the lab. Arms and face may require washing if chemical contact is made with these surfaces.

If you are unsure of any of the above procedures, discuss this matter with your instructor.

I have seen the chemistry laboratory safety video, "Starting with Safety". Video is also available in Learning Resources on the second floor of Building 17.

**Any student not complying with the above regulations will be asked to leave the lab.**

Keep a copy of this Laboratory Safety Contract in your notebook at all times.

You may also find a copy of this Contract on our website, <http://browardcentralscience.org> under the **Laboratory Info** section.

I have read the above and agree to uphold these procedures. I understand that failure to comply with these procedures will result in my being asked to leave the lab for that experiment.

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Student signature

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Date of signature

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Student name, printed

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Student ID Number (not your SSN)

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Instructor's Name

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Course and Section (e.g.: CHM 1045L, Mon, 1-4pm)