

# LABORATORY SAFETY RULES

## ***ABSOLUTELY NO UNAUTHORIZED EXPERIMENTS ALLOWED!***

### **A. PERSONAL SAFETY**

1. Safety glasses must be worn at all times. If you should get a chemical in your eye, notify your instructor or a lab tech immediately. Wash your eyes with copious amounts of running water from the eyewash stations located in the lab for 15-20 minutes.
2. The wearing of contact lenses is not recommended in the laboratory.
3. If you come in contact with ANY chemical, wash off your skin with copious amounts of running water for 15-20 minutes.
4. In case of fire, accident, or emergency, notify your instructor or a lab tech immediately. If there is an emergency, **DO NOT HESITATE TO YELL FOR HELP**. Identify the location of the fire extinguisher, eye-wash fountains, safety shower, fire blanket and sodium bicarbonate solution for acid spills. The use of fire extinguishers should only be used in case of real emergencies since the chemicals that they contain do considerable damage to equipment.
5. You must be treated for cuts, burns, inhalation of fumes, swallowing or getting chemicals in your eyes. Your instructor or a lab tech will arrange for transportation, if necessary.
6. Do not taste anything in the laboratory or put anything in your mouth.
7. Do not eat, drink, or chew gum in the laboratory. Do not bring any food or drinks into the labs.
8. Absolutely no smoking is allowed in or around the labs or stockroom. There are a variety of flammable chemicals in the lab areas.
9. After completing your lab section, it is strongly recommended that you **WASH YOUR HANDS** before drinking, eating, smoking or using the restroom.
10. Exercise great care when noting the odor of fumes. Speak to your instructor or a lab tech to learn the proper technique for noting fumes. Use hoods where necessary.
11. Never pipette by mouth. Use a rubber bulb.
12. Confine hair when in the lab.
13. Dress code:
  - Absolutely no open-toed shoes allowed in the laboratory. Shoes must cover feet.
  - Do not wear clothing with loose sleeves in the laboratory.
  - Clothing must cover all of torso and legs in the laboratory.
14. In case of evacuation: as directed by your instructor or a lab tech, turn off any gas, water and electrical equipment (hotplates, etc.) grab your valuables and immediately proceed to the West end of the building to parking lot F, above Dental Hygiene. Stay together as a class and your instructor will join you and take attendance.

15. Do not ever sit on the benchtops. Clear liquid on desktops could be an acid or other corrosive solution, even if it looks like water. Clean area before working there.
16. Keep coats, backpacks, foods and all non-essential objects off of the benchtops. Store items under desk (Rm. 606, 614) or put on side or front benches (Rm. 607).
17. Students *that are not employees* of the college are not allowed in the stockroom. NO EXCEPTIONS.
18. If the above rules are not followed, you will be instructed to leave the lab and you may suffer a loss of points.

## **B. THE USE OF CHEMICALS**

1. Avoid wasting gas, water (especially D.I.), chemicals, and other materials.
2. Read all labels carefully before using the chemicals. Reagent bottles should not leave Reagent Central. Bring a transfer container to the cart (or hood) and obtain only the needed amount of chemicals required for the experiment. When dispensing chemicals be very careful not to spill any, especially on the labels.
3. To avoid contamination of the chemicals, do not return unused portions to the reagent bottles. If you have taken more than you need, offer it to another student or dispose of it as instructed. Use reagents sparingly; they are expensive and time consuming to prepare and dispose of.
4. Dispose of solids in the specified waste containers.
5. If you have any questions regarding chemical disposal, ask a lab tech or the instructor before you act.
6. Pour all organic solvents in the glass bottle labeled “organic waste” and write in pencil what you add unless it is already written there. (Rm 607 only.)
7. **“Do as you oughter – add acid to water”**. NEVER pour water into acid. To dilute a concentrated acid, slowly add the acid to water while stirring. This applies especially to concentrated sulfuric acid.
8. Promptly clean up any spilled chemicals. If an acid is spilled, neutralize it by adding sodium bicarbonate solution until the bubbling stops. Clean up the bicarbonate and neutralized acid with paper towels and dispose of it in the garbage. **Please go to your instructor with any safety questions or concerns.**
9. Material Safety Data Sheets (MSDS) are available in the stockroom, and the Cabrillo College Lab Safety Manual is in a red binder in each lab. Contact a lab tech if you have any questions.
10. Use caution while heating liquids. Add boiling chips BEFORE any liquid has begun heating.

## **C. USE OF GLASSWARE and SUPPLIES**

1. Use care when heating glassware. Even borosilicate (aka Pyrex glass) can crack when it is heated. Inspect your glassware thoroughly before adding

- chemicals. If any star cracks or other cracks are observed, replace the glassware at the stockroom window.
2. Materials that are being heated in a test tube, beaker, flask, etc. can react suddenly and violently. Therefore, never point the mouth of a container that is undergoing a chemical reaction or being heated at yourself or anyone else (see also section B.10).
  3. Attempting to push a piece of glass tubing through a rubber stopper can be dangerous. The glass tubing should be lubricated first with glycerine (available from the stockroom). The tubing should be inserted in such a way that the glass will not puncture either hand. **ASK YOUR INSTRUCTOR FOR DIRECTIONS.**
  4. Report all broken glassware to the stockroom and fill out a checkout slip indicating that the item was broken. A lab tech will dispose of the glass in a "broken glassware" box (located in each lab.)
  5. Do not leave a Bunsen burner, other heating apparatus, vacuum apparatus, reflux, or distillation apparatus unattended.
  6. Glassware must be cleaned at the end of each lab period unless instructed by the instructor. To wash glassware:
    - a) Fill the glassware with warm water.
    - b) Add a very small amount of simple green soap.
    - c) Scrub with the brushes available.
    - d) Rinse well with tap water.
    - e) Rinse with D.I. water
  7. Do not remove any equipment, chemicals, or glassware from the lab.
  8. You are responsible for the equipment in your assigned locker. Memorize and **write down your locker combination in your lab notebook.** Keep your drawer and work area neat and orderly. Lock your locker when not in use.
  9. If equipment is checked out, there must be a completely filled out "check-out slip". All checked out glassware and equipment **must be returned clean and ready** for other students to use.

#### D. USE OF BALANCES

1. Never weigh a chemical by putting it directly on the weigh pan.
2. Always use a weigh paper or weigh boat.
3. Never weigh a hot object. Wait until the object no longer feels hot when near (not touching) your wrist.
4. Always use the same balance throughout your experiment.
5. Leave the balance area extremely clean. Do not leave chemicals on or near the balances. Brush off every last trace of chemical and dispose of properly.

**WHEN YOU LEAVE THE LAB:**

- 1. MAKE CERTAIN YOUR GAS AND WATER ARE TURNED OFF.**
- 2. WIPE DOWN DESK WITH A DAMP PAPER TOWEL AND THEN DRY IT.**
- 3. THROW ALL TRASH AWAY IN APPROPRIATE CONTAINER. (NOT THE SINKS!)**

Enjoy and be safe!