

## Laboratory Safety & Etiquette

Safety is of utmost importance. Work in the laboratory should be a safe experience. It will be safe, however, only if certain safety precautions are followed without exception. Safety is up to you. Everyone working in the chemistry laboratories must follow the following rules. Your instructor will discuss specific safety precautions relevant to each experiment during the pre-lab lecture. Do not hesitate to consult with your instructor if you have questions regarding any safety precautions. Failure to observe laboratory safety rules and procedures may result in injury to you or to fellow students. Students who do not follow these safety rules (including proper attire) will be asked to leave the laboratory. Repeat offenders may be dropped from the course at the discretion of the instructor.

1. **Appropriate attire:** Appropriate protective clothing must be worn at all times while in the laboratory. It is a good idea not to wear your best clothing to lab since many chemicals can stain, bleach or generate holes in your clothing.
  - a. **Safety goggles** approved by the chemistry department must be worn at all times, even if you are wearing prescription glasses. Contact lenses are not recommended in the lab. Various fumes may accumulate under the lenses and injure your eyes. You are responsible for bringing your own pair of safety goggles to lab each week. Students who borrow safety goggles from the instructor will have points deducted from their lab. Students who fail to wear their safety goggles will be reminded once and have points deducted. The second time a student is seen without safety goggles on during a lab period, the student will be asked to leave the laboratory.
  - b. **Shirts** must cover the entire upper torso, including the midsection and upper chest area and should be long enough to tuck inside your pants. Cotton t-shirts are fine. Tank tops, scooped neck tops, leotards, sleeveless blouses and tops made of sheer material are not allowed.
  - c. **Pants and skirts** must be at least knee length.
  - d. **Shoes** must be flat-soled and cover the entire foot. Socks must be worn with shoes. Sandals, open-toe shoes and high heels are not permitted.
  - e. **Long hair** (shoulder length and longer) and billowy clothing must be tied back while working in the lab.
2. **Food and Drink:** NO food or drink will be allowed in the laboratory. This includes coffee, water, candy and chewing gum.
3. Working in the laboratory without an instructor present is strictly forbidden. Students must work in instructional laboratories only during regularly scheduled lab periods and then only when supervised by a member of the faculty.
4. Do not perform any unauthorized experiments. If you have an idea for improving an experiment or for a new experiment, consult with your instructor.
5. Wash your hands after every experiment and each time your hands come in contact with chemicals.
6. **Scales:** Never weigh reagents or chemicals directly on a balance or scales. First weigh an empty container or weighing paper, then press tare or "re-zero" to set the mass reading to zero. Then add your reagent to the container or weighing paper and re-weigh. Balances are expensive! Clean any spills immediately! Replace caps on bottles and return to cart when complete.
7. **Fume hoods** should be used when performing experiments that generate an objectionable gas.

8. **Working With Chemicals:**

- a. Never smell or taste anything in the laboratory unless specifically directed by your instructor. Many chemicals are poisons. Use your hand to waft the odor to your nose.
- b. Always **read the label** on all chemical bottles and waste bottles. If you see the wrong chemical, you may have a serious explosion. If unsure, consult with your instructor.
- c. Do not take chemical bottles to your lab bench unless directed by your instructor. Pour the approximate amount you need from the bottle into a small container and take this to your bench.
- d. Always use a metal spatula or scoopula to transfer solid chemicals. Do not use your finger to transfer chemicals. This will directly expose you to the potential hazards of the chemical and might contaminate the remaining chemical in the container.
- e. Do not put excess reagent back into the original bottle. There is always a chance of contaminating the original sample. Ask your instructor how to properly dispose of excess chemicals.
- f. Do not put pipets directly in any reagent bottle. This might result in contamination of the remaining liquid in the bottle. Never mouth pipet any liquid in the lab.
- g. Keep the lids and caps on the chemical bottles. Put the lids back on as soon as you are finished dispensing the material. Many chemicals are sensitive to light or to moisture in the air.
- h. When diluting concentrated acids or bases, add the acid or base slowly into water. Never pour water into acid. The heat generated from adding water to a concentrated acid or base solution can cause the solution to splatter or shatter the glass.

9. **Waste:** Dispose chemical waste in designated containers. Only flush chemicals down the sink if instructed by your instructor. Never pour organic waste down the drain. The waste containers are in the hood for each experiment. Read labels on waste containers to be sure to dispose of waste in the proper container. Disposing waste in the wrong container can generate an unwanted (and unexpected) chemical reaction!
10. **Spills:** Clean up any spills immediately and dispose of the spilled material properly. Check with your instructor on the proper way to clean up any material that you spill.
11. **Chipped or broken glassware** should be thrown in the glass waste container. Report broken glassware to your instructor so that it can be replaced.
12. **Hot objects** will burn! Do not pick up hot objects with your fingers. Use tongs or hot pads. Hot glass will crack if run under cold water. Allow heated glass sufficient time to cool.
13. **Accidents and Emergencies:** Report all injuries and accidents, no matter how minor, to your instructor immediately. Know the location of the fire extinguishes, fire blankets, safety showers, and eyewash stations. Familiarize yourself with two different exits from the lab, in the event of an emergency situation. Accidents are usually minor, but it is best to be prepared for serious trouble.
14. **Be aware of your classmates!** Are they obeying the safety rules? A nearby accident may not hurt or harm him/her but may injure you!
15. Above all else, **ask the instructor if you have any safety related questions!**