

UE Department of Chemistry

Basic Lab Safety Rules

The chemistry laboratory is a great place to learn chemistry by doing experiments. However, the laboratory can be a dangerous place if a student does not adhere to safety guidelines and use basic common sense while working in the lab. Over the years we have made our experiments less dangerous and more 'green' by eliminating many toxic, explosive, and hazardous chemicals. But in any chemistry laboratory there are certain unavoidable chemical and physical hazards and risks associated with working in the lab. To work in any chemistry laboratory at UE, you will be expected to learn and follow all safety guidelines presented to you to ensure a safe laboratory environment for you and other students working in the lab. In addition to the guidelines presented below, you will be required to attend a safety orientation, watch a safety video, and complete a safety quiz. You may not begin work in any lab until all safety requirements have been met. Also, students who fail to follow all the safety rules while working in the lab will be asked to leave and receive grading penalties.

Personal Protection & Attire

1. Safety goggles must be worn at all times while in the laboratory. This rule must be followed whether you are actually working on an experiment or simply writing in your lab notebook. The goggles must be of the chemical splash type. The bookstore carries the approved form of goggles. SAFETY GLASSES ARE NOT ACCEPTABLE.
2. It is recommended that students NOT wear contact lenses in the lab. However, if you do not have a pair of regular glasses to change into before lab, then contacts may be worn IF: a) you recognize the inherent risks—they are difficult to remove if chemicals get in the eye, they have a tendency to prevent natural eye fluids from removing contaminants, and sudden displacement can cause visual problems that create additional hazards, and b) you tell your lab instructor before beginning work in the lab and you write "Contact Lens Wearer" on both your goggles and your signed safety code (in your lab manual).
3. Appropriate gloves will be provided, when needed, as certain chemicals may require the use of gloves. When gloves are used, wash hands after removing gloves and before leaving the lab.

4. Appropriate clothing is required. Clothing that covers the majority of your body is necessary to prevent chemicals from contacting your skin. We do not require a lab coat, so the following list applies to your dress in lab (others may be added by your instructor):

- Do not wear clothing which is loose enough to knock over containers or drag or dip into chemicals or even a flame.
- Wear clothing that breathes (e.g. cotton) to keep you from overheating in lab.
- Wear old clothing that you don't mind getting a stain or hole in them.
- Wear shoes that completely cover all parts of your feet, and don't forget to wear socks that cover your ankles.
- Do not wear jewelry (especially expensive jewelry) while working in the lab because chemicals may cause damage.
- Remember: No tank tops, tube tops, cutoff tops, or tops that expose the midriff. No shorts, or short to mid-length skirts are allowed. No sandals, flip-flops, open-toed shoes, or shoes with open sides or heels, and no slippers.

Personal Hygiene & Conduct

5. Eating, drinking, and smoking are strictly forbidden in the laboratory.
6. Never taste a chemical directly and check odors only by wafting.
7. Never mouth pipette—use a pipette bulb.
8. Long hair must be tied back to prevent hair from accidentally falling into a flame or chemical. Also think about the fact that some hair sprays and other hair products are flammable. Long hair can also block your vision, which can lead to accidents.
9. Keep your work space (at the table and in the hood) neat, clean, and uncluttered.
10. All belongings not being used during an experiment (e.g. coats, backpacks, etc) should be placed in the shelves provided in each lab.
11. Wash your hands before leaving the lab.
12. No horseplay or running. Keep aisles clear and unobstructed.
13. No music allowed in labs; radios and other entertainment devices are not permitted. All cell phones should be turned off while in lab.

14. No unauthorized experiments are to be performed. If you are curious about trying a procedure not covered in the experiment, consult your lab instructor.
15. Be prepared before you come to lab and read instructions for an experiment ahead of time.
16. Learn where the safety equipment is located.
17. Notify instructor immediately in case of an accident or injury.
18. Be aware of your evacuation route in case of an emergency (e.g. fire) that requires you to leave the lab and building.

Proper Handling of Chemicals & Equipment

19. Handle all chemical carefully and treat them with respect and understand the chemicals you are using. Safety Data Sheets (SDS) are available in lab for all chemicals in use and will outline the hazards and precautions necessary for you to know.
20. Know what chemicals you are using during an experiment. Carefully read (and reread) a label before taking anything from a bottle. Chemicals in the lab are clearly labeled, but if you are uncertain about a chemical, ask before using it.
21. Do not return excess reagents to stock bottles. If you take too much, then dispose of the excess appropriately.
22. Reagent bottles should not be carried to your work area. A proper container may be taken to the reagent bottle to obtain the amount of chemical you need.
23. Always pour acids into water. If you pour water into an acid, the heat of reaction will cause the water to explode into steam, sometimes violently, and the acid will splatter.
24. Never point a test tube (or other vessel) you are heating at yourself or another person.
25. Never leave a propane torch unattended. Turn it off when you are finished (and no one is waiting to use it).
26. Keep flammable chemicals (i.e. solvents) away from open flames.
27. Dispose of waste properly: waste containers will be provided and their use explained by your lab instructor. Waste may not be poured into the sink, unless you are told otherwise.

28. Any broken glass must be picked up promptly and disposed of in the broken glass receptacle.

29. Report all spills to your lab instructor, then clean up spills as directed. Larger spills may require the use of kitty litter, which acts to contain the spill and as an absorbent. It may be necessary to neutralize acids (with bicarbonate) after containment and before it is swept up for disposal.

30. If a solid chemical should come into contact with your skin, brush off excess solid at the sink with a towel, and then flush with plenty of water.

31. If a liquid chemical should come into contact with your skin, flush with plenty of water at the sink. Do not attempt to neutralize acids or bases on your skin.