

# LAB SAFETY RULES AND GUIDELINES

---



# GENERAL LAB SAFETY RULES

---

- Be sure to read all fire alarm and safety signs and follow the instructions in the event of an accident or emergency.
- Ensure you are fully aware of your facility's/building's evacuation procedures.
- Make sure you know where your lab's safety equipment—including first aid kit(s), fire extinguishers, eye wash stations, and safety showers—is located and how to properly use it.
- Know emergency phone numbers to use to call for help in case of an emergency.

- 
- Lab areas containing carcinogens, radioisotopes, biohazards, and lasers should be properly marked with the appropriate warning signs.
  - Open flames should never be used in the laboratory unless you have permission from a qualified supervisor.
  - Make sure you are aware of where your lab's exits and fire alarms are located.
  - An area of 36" diameter must be kept clear at all times around all fire sprinkler heads.

- 
- If there is a fire drill, be sure to turn off all electrical equipment and close all containers.
  - Always work in properly-ventilated areas.
  - Do not chew gum, drink, or eat while working in the lab.
  - Laboratory glassware should never be utilized as food or beverage containers.
  - Each time you use glassware, be sure to check it for chips and cracks. Notify your lab supervisor of any damaged glassware so it can be properly disposed of.

- 
- Never use lab equipment that you are not approved or trained by your supervisor to operate.
  - If an instrument or piece of equipment fails during use, or isn't operating properly, report the issue to a technician right away. Never try to repair an equipment problem on your own.
  - If you are the last person to leave the lab, make sure to lock all the doors and turn off all ignition sources.
  - Do not work alone in the lab.

- 
- Never leave an ongoing experiment unattended.
  - Never lift any glassware, solutions, or other types of apparatus above eye level.
  - Never smell or taste chemicals.
  - Do not pipette by mouth.
  - Make sure you always follow the proper procedures for disposing lab waste.
  - Report all injuries, accidents, and broken equipment or glass right away, even if the incident seems small or unimportant.



- 
- If you have been injured, yell out immediately and as loud as you can to ensure you get help.
  - In the event of a chemical splashing into your eye(s) or on your skin, immediately flush the affected area(s) with running water for at least 20 minutes.
  - If you notice any unsafe conditions in the lab, let your supervisor know as soon as possible.

# HOUSEKEEPING SAFETY RULES

---

- Always keep your work area(s) tidy and clean.
- Make sure that all eye wash stations, emergency showers, fire extinguishers, and exits are always unobstructed and accessible.
- Only materials you require for your work should be kept in your work area. Everything else should be stored safely out of the way.



- 
- Only lightweight items should be stored on top of cabinets; heavier items should always be kept at the bottom.
  - Solids should always be kept out of the laboratory sink.
  - Any equipment that requires air flow or ventilation to prevent overheating should always be kept clear.

# DRESS CODE SAFETY RULES

---

- Always tie back hair that is chin-length or longer.
- Make sure that loose clothing or dangling jewelry is secured, or avoid wearing it in the first place.
- Never wear sandals or other open-toed shoes in the lab. Footwear should always cover the foot completely.
- Never wear shorts or skirts in the lab.
- When working with Bunsen burners, lighted splints, matches, etc., acrylic nails are not allowed.

# PERSONAL PROTECTION SAFETY RULES

---

- When working with equipment, hazardous materials, glassware, heat, and/or chemicals, always wear face shields or safety glasses.
- When handling any toxic or hazardous agent, always wear the appropriate gloves.
- When performing laboratory experiments, you should always wear a smock or lab coat.

- 
- Before leaving the lab or eating, always wash your hands.
  - After performing an experiment, you should always wash your hands with soap and water.
  - When using lab equipment and chemicals, be sure to keep your hands away from your body, mouth, eyes, and face.

# CHEMICAL SAFETY RULES

---

- Every chemical should be treated as though it were dangerous.
- Do not allow any solvent to come into contact with your skin.
- All chemicals should always be clearly labeled with the name of the substance, its concentration, the date it was received, and the name of the person responsible for it.
- Before removing any of the contents from a chemical bottle, read the label twice.

- 
- Never take more chemicals from a bottle than you need for your work.
  - Do not put unused chemicals back into their original container.
  - Chemicals or other materials should never be taken out of the laboratory.
  - Chemicals should never be mixed in sink drains.
  - Flammable and volatile chemicals should only be used in a fume hood.
  - If a chemical spill occurs, clean it up right away.
  - Ensure that all chemical waste is disposed of properly.



# CHEMISTRY LAB SAFETY RULES

---

- Before you start an experiment, make sure you are fully aware of the hazards of the materials you'll be using.
- When refluxing, distilling, or transferring volatile liquids, always exercise extreme caution.
- Always pour chemicals from large containers to smaller ones.
- Never pour chemicals that have been used back into the stock container.
- Never tap flasks that are under vacuum.
- Chemicals should never be mixed, measured, or heated in front of your face.
- Water should not be poured into concentrated acid. Instead, pour acid slowly into water while stirring constantly. In many cases, mixing acid with water is exothermic.



# ELECTRICAL SAFETY RULES

---

- Before using any high voltage equipment (voltages above 50Vrms ac and 50V dc), make sure you get permission from your lab supervisor.
- High voltage equipment should never be changed or modified in any way.
- Always turn off a high voltage power supply when you are attaching it.
- Use only one hand if you need to adjust any high voltage equipment. It's safest to place your other hand either behind your back or in a pocket.
- Make sure all electrical panels are unobstructed and easily accessible.
- Whenever you can, avoid using extension cords.

# LASER SAFETY RULES

---

- Even if you are certain that a laser beam is "eye" safe or low power, you should never look into it.
- Always wear the appropriate goggles in areas of the lab where lasers are present. The most common laser injuries are those caused by scattered laser light reflecting either off the shiny surface of optical tables, the sides of mirrors, or off of mountings. Goggles will help you avoid damage from such scattered light.
- You should never keep your head at the same level as the laser beam.
- Always keep the laser beam at or below chest level.
- Laser beams should never be allowed to spread into the lab. Beam stops should always be used to intercept laser beams.
- Do not walk through laser beams.