

Lab Safety Procedures

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Plan Your Work

Before conducting any experiment, you should assess the hazards related to the work, including; what are the worst possible things that could go wrong, how to deal with them, and what are the prudent practices, protective facilities and equipment necessary to minimize the risk of exposure to the hazards.

Always know the hazards of the materials used (e.g., corrosivity, flammability, reactivity, and toxicity). Use the Project Hazard Review Checklist (in Adobe PDF format) to help you with this assessment.

Read the Material Safety Data Sheets (MSDS) for information on all chemicals you plan to use. Make sure all Personal Protective Equipment (PPE) is on hand. Use the MSDS or Personal Protective Equipment Selection Guide (in Adobe PDF format) to select the needed equipment.

Post a sign on the door to notify others of the lab hazards and list emergency contact numbers.

Inspect equipment and apparatus for weaknesses, cracks or damage before beginning work.

Inspect electrical equipment and cords for frayed wiring or damage before use. Discard or repair damaged equipment before use.

Follow All Safety Procedures

- ▶ Always wear chemical splash goggles for eye protection when working with chemicals.
- ▶ When pouring large quantities of hazardous chemicals, in addition to goggles, wear a face shield large enough to protect your ears and neck as well as your face.
- ▶ Always wear gloves when handling chemicals. Select the glove material based on compatibility with the chemicals you may contact.

Always wear appropriate clothing: chemically resistant lab coats or aprons are recommended.

Do not wear shorts or miniskirts (anything that would leave your legs bare and unprotected). Do not wear high-heeled shoes, open-toed/heeled shoes, sandals or shoes made of woven materials. Confine long hair and loose clothing.

Do not work with hazardous chemicals or processes when alone in the laboratory. An instructor must supervise undergraduate students at all times.

Always use chemicals with adequate ventilation or in a chemical fume hood. Do not allow the release of toxic substances in cold rooms or warm rooms, since these areas have contained, re-circulated air.

- ▶ Use chemicals only as directed and for their intended purpose.
- ▶ Never use mouth suction to fill a pipette or siphon. Use a pipette bulb or other suitable device.
- ▶ Handle needles, syringes and other sharps carefully. Use self-sheathing needles or needless systems whenever possible. Dispose of all sharps in an appropriate sharps container.
- ▶ Do not dispose of chemicals down the drain. Most chemicals must be disposed of as hazardous waste.

- ▶ Compressed gas cylinders must be secured to prevent them from being knocked over. Cylinders must be capped when the regulator is removed or not in use.
- ▶ Inspect the lab weekly for hazardous conditions.
- ▶ Shield or wrap pressurized or evacuated equipment (dewars & vacuum flasks).

Know Emergency Procedures

- ▶ Know where the nearest emergency eyewash and showers are, and how to use them.
- ▶ Know at least two exits from the laboratory area in case of an emergency.
- ▶ In the event of an emergency, pull the nearest "Pull BOX", evacuate the area, and close all doors.

Practice Good Housekeeping and Personal Hygiene

- ▶ Avoid direct contact with any chemical.
- ▶ Never smell, inhale or taste laboratory chemicals.
- ▶ Always wash hands and arms with soap and water after removing gloves and before leaving the work area.
- ▶ Never eat, drink, chew gum or tobacco, smoke or apply cosmetics in the laboratory.
- ▶ Do not pick up broken glass with your hands. Use tongs or other mechanical means.

- ▶ Remove Personal Protective Equipment (PPE) such as gloves and lab coats before leaving the lab.
- ▶ Remove gloves before handling common items like phones, instruments, door knobs, etc.
- ▶ Keep all work areas clean and uncluttered. Wipe down benches with cleaners or disinfectants regularly.
- ▶ Do not block emergency showers, eye washes, exits or hallways.



▶ **Transport Chemicals Safely**

- ▶ Use secondary containers such as acid buckets or plastic totes.
- ▶ Secure containers on carts.
- ▶ Wear appropriate PPE.
- ▶ Use freight elevators or limit access in passenger elevators.
- ▶ Use a hand truck with a safety chain when moving compressed gas cylinders.

Unattended Operations

- ▶ Provide for containment of materials in the event of spills or failures.
- ▶ Label all containers and process equipment.
- ▶ Post emergency numbers on the lab door.
- ▶ Keep lab lights on.

Report Dangerous Activities or Situations

- ▶ Report all accidents, no matter how minor.
- ▶ Never perform unauthorized work, preparations or experiments.
- ▶ Never engage in horseplay, pranks or other acts of mischief in laboratories.
- ▶ Never remove chemicals from the facility without proper authorization.
- ▶ Report suspicious people or activities in lab areas to University Police.

Thank you

The background features abstract, overlapping geometric shapes in various shades of green, ranging from light lime to dark forest green. These shapes are primarily located on the right side of the frame, creating a modern, layered effect against the white background.