

Westfield State College
Organic Chemistry
Laboratory Safety

A chemical laboratory is a potentially dangerous place. With intelligent precautions and a proper understanding of techniques, a chemical laboratory is no more dangerous than any other class area. Most accidents are the result of carelessness or poor judgment, either by the injured person or by a fellow student. Every student who works in the laboratory must learn and observe the safety rules listed here:

Wear safety glasses/goggles at all times in the laboratory. These should not be modified in any way. Put them on when you arrive; take them off only if you are leaving. Keep the safety glasses on even if you are not doing anything hazardous; your neighbor may have an accident. While working in the laboratory, avoid touching or rubbing your face and eyes.

If you do get something in your eye, use the eye wash immediately and ask someone to call the instructor. Rinse your eyes in the eye wash for 15-20 minutes.

Know the location and use of safety equipment available: fire extinguisher, fire blanket, eye wash and safety shower. Note fire exits.

Never eat, drink, or smoke in the laboratory. Do not taste reagents or solutions. Do not directly smell the source of any vapor or gas. Instead, use your cupped hand to waft a small sample of the vapor to your nose. Do not bring food or beverage into the laboratory.

Never work alone, without supervision, in the laboratory. At no time should unauthorized experiments be attempted.

Wear suitable clothing, e.g., no long, baggy sleeves and no sandals. Wear shoes that cover the top of your feet to protect them from spills.

Tie back long hair to prevent contact with flames or chemicals. (Be aware that excessive hairspray can make your hair more flammable.)

Heed all warnings of chemical hazards. Many organic chemicals are toxic if ingested. Be familiar with the location and use of Material Safety Data Sheets. Disposable gloves and aprons are available in the rear of the laboratory. Heavier-duty gloves are also available. Follow the advice of the laboratory instructor re: glove use and PPE in general. (PPE = Personal Protective Equipment)

Discard all waste chemicals into the specifically designated beakers/jars in the fume hood. Always label your samples with your name, date, and the name of the compound enclosed.

Keep your work area clean and tidy. Keep all personal belongings (except for your laboratory notebook) stored in the designated area.

If you spill a reagent, clean it up immediately. This is particularly important in the common areas such as the fume hoods and balances. Since many organic reagents are white solids, it's often impossible to distinguish between a hazardous reagent and an innocuous one by sight alone. Never leave a spill of any kind without cleaning it up or notifying the lab instructor. See your laboratory instructor with any questions regarding spills and clean-up.

Report all accidents, no matter how minor, to the laboratory instructor immediately. This includes chemical spills, broken thermometers, cuts, burns, or inhalation of fumes.

Check round-bottomed glassware for star cracks. Replace any broken or cracked glassware. Never pick up shards of broken glass or ceramics with your bare hands.

When inserting thermometers into their adapters, be sure to use glycerin or grease (provided), hold it near the end being inserted, and use a gentle twisting motion. If it sticks, do not force it.

When heating chemicals in a test tube, point the mouth of the tube away from yourself and anyone around you. Never heat a closed container.

Always add concentrated acid to water (slowly, with stirring) to dilute. Never add water to a concentrated acid.

Most organic solvents are flammable. For this reason, never use a flame as a heat source unless explicitly instructed to do so. Most labs require the use of a hot plate or a sand bath. Some flammable solvent vapors are heavier than air, and can travel along the benchtop. Flames are banned from the lab when solvents (e.g. diethyl ether) will pose such a hazard.

Please make your instructor aware of any special medical conditions that may affect your laboratory performance. This includes any known chemical allergic reactions, color blindness (for labs which rely on distinguishing colors), and mobility difficulties. You may notify the instructor in private. Also, some organic reagents have a low toxicity for adults, but a higher toxicity for a developing fetus. For this reason, please let the instructor know if you are pregnant.

Before leaving the laboratory:

Wash and dry the bench top.

Make sure that the gas and water are turned off.

Return all special equipment to the proper place.

Wash your hands.

The laboratory instructor or any of the Physical Science Department faculty has the authority to remove from the laboratory any student who is not abiding by these safety rules.

Absolutely no one will be admitted to the laboratory if alcohol or drugs that impair functioning in any way have been ingested. This includes prescription pain killers that cause drowsiness. Any student under the influence of drugs or alcohol will be dismissed from lab with an F, with further disciplinary action possible.

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I have read and understand the laboratory safety rules and recognize my responsibility to abide by these rules while enrolled in this chemistry course. The laboratory instructor or any of the Physical Science Department faculty has the authority to remove from the laboratory any student who is not abiding by these safety rules.

Course: PHYS 0201/0203

Signature: _____

Print name: _____

Date: _____