

Machine Shop Safety

Safety and Use

To ensure safe practices in the shop areas the Chemistry department has adopted the following rules. These rules will be consistently enforced and non-compliance will result in the suspension of shop privileges or disciplinary action. It is the belief of the Chemistry department that having an understanding of the inherent hazards of working in a shop area should be an integral and important part of the educational process.

General Shop Rules

- The Chemistry Instrument Shop is for use only by approved users. This is generally limited to graduate students from within the department, but if time and resources permit then undergraduate research group members within the department and graduate research group members from other departments may be approved.
- No one under 18 years of age may be in the Shop areas.
- Only approved user of the shop who have successfully completed the Shop safety training program may use Shop equipment.
- The Shop is for projects related to research or class work. Personal projects are not allowed.
- Shop facilities may not be used unless the Shop Supervisor or his/her delegated representative is present.
- There must be at least two individuals present at all times when the shop facilities are in use.
- Smoking, chewing tobacco, or being under the influence of drugs or alcohol is prohibited.
- Personal hygiene must reach the threshold of social acceptability.
- Eating or drinking around equipment is prohibited.
- Foot protection (safety toe shoes or boots) should be worn at all times by shop staff. Several styles of slip-over protectors are available for other users, and should be used whenever the type of work being done presents a dropping/foot injury hazard.
- Hearing protection is available and should be used whenever noise levels are high. As a general guideline, if you have difficulty hearing or understanding a "normal" tone of voice at a distance of about three feet, noise levels are probably exceeding safe levels and you should be using hearing protection.
- All injuries and incidents, including minor injuries and all hazardous conditions or activities must be reported immediately to the Shop Supervisor.

Appropriate Clothing

- Any clothing, jewelry (e.g. rings, watches, dangling earrings, bracelets, necklaces, etc.), earphone cords (i.e. iPods, etc.) or other items that could become entangled in moving machinery are prohibited.
- Shop users must at minimum wear clothes such that there is no skin visible below the base of the neck with the exception of arms/hands below the elbow (unless when welding or using an angle grinder or similar tool with equivalent safety concerns).
- Long hair (i.e. exceeding shoulder length) must be adequately restrained to prevent becoming entangled in moving machinery. Facial hair which extends beyond the second button from top of a collared shirt must also be similarly restrained.
- Loose veils/hijabs are not allowed in the Student Shop. Any veil/hijab that a student wants to wear in the shop must be approved by Shop Supervisor.
- Always remove gloves before turning on or operating any machine. Gloves are generally discouraged when working in the shop. If material is rough or sharp and gloves must be worn, place or handle material with the machine turned off (all moving parts stopped).

General Safety Rules

- Eye protection must be properly worn at all times by all individuals in the Shop areas. Always wear safety glasses or face shields (required when using hand grinders) designed for the type of work being done. Safety glasses must still be worn when using face shields or welding helmets. The face shields used when grinding have built in hearing protection as well.
- Hearing protection is required when working with machines or tools that produce an excessive (90db or greater) noise level for extended periods of time. Hearing (ear) protection is readily available in the Shop.
- Causing distractions of any kind is forbidden (e.g. yelling, screaming, making sudden loud noises, etc.). Shop users are expected to demonstrate mature judgment and common sense in their work and conduct while working in the shop area.
- Concentrate on the work and do not talk unnecessarily while operating the shop machines.
- Cell Phones and other electronic devices should be turned off and not used in the shop.
- Tools are to be used only for the purpose for which they are designed.
- You may not operate equipment that you have not received permission to use.
- If you are not sure how to operate something check with the Shop supervisor.

- Read and follow all operational signs and posting located on or near the various machines. This should be done before ever turning on the machine.
- Machine guards are to be in place and in use at all times when equipment is operating.
- Do not try to stop a machine's rotating parts with your hands, especially a lathe or drill chuck.
- Do not leave a machine until it has come to a complete stop.
- Make sure the machine is off and unplugged before making any adjustments or repairs (e.g changing blades on the table saw).
- Always stop the machine to make speed or feed changes that require the shifting of a gear lever.
Note: Variable speed machines – mills, drill presses and lathes must be running when adjusting the speed. The machine still must be off though to switch from low to high gear or vice versa.
- Use a chip brush (located by machines) to remove short, discontinuous types of chips – not hands, fingers or rags. Use a pair of pliers to remove chips, especially the long, stringy type.
- Never use rags to clean the work piece or any part of the machine that is running.
- Only one person may operate a machine at a time.
- Keep aisles clear and maintain unobstructed access to all exits, first aid kits, fire extinguishers, electrical panels, and eyewash stations. Take note of their location in the shops areas.
- Keep floors free of loose tools, oil, grease or any other type of liquid. Clean up spills immediately; they are slipping hazards.
- Keep the floor clear of metal chips and scrap pieces. Put them in the trash containers or the scrap metal bins.
- Compressed air is not to be used to clean off machines, work areas, tools or clothing. If air is used to clean a part, point the air hose down and away from yourself or any other person.
- Defective, dull or broken tools may cause injury if used. Turn them in to the Shop supervisor for replacement or sharpening.