

Soldering Iron Safety



The use of electrical, desk-mounted soldering irons in laboratory and workshop environments presents both chemical and physical hazards that can be mitigated with proper safety precautions. Please review this guide prior to using electrical soldering equipment to better protect your health and safety. Note that any soldering performed with hand-held, propane torches is not addressed by this section. Hand-held, propane torch soldering must be managed in full accordance with the College's Hot Work Program.

General Soldering Iron Safety Considerations:

- Never touch the heating element of the soldering iron. They are very hot and will burn.
- Hold wires to be heated with tweezers or clamps.
- Keep the cleaning sponge wet during use.
- Always return the soldering iron to its stand when not in use. Never leave it on your workbench.
- Turn unit off or unplug it when not in use.

Work Safely with Solder, Flux, and Cleaners:

- Always wear eye protection (safety glasses) and garments to cover your arms and legs as solder can "spit".
- Always wash your hands after soldering.
- Read and understand MSDS's for any materials you are working with.

Avoid Toxic Fumes:

- Always work in a well-ventilated area. The smoke formed mostly from the flux can be an irritant, sensitizer, and aggravate asthma.
- If your bench is outfitted with a soot remover, use it at all times.
- Use lead-free solder when possible.

Danger of Lead Exposure:

- If it is essential to use lead-based solder, operators must recognize that lead fumes can be inhaled or ingested during soldering activities. If you are using lead-based solder, ventilation controls must be in place.
- Lead can have serious chronic health effects, such as reproductive issues, digestive problems, nerve disorders, memory/concentration problems, and muscle/joint pain.
- Since lead is a Type 2 PHS, coordination is needed with the office of Environmental Health and Safety. Signage must be posted at any site using lead solder, and any waste must be collected and labeled as hazardous waste.

Fire Safety:

- Work surfaces must be fire resistant or of material that is relatively inflammable.
- Work surfaces must be kept orderly. Any loose combustibles in the work area have to be removed before starting any electrical soldering. While soldering, please keep combustibles at least 3 feet away from the soldering equipment.
- A fire extinguisher must be located in the area where soldering iron work is performed. Please contact the Office of Emergency Management if a fire extinguisher is needed.

First Aid:

- For minor skin burns, cool the affected area under cold water for 15 minutes. There is not a need for creams or ointments – simply cover the burn with a band-aid once cooled.
- If the burn covers an area greater than 3 inches in width, seek medical attention.
- Be sure to report all injuries to the lab supervisor, no matter how minor.