

Safe Soldering Work Guidelines

Soldering presents potential exposures to hazardous materials and by-products via inhalation, skin contact, and hand to mouth routes. The use of lead-containing solder poses the potential for exposure to lead, which can cause neurological toxicity and other adverse health effects. The use of rosin core solder or flux raises the potential for exposure to rosin fume, which can cause irritation and sensitization of the eyes and respiratory tract. The high temperatures of the solder gun and melted solder create the potential for burns or an ignition source for combustible materials. Note that the tip/element of a soldering iron can be 400°C. This safe work practice applies to electronic hand soldering using a soldering iron or soldering gun. This document and safe work practices should be used by faculty, staff, and students performing electronic soldering.

General Safety Precautions

- Avoid touching the tip/element to prevent skin burns.
- Hold the wires to be heated with tweezers, pliers or clamps to avoid burns.
- Wear appropriate personal protective equipment (PPE).
 - Wear safety glasses that protect the sides, goggles or face shields to provide protection from solder splatter.
 - Long sleeve shirts and pants that are made of natural fibers (cotton) and closed-toe shoes should be worn during soldering activities.
 - Heat-resistant gloves may also be prudent.
 - When soldering at elevations, additional PPE may be required to protect exposed body parts since the solder may splatter or drip.
- Avoid inhalation of lead soldering fumes.
 - Use rosin-free or lead-free solders wherever possible.
 - Work in a well-ventilated area or use local exhaust ventilation or bench top filter extract systems (see images on next page).
- Prevent ingestion of lead by surface contamination.
 - Prohibit eating or drinking in soldering areas.
 - Keep soldering areas clean and properly manage lead soldering waste.
 - Wash hands thoroughly with soap and water after completing work.

Fire Prevention

- Conduct work on an appropriate fire-resistant or noncombustible surface that is not easily ignited (see images on next page).
- Develop a fire response plan prior to performing soldering activities.
- Know where the nearest fire extinguisher is and how to use it (Contact Fire Code Compliance to discuss training).
- A fire extinguisher should be present in the area.

Waste

- Collect waste solder in a lidded container. Replace lid when not in use.
- Label appropriately and dispose of as hazardous waste (contact 203-432-6545).
- Used solder sponges, liquids, and contaminated rags should be placed in a sealable bag for disposal as hazardous waste.

Examples of non-combustible, anti-static surfaces



Examples of local exhaust ventilation systems

