

# Standard Operating Procedure

## Title: SOP-009 Soldering Station

**PI:** Art Erdman      **Lab Location:** Mayo G217

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### **Hazard Identification:**

#### **Physical Danger**

### **Exposure Assessment:**

#### **Heat**

- Heating Elements  
The soldering iron is a source of heat when on. The temperature of the heated tip can reach 900 F, and if it comes into contact with skin, this heated tip can cause severe burns. The tip can also cause serious damage to loose clothing, hair, or the surrounding workspace.

#### **Fumes**

- Smoke  
When heated, the solder is capable of producing large amounts of smoke. When inhaled, this smoke can prompt breathing problems. Over time, these fumes can cause serious damage to one's health.

### **Control Plan:**

- Read and become familiar with machine's operating procedures before operating
- Never touch the element or tip of the soldering iron
- Hold wires to be heated with tweezers or clamps
- Hold the soldering iron like a pen
- Always return the soldering iron to its stand when not in use. Never put it down on the workbench.
- Only turn on hot air gun when needed for use. Keep it off at all other times.
- Always know where the power off switch is located in case of emergency
- Always turn switch to *off* position when not operating soldering station
- Always disconnect the soldering station from the power source before servicing, repairing, or making any adjustments
- Wear safety glasses at all times while soldering
- Use lead free solder when available

- Work in a well-ventilated area. Smoke can form from the flux which can be irritating (one may need to use a fume extractor if smoke increases)
- Avoid breathing in any smoke by keeping your head to the side of, not above, your work.
- Keep all electrical cords away from the heated tip while soldering
- Work on a fire-proof or nonflammable surface that is not easily ignited
- Wear nonflammable protective garments that cover arms and legs to prevent burns
- Always know where the nearest fire extinguisher is and know how to use it
- Do not wear gloves, necktie, jewelry, or loose clothing, as they could come into contact with the soldering tips.
- Tie up long hair or wear protective hair covering to prevent hair from coming in contact with the heated tips of the soldering station.
- Always wash your hands with soap and water after soldering

### ***Experimental Procedures:***

- Put on all safety equipment and tie back loose hair or clothing before operating
- Check to make sure all parts of machine are working and functioning properly
- Make sure heated tip of soldering station is in holder
- Turn on soldering station to desired temperature and let soldering tool warm up
  - The lower *on/off* switch is for the soldering tip
  - The red LED indicates when the soldering iron has come up to temperature
- Make sure workspace area is clean
- Set up work pieces as desired and have solder ready with tweezers or clamps
- Make sure all safety equipment is on correctly
- Once solder tool is heated, use heated tool to solder work pieces
  - Hold the solder tool like a pen
  - If necessary, use hot air gun on work piece (top switch on station)
- When finished, turn off solder station immediately and return heated tip to its stand
- Leave work piece on workspace to cool down
- Clean soldering station and workspace. Dispose of any unused solder or other debris (see Waste Management Procedures)
- Return tool to its appropriate location

For other inquiries, see the User Manual in Appendix.

### ***Waste Management Procedures:***

When finished with the soldering station, always clean the area. There should be no unattached solder, or remnants on the work table or floor. Paper towels and cleaning solution can be found in G217-11. Dispose of silver solder and dross in a labeled container with a lid. Used solder sponges and contaminated rags must be disposed of appropriately.

Place all tweezers, clamps, and solder back in the appropriate place.

### ***Spill and Accident Procedures:***

If an accident occurs, report immediately to the lab supervisor (G217-05) or other appropriate staff member. If no one is around, dial 911 on the landline phone near the door of G217-11 to reach the campus police.

If there is a burn, immediately cool the affected area under cold water for 15 minutes. Do not apply any creams or ointments. Cover with a band-aid. Seek immediate medical attention. If needed, the lab first aid kit is located on the wall near the sink. A first aid pamphlet from DEHS is located in all of the MDC's first aid kits.

### ***Appendix:***



Soldering Station  
User Manual.pdf