

Title: Soldering Procedure	
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Purpose, Scope and Background

To minimize risks and protect oneself from physical harm while using a soldering iron.

Risks Include:

Heat

The soldering iron is a source of heat when on. The temperature of the heated tip can reach 850 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

When heated, the solder is capable of producing smoke and/or fumes. If inhaled, this smoke can prompt breathing problems. Over time, these fumes can cause serious damage to one's health.

Roles and Responsibilities

Those using soldering iron need to be familiar with the Control Plan and Procedures

Procedure

Control Plan:

- 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 set it down on the workbench.
- Always know where the power off switch or outlet is located in case of emergency. Always switch off or unplug when not operating soldering iron.
- Wear safety glasses at all times while soldering
- Use lead free solder when available and appropriate for the metals being soldered.
- Use proper temperature setting for the solder.
- If soldering an item that comes into contact with a NHP, disinfect item prior to soldering. Evaluate the toxicity of the solder and fluxes before use.

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- If injured- seek medical attention immediately.
- Work in a well-ventilated area. Use fume hood or snorkel fume extractor when soldering items with excessive fumes or when soldering within an enclosed closed space.
- Avoid breathing in any smoke by keeping your head to the side of, not above, your work.
- Work on an uncluttered fire-resistant work surface. Keep all electrical cords away from the heated tip while soldering
- Always know where the nearest fire extinguisher is and know how to use it

Experimental Procedures:

- Evaluate metals to be joined and potential contact with animal tissues, selecting an appropriate solder/flux system.
- Put on all safety equipment and tie back loose hair or clothing before operating
- If necessary, set up solder iron in fume hood or set up a snorkel fume extractor at workspace
- Make sure workspace area is clean and decluttered.
- Disinfect any items that have come into contact with NHP. Metal to be joined must be clean - free of contaminants, rust, or corrosion.
- Check to make sure all parts of machine are working and functioning properly
- Set up work pieces as desired and have solder ready with tweezers or clamps
- Make sure tip of soldering iron is in holder
- Turn on soldering iron to desired temperature and let soldering tool warm up. Some irons have a temperature indicators: green LEDs, meters, or other indicator of proper temperature. Otherwise melting a small amount of solder can be used to see if it is hot enough.
- Hold the solder iron like a pen.
- Use heated soldering iron to solder work pieces
- When finished, turn off or unplug solder iron immediately and return heated tip to its stand until cooled
- Leave soldered work piece on nonflammable surface of workspace to cool down
- Clean workspace, disposing of cooled solder waste to hazardous waste as required.
- Return tool to its appropriate location

Supplemental Documents

- SOP# 2105 Applying First Aid following injury in a nonhuman primate area
- Injury Report Form
- WaNPRC disinfectant table
- <https://www.ehs.washington.edu/epowaste/chemwaste.shtm>

Keywords

Soldering, Safety, Neuroscience

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