



Sustainability in the Home Studio

Suggested actions list by Joe Silvera

GENERAL SAFETY TIPS:

- 1) Wash your hands often to stop accidental ingestion, absorption or transmission of toxins.
- 2) Wear safety glasses. Use a dust mask, even with healthier materials.

SWITCH TO SAFER MATERIALS:

- **Flux**
 - Use simple paste flux (borax and water), Firescoff, or Prip's flux
- **Pickle**
 - Switch to natural pickle solutions, like citric acid and water (1 part citric acid to 5 parts water. Bonus: it won't plate all of your metal with copper if steel tweezers go into the pickle!)
- **Etching**
 - Switch from acids to galvanic etching with salt water and batteries.
- **Patina**
 - Use natural patinas, like hard boiled eggs, liver of sulphur gel, torch heat patinas, or chips and vinegar for a green patina.
- **Solvents**
 - Substitute Bio Solv for acetone, mineral spirits or paint thinner
- **Ultrasonic solutions**
 - Use alkaline detergents, like PBW instead

FUMES

- From flux, solder, solder boards, wax smoke, kilns (casting, enameling), chemicals, mold release sprays, etc.
- If you don't have good ventilation, use butane torches instead of other gases.
 - **Ventilate your space**
 - Open doors and/or windows.
 - Put a window fan near by to pull air out of the studio (exhaust)
 - Upgrade your air conditioning filter to deal with VOCs and particulates, and run it in fan mode while working.
 - If you can afford it, install studio ventilation.
 - Try an air purifier rated for more than your studio space with a robust filter.
 - Add plants to your studio. They're natural VOC filters, like bamboo, peace lilies or ficus.
 - *Check your air quality with a test kit.

● **Ventilate over your work area**

- Create a DIY fume extractor with hardware store ducting and a window exhaust fan.
- Table top fume extractor for low level fumes.
- Ductless fume extractor with hood.
- Bench fume extractor, like a Hako, Durabull or Quatro.
- Don't have a fume extractor at your bench, use a mask rated for soldering fumes, like a 3M 8212, or a respirator



GASES FROM TORCHES

- First check to see if it's ok to have a gas torch in your space.
- Check with local zoning and your home insurance
- Minimize the amount of gas
 - Switch to a small disposable propane bottle (14 oz) or a 5lb small propane tank (no BBQ tanks), combined with an oxygen concentrator. A 5L, 10L or 15 liter concentrator will cover most tip sizes, including casting torches and melting tips. 10L or 15L can be special ordered from Rio Grande.

DUST

- Switch to silica free, cleaner polishing compounds, like Luxi Red and Luxi Blue Mega Aggressive.
- Collect all metal dust and scrap
 - Base metal dust (copper and copper alloys) is toxic to flora and fauna. Don't let any dust or water borne copper go into landfill or down the drain. Collect dust in sweeps to send to the refiner. Take scrap to local recycling centers.
 - Collect pickle water in a sealed bucket to take to hazardous waste. Label its as copper in an aqueous solution.
- Collect polishing dust with a dust collector (individual or built into a polishing motor), bench dust collector or a DIY dust extractor (Quatro bench pin with a hole, a micro shop vacuum, and adaptors to fit the hose to the bench pin).
- Casting investment contains silica, a known carcinogen. Wear a respirator. Get low dust investment, like Ransom and Randolph's Bandust. Wet clean spills only. Submerge investment waste from flasks and investing in a



sealable watertight bucket. Label it silica investment in water. It can be disposed of in the trash.

- Enamel dust is toxic. Wet clean. Avoid leaded enamels. Store lead contaminated materials to take to hazardous waste. Consider using wet packing methods or other wet enamel methods. Reuse fines from washing and mixed enamels as counter enamel.

RESOURCES

- Eco Jewelry Handbook by Christine Dhein
 - A handy reference with simple guidelines for safer materials, sustainable sources and ergonomics.
- The Jewelry Workshop Safety Report by Charles Lewton Brain
 - The grimoire of hazards and toxins. Sorted by technique and a valuable reference.
- Your local department of hazardous waste management. Berkeley has been friendly and educational. They partner with businesses to help them to be responsible
- The internet and your suppliers - Safety Data Sheets (SDS) and instruction documents - often ignored and honestly sometimes confusing. But informative! Search for them by product online.



*I hope this doc has been helpful for you.
Please contact me if you have any questions.*

Join us at Silvera Jewelry School for workshops with artists and master jewelers. We use these safer products for our in person and online workshops.

-Joe Silvera

