# Studio & Shop Safety Guide

Environmental Health and Safety
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https://www.usf.edu/ehs/
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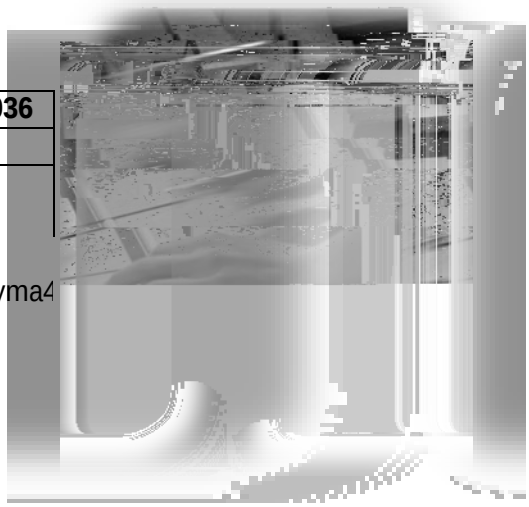
## Contacts and Objectives

| **https://www.usf.edu/ehs/** | **OPM 100** | **813-974-4036** |
|---|---|---|
| Occupational Safety | Lab/Shop/Studio Safety | |
| Property Insurance/Risk Management | Waste Management | |
| Fire Safety | Industrial Hygiene, Asbestos/5 (g)2.6 (ie)-3 (n)yma4 | |



## Contents

## Machine and Tool Safety

- Complete training with an experienced user. Do not use any

## Table 1: Common Shop Machines

| Tool/Machine | Description | PPE |
|---|---|---|

## Chemical Safety: Resources

1.) Manufacturer's Label

The manufacturer of a chemical must provide a label that indicates:

- Full name of chemical
- Hazard warnings
- Name and address of manufacturer

* Chemical containers without manufacturer's labels should be returned to the manufacturer.

2.) Safety Data Sheets (SDS)

An SDS is a document, prepared by the manufacturer, which contains safety information for materials containing hazardous chemicals. It contains information about:

- Material components
- Dangers
- Safe handling of material

Be sure that you have immediate access to the SDS for chemicals you are working with.

3.) NFPA Label

This label was developed by the National Fire Protection Association to identify and rank a material's hazards. Hazards are rated from 0 (no hazard) to 4 (extremely hazardous).

**Fire Hazard** – labeled in red

**Health Hazard** – labeled in blue

**Reactivity Hazard**– labeled in I.717 0a4 0 0 1a.76

- Injection (needles or sharp pieces of glass, plastic, or metal)

Whether or not an exposure will result in injury depends on:

- Exposure frequency
- Exposure duration
- Age, sex, and genetics

Assess the risk by considering these questions:

- What are the hazards?
- What is the worst thing that could happen?
- What can be done to prevent this from happening?
- What can be done to protect from these hazards?
- What should be done if something goes wrong?

Injury and exposure risk can be minimized using:

- Substitution of less hazardous materials
- Engineering controls (working under a snorkel)
- Administrative controls ( training)
- Personal protective equipment (safety eyewear)

## Minimizing Hazards: Personal Protective Equipment (PPE)

Everyone in the shop, including visitors, should wear long pants and sturdy, non-slip shoes that cover the entire foot. Persons working with hazardous chemicals or equipment must have on additional protective equipment.

EYE PROTECTION

- Safety glasses protect eyes against flying debris
- Splash goggles protect eyes against liquid splashes
-

| | |
|---|---|
| SHOP APRONS<br>• Denim and leather aprons protect clothing against spills and dust<br>• Impervious aprons provide extra protection against corrosive liquids | |

RESPIRATOR

- Consult EH&S before use. Federal regulations prohibit the use of respirators by untrained personnel or students. If EH&S determines use is necessary, the individual must participate in the University's respirator program. This includes an annual

| | |
|---|---|
| EYEWASH<br>• If chemicals get into eyes, flush eyes for 15 minutes<br>• Seek medical attention<br>• Shop personnel must flush eyewash weekly and keep a record<br>• Do not block with glassware or equipment | |
| SHOWER<br>• If chemicals get onto clothes/skin, rinse for 15 minutes, removing contaminated clothing<br>• Seek medical attention<br>• Maintenance flushes showers quarterly and performs annual inspections<br>• Do not store items under shower | |

FIRST AID KIT

- Know location
- Check completeness and expi exYNX”x mpleten>1U0111Q62.@#r!7@

| | |
|---|---|
| FIRE EXTINGUISHER<br>• USF Tests annually<br>• To use, remember **P.A.S.S.** (**P**ull the pin, **A**im at the base of the fire, **S**queeze the lever, and **S**weep back and forth)<br>• EH&S offers Fire Prevention Safety training | |

## Hazardous Waste

In 1976, Congress passed the Resource Conservation and Recovery Act (RCRA). This law gave the Environmental Protection Agency (EPA) the authority to regulate all individuals who generate and accumulate hazardous wastes. All shops that generate and accumulate hazardous wastes are subject to unannounced inspections from the Florida Department of Environmental Protection and/or EPA and are thus subject to fines.

### Universal Waste

These materials are subject to hazardous wastes regulations unless they are managed or recycled according to the universal waste regulations.

- Nickel Cadmium, Lithium Ion, Nickel Metal Hydride, Lead Acid, Mercury or Silver Hydride batteries must be segregated and collected in a container labeled with its contents.
- Fluorescent and High Intensity Device (HID) lamps (either used or broken) must be stored in a plastic lined box or metal container labeled with its contents.
- Mercury thermometers, thermostats, and barometers must be stored in a plastic lined box or metal container labeled with its contents.

### Chemical Waste

- At USF, all chemical waste must be treated as hazardous waste and must be collected. Dumping of hazardous wastes,e3 (al H)2.4 (y)-rHymy

**Collect Waste**

- Containers for solid or liquid waste, tags, and labels are available through USF's Inventory Tracking System

## Appendix 1: Template Standard Operating Procedure for Machines and Tools

| Name of Tool/Machine: | Location: | Prepared By: | Date: |
|---|---|---|---|
| | | | |

## Appendix 2: Machine Shop Tool Risk Assessment

| Hazard Class | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| **Power** | Low power hand/small bench tools (2-4 amp @ 120 VAC, <9V cordless) | Medium power tools (1/4 to ½ hp; <10 amp @120 VAC; 14-18V cordless; specialized enclosed NC-computer tools) | Powerful portable and small benchtop tools (>1/2 hp; 10-15 amps @ 120 VAC; 24-36V portable, pneumatics, hydraulics) | Light industrial tools (typically benchtop; <1/2 hp, pneumatics, hydraulics) | Large industrial tools (manual and NC-controlled) |
| **Common Examples** | • Dremel tool<br>• Cordless drill under 18V<br>• Palm Sander<br>• Soldering iron/gun<br>• Heat gun<br>• Hot melt glue gun<br>• Sewing machine<br>• 3D printer | • Jig Saw<br>• 3/8" hand drill<br>• Corded devices < 1/3 hp<br>• 18-24V cordless drill<br>• Laser cutter/engraver<br>• Thermal foam cutter | • Circular saw<br>• Belt sander<br>• Framing nailer<br>• ½ hp geared drill<br>• Reciprocating saw<br>• >18V cordless tool<br>• Chop/miter saw<br>• Router<br>• Mini-lathe<br>• Angle grinder<br>• Printing press | • Small bandsaw<br>• Small drill press<br>• Small/benchtop milling machine<br>• Small/benchtop lathe<br>• Belt/disc sander<br>• Horizontal saw<br>• Scroll saw<br>• Planer/jointer<br>• Bench grinder<br>• SawStop style tablesaw | • Full sized milling machine<br>• Full sized metal lathe<br>• Table saw (non-SawStop)<br>• Radial arm saw<br>• Large drill press<br>• Large band saw<br>• Surface grinder<br>• Large jointer/planer<br>• Shaper/moulder<br>• Power shear |

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## Appendix 3: Studio and Shop Safety Checklist

**University of South Florida**
**Environmental Health & Safety**
**Shop Inspection Form**

**Building/Room No.:** _____
**Purpose:** ☐ Routine ☐ Follow-up
**College:** _____

**Faculty**: _____
**Hazards:** ☐ Chemical ☐ Physical
**Department:** _____

| | | |
|---|---|---|
| 1 | **Documentation** | No |

| | | | | | |
|---|---|---|---|---|---|
| 8.3 | All fire safety equipment are accessible with a 36” access in front | | | | |
| 8.4 | | | | | |