

Chemical Hazards

Organic Solvents:

Organic solvents are a class of carbon-based liquids, commonly a component of oil-based paints, printing inks, wood finishes and varnishes. Organic solvents such as lacquer thinner are used in printmaking to remove ink from the plates.



Organic solvents vary widely in their properties and toxicity. They are often volatile, meaning that they evaporate quickly, giving off vapors that may be harmful if inhaled. Some volatile solvents, like ethyl ether, can have an anesthetic effect on the nervous system. Other solvents may cause long-term liver damage or may otherwise impact the internal organs or nervous system over a long period of time. Many organic solvents are also highly flammable. Their vapors can ignite easily, even at some distance from where the solvent is being used.

Corrosive Materials:

The printmaking process uses strong acids, like hydrochloric (muriatic) and nitric acid, to etch designs into metal plates. Corrosives may be either acids with a very low pH, or caustics (bases) with a very high pH.

Corrosive materials are hazardous because they burn, irritate or damage tissue on contact. Highly concentrated, strong corrosive materials, such as the etching solution used in printmaking, can cause severe, permanent injury to skin tissue. Concentrated corrosives also give off vapors which can damage the respiratory tissue and mucous membranes if inhaled.

Prevention:

Organic Solvents:

Wear gloves and goggles to protect your skin and eyes when handling solvent-based products. Consult the SDS for the solvent you're using to make sure the type of glove you choose will protect against the solvent being used. If the SDS warns against an inhalation hazard, you must work with local exhaust ventilation.

Whenever possible replace highly flammable, toxic or suspect and known human carcinogenic solvents with less toxic solvents. Especially avoid the use of ethyl ether, benzene, carbon tetrachloride and chloroform.

Corrosive Materials:

Use concentrated corrosive materials only in well-ventilated areas. When diluting acids, add acid to the water, not the reverse. Pouring water into concentrated acid causes a violent reaction -- spattering, splashing and sudden build-up of heat. Be cautious of incompatibilities: some corrosives are oxidizers in their concentrated form (e.g. nitric and perchloric acids) and will react strongly with organic materials (e.g. paint thinner). Also, some acids and bases may be incompatible with each other. Concentrated corrosive materials will quickly penetrate most clothing materials and injure your skin, so if you accidentally splash yourself, remove any affected clothing and rinse the skin liberally for at least 15 minutes. Make sure there is an eyewash station nearby before beginning

work with corrosives. Eyewash stations are usually tagged to show the last date of inspection, but you can also check it yourself to make sure it provides clean, rust-free water.

Goggles are a must whenever working with corrosives, and corrosive-resistant gloves are advisable. If you're using highly concentrated corrosives and there is a possibility of splashing or splattering, you should use corrosive-resistant long-sleeved gloves and a face shield over your goggles. If you must work with concentrated corrosives such as fuming nitric acid, do so only under good local exhaust ventilation.

Whenever possible replace highly concentrated corrosives with more dilute solutions.

Waste Issues

Organic solvents

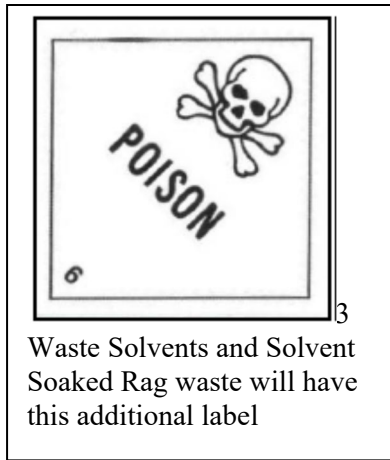
Organic solvents are flammable. Rags used with Organic solvents are flammable. All waste organic solvents are to be placed into a steel container and sealed. All rags are to be placed into the red rag container with the self-closing lid. All hazardous waste will have label 1.

Containers will be labeled as follows:

In this case the start date is the date you first use the container. Complete Full date is when the container is full. Contact EH&S right away for a pickup. Contents will be whatever is in the container. Solvent waste, Solvent Rags; Acids; Bases.



The image shows a template for a Workplace Accumulation Container label. It features a yellow box at the top with the text "Workplace Accumulation Container". Below this is a red box with the text "Hazardous Waste". At the bottom, there are two lines for "Start Date" and "Complete Full Date", and a larger box for "Contents". A small number "1" is located in the bottom right corner of the label area.



Corrosive Materials

Corrosive materials will need to be segregated out from each other to prevent potential reactions.

If nitric or perchloric acids are used the waste should be placed in separate containers. Never mix acids with solvents. Acid containers will be labeled with labels 1, 3 and the following label:



EH&S has less than 90 days from a container is completely full to have it transported off site. So please do not hold on to a full container.

EH&S will supply all waste containers and labels. Contact 2788 or 6455 for containers.

Fill out the hazardous waste pickup Request found on the EH&S website under forms.

| REVISION HISTORY | | |
|------------------|---------------|--|
| Rev | Affected Page | Change Descriptions |
| 0 | All | Release 9/15/12 |
| 1 | All | Formatting Changes on all pages, 5/29/14 |
| 2 | All | Update to New Format 4/28/2017 |