

Hazardous Waste Guidelines and How to dispose of your waste.

University of San Francisco (USF)'s hazardous waste is divided into four categories: 1) chemical, 2) biological (e.g., recombinant DNA and biohazardous), 3) radioactive, and 4) sharps.

Step 1: Characterize Your Waste

Prior to generating hazardous waste, you must characterize it by determining the hazardous properties. By doing this first, you will be able to choose a compatible container to collect the waste, know how to label the container and stay within the accumulation time limits (described below under "Store"). Read the SDS (Safety Data Sheet) for each chemical component, and understand that a chemical waste is hazardous if it meets any of the following hazardous waste characteristics.

Definitions:

Flammable/Ignitable. (1) Liquids (with less than 50% water by weight) with a flashpoint of less than 140 F° (60° C) (e.g., gasoline, benzene, alcohols, acetone, and ethers); (2) solids that can cause fire through friction, absorption of moisture, or spontaneous chemical changes, and when ignited burn so vigorously and persistently that it creates a hazard; and (3) ignitable compressed gases.

Corrosive. (1) Liquids with a pH of less of ≤ 2 (e.g., sulfuric acid); (2) liquids with a pH ≥ 12.5 (e.g. potassium hydroxide); (3) solids, that when mixed with an equivalent weight of water, produce a solution having a pH ≤ 2 or ≥ 12.5 (e.g., hydrated lime, acetamide, cupric bromide).

Reactive. (1) Liquids or solids that are normally unstable and readily undergo change without detonation, react violently with water, or generate toxic gases or fumes when mixed with water; (2) chemicals containing cyanide or sulfur and which generate toxic gases when exposed to pH conditions between 2 and 12.5; (3) chemicals which are capable of detonation if subjected to a strong initiating source, or heated under confinement; or (4) chemicals capable of detonation at standard temperature and pressure. Examples: pyrophoric liquids, sodium cyanide, potassium sulfide, potassium metal, dry picric acid.

Toxic. This is the default hazard waste characteristic for chemical waste that is not flammable, corrosive or reactive. Unless you have documentation, such as a toxicity assessment or bioassay testing, which clearly shows that the waste is non-toxic, label your waste as toxic and manage it through the HWP. EH&S staff can assist you with sampling and waste analyses.

Oxidizer. Oxidizer is a secondary hazardous property. Indicate on the waste label the primary hazard of the oxidizer in addition to "Oxidizer". Oxidizers cause or enhance the combustion of other materials and are a fire hazard if stored or transported incorrectly.

Step 2. Fill out a hazardous waste label.

At USF there are yellow Hazardous Waste Labels that need to be filled out and affixed to the actual bottle of waste.

1. Fill out the accumulation start date. Federal Law requires that waste be dated from the time the first drop of waste enters the waste container. Waste containers must be disposed of within a year from that date. Therefore, hazardous waste should not be in an accumulation area for more than 9 months to give The Environmental Health Office enough time to ship the waste offsite.
2. Next fill out the Generator Information. "The Generator" is you.
3. Fill out the constituents. Spell out the actual chemical names (do not use abbreviations or chemical formulas).
4. Check the appropriate Physical state box. Solid/Liquid/Gas
5. Indicate the Weight or Volume of the waste.
6. Choose the correct hazard and check the appropriate box (Flammable/Toxic/Corrosive/Oxidizer/Reactive). A waste may contain more than one hazard.
7. If the waste has a pH other than 7 indicate this in the pH field. (Use pH indicator strips to pH your waste)

Leave the rest of the label blank. The last box is for The Environmental Safety Office to fill out.

STORAGE

Accumulating different chemical wastes into a single container is permitted as long as the chemicals are similar and compatible. For example, mixing high-BTU organic solvent waste is acceptable but you would never add mercury (this renders solvents non-recyclable and expensive to dispose). As contents are added to the container, write them on the label (or nearby clipboard) so that you will be able to account for 100% of the chemical constituents. Do not depend on your memory when it is time to request a pick up!

Submit a pick-up request,

- 1) Within 9 months of the accumulation start date, OR
 - 2) Immediately if the quantity of any single waste type is approaching 55 gallons, OR
 - 3) Immediately if the chemical is acutely or extremely hazardous and if the quantity is approaching 1 quart or 2.2 pounds.
1. Store chemical wastes in containers that are compatible with the waste, that are in good condition, and are kept closed.
 2. To avoid spills due to overfilling or chemical expansion, please fill waste containers no more than 80% of their capacity.
 3. Segregate incompatible chemicals to minimize the risk of dangerous reactions and segregate unknown chemicals from all other chemicals.
 4. Place containers of compatible chemicals in secondary containment, such as plastic tubs.
 5. Store chemical waste as "close as practical" to where it is being generated. The expectation that the container is being routinely monitored by the person generating the waste, and so moving the container too far from the laboratory may be a violation.
 6. Store chemicals that off-gas in containers with vented caps to avoid high pressure build up in the container over time. Store containers with vented caps in a fume hood.
 7. Request a pickup of your chemical waste before reaching the quantity and time limits.
 8. When using a safety cap that has a funnel attached to it, make sure the top is clipped down when not in use.
 9. Do not store chemicals in or around sinks.
 10. Always store waste chemicals in secondary containment.

DISPOSE

You are not required to package your waste containers into cardboard boxes. The Environmental Safety Office will pick up your hazardous waste from your storage/containment location. Designating a waste storage area in your laboratory or shop, such as a chemical storage cabinet, will assist our staff in locating the waste chemicals.

Use AIM Assetworks on the Facilities Management Website (http://www.usfca.edu/Business_and_Finance/Facilities_Management/Service_Request%282%29/) to put in a service request for a waste pickup or call x6464 to put in a service request. In the description of the service request indicate how many containers, all constituents, and percentages.

UNIVERSAL WASTES

Universal wastes include household-type batteries, electronic wastes, burned-out fluorescent light tubes and CFLs, mercury-containing devices and non-empty aerosol cans. The chemistry stockroom as well as 404 Harney and each department office have collection areas for batteries. When these areas are full, notify Craig Conforti (Lab Safety Manager) to dispose of them. To dispose of other universal wastes use AIM Assetworks.

UNKNOWN CHEMICALS

Should you happen to come across an Unknown waste due to unlabeled waste, unreadable labels, or the label was removed defaced...etc., label the waste immediately with any information you have. If one or all of the components making up the waste are not known, fill out a hazardous waste label and write "unknown" as the sole component OR write it along with the known components. Any information that you can provide will make identification and disposal safer, and less costly. Segregate unknown chemicals from all other chemicals. The hazardous property of "toxic" should be checked in the hazard section on the label unless you are certain what the Hazard Characteristics are.

RECOMBINANT DNA AND BIOHAZARDOUS WASTE

Disposable glass and plastic pipettes that are contaminated with biohazardous waste (E. coli...etc) should be collected into

their original box or bag and when full, placed into an autoclave bag.

All Biohazardous waste at USF is autoclaved. Please contact the Biology Lab Manager (x4403) to have your Biohazardous waste autoclaved.

RADIOACTIVE WASTE

If you have the need to do research with radioactive isotopes contact The Environmental Safety Office (Joe Murphy) at x6464. All radioactive isotopes need to be accounted for per USF's Radioactive Use Authorization. You will also be told how to deal with Radioactive Waste at that time.

SHARPS

Sharps are items that pose a physical hazard such as puncture to or cutting of the skin.

Examples are broken glass, needles, razor blades, or pipettes. There are two classes of sharps waste: 1) contaminated with chemical, biohazardous, or radioactive materials, and 2) uncontaminated.

Sharps Contaminated With Chemical, Biohazardous, or Radioactive Materials

Dispose of chemically contaminated sharps as chemical waste.

Place biohazardous waste sharps into an appropriate sharps container marked with the words "Sharps Waste" (or with the word "BIOHAZARD" and the international biohazard symbol). This container must be puncture and leak proof.

Uncontaminated Sharps

Needles and blades, even if they are uncontaminated, must be placed into a sharps container and disposed of as biohazardous waste. Uncontaminated sharps other than needles and blades are disposed of by placing them into a puncture proof container and labeling the container with the words "Non-hazardous Sharps".

To get rid of Sharps use AIM Assetworks on the Facilities Management Website (http://www.usfca.edu/Business_and_Finance/Facilities_Management/Service_Request%28%29/) to put in a service request for a waste pickup or call x6464 to put in a service request.

For any other questions please contact The Lab Safety Manager (Craig Conforti) at x6687 caconforti@usfca.edu or The Environmental Safety Office at x6464.

