

Hazardous Waste Guidelines

What is a Hazardous Chemical Waste?

- Federal and State regulations define hazardous waste as a substance that poses a hazard to human health or the environment when improperly managed. A chemical waste is considered hazardous if it is either listed on one of the lists of hazardous wastes found in the Federal or State regulations, or exhibits one or more of the four characteristics listed below.
- Check the **Hazardous Waste Chemical List** (*located in the SDS folder*).
 - If your waste is on this list, treat it as a hazardous chemical waste.
 - If your waste is not on the list, determine if it meets any of the four characteristics listed below.
 - If your waste meets any of the four characteristics, it is a hazardous chemical waste.
- Hazardous chemicals that are stored in containers that are unlabeled or mislabeled, in poor condition, or abandoned are also considered hazardous waste.
- Used lubricating oil must be managed as a hazardous waste.
- Engineered nanomaterials such as nanotubes, nanorods, nanowires, quantum dots, etc. must be managed as a hazardous waste.

Characteristics of Hazardous Chemical Waste:

- **Ignitable**
 - Flashpoint <140 degrees F
 - Capable of causing fire at standard temperature and pressure through friction, absorption of moisture, or spontaneous chemical changes
 - Is an ignitable compressed gas
 - Is an oxidizer

- **Corrosive**

- Liquid with pH less than or equal to 2 or greater than or equal to 12.5
- Solid that has pH less than or equal to 2 or greater than or equal to 12.5 when mixed with equal weight of water

- **Reactivity**

- Normally unstable and readily undergoes violent change
- Reacts violently with water
- Forms potentially explosive mixtures with water
- Forms toxic gases, vapors, or fumes when mixed with water
- Is a cyanide or sulfide bearing waste which, when exposed to pH conditions between 2 and 12.5, can generate toxic gases, vapors, or fumes
- Is capable of detonation or explosive decomposition if subjected to a strong initiating source or heated under confinement
- Is readily capable of detonation or reaction at standard temperature and pressure

- **Toxicity**

- Has an acute oral LD50 less than 2,500 mg/kg
- Has an acute dermal LD50 less than 4,300 mg/kg
- Has an acute inhalation LC50 less than 10,000 ppm as a gas or vapor
- Has an acute aquatic 96-hour LC50 less than 500 mg/l
- Has been shown through experience or testing to pose a hazard to human health or environment because of its carcinogenicity (carcinogen, mutagen, teratogen), acute toxicity, chronic toxicity, bio-accumulative properties, or persistence in the environment

Hazardous Waste Labeling:

- Hazardous waste labels must be complete, legible, and permanent.
- Hazardous waste labels must be placed on the hazardous waste container upon the start of accumulation.
- Hazardous waste labels are located in the CMNBTR laboratory.

Hazardous Waste Segregation:

- All hazardous waste must be segregated to prevent incompatible mixtures.
- Segregation can be by hazard class. Hazard class examples include:
 - Flammable, Oxidizer, Pyrophoric, Reactive, Reducer, Acid, Base, and Toxic
- For more information on specific chemical incompatibility, consult a material safety data sheet (SDS).

Hazardous Waste Storage:

- Hazardous waste containers must be stored in secondary containment to adequately contain all of the contents of the container.
- Hazardous waste containers must be kept closed, except when adding waste.
- Report damaged containers to EH&S. EH&S can provide assistance to transfer the contents of the damaged container to an appropriate container.
- Containers must be inspected weekly for signs of leaks, corrosion, or deterioration.
- Do not dispose of chemicals by pouring them down the drain or placing them in the trash.
- Do not use fume hoods to evaporate chemicals.

Sewer Disposal Guidelines

Only substances that meet all of the following criteria are allowed down the sanitary sewer drain:

Non-hazardous

- No radioactive waste
- No hazardous chemical waste
- No untreated biomedical waste

1. Liquid

- No solids, sludge, or viscous substances

2. Will not interfere with sewage treatment operations

- No corrosive pH levels
- No grease or oil