Identification and Segregation of Chemical Waste

SafetyNet #: 43

Chemical wastes must be properly identified and contained. Costs for hazardous waste disposal can be reduced by properly segregating waste prior to pickup. This SafetyNet provides guidelines for safe and proper handling of chemical wastes.

Identification

- Hazardous materials become hazardous wastes:
  - When the owner decides to discard them.
  - When the material poses a threat to public health or the environment and is mislabeled or inadequately labeled (unless corrected within 10 days) or is packaged in a deteriorated or damaged container (unless corrected within 96 hours), regardless of its expiration date.
  - One year after the expiration date has elapsed, unless the material will be used for its original purpose.

Chemical wastes exhibiting any of the following characteristics must be labeled, managed, and disposed of as Hazardous Waste:

- **Ignitability** (Examples: ethanol, xylene, hydrogen gas)
  - Flash point <140°F
  - Capable of causing fire through friction, moisture or reactivity
  - Also includes oxidizers and flammable compressed gases

- **Corrosivity** (Examples: nitric acid, sodium hydroxide)
  - pH < 2 or > 12.5
  - Corrosive to tissue or metals

- **Reactivity** (Examples: nitro compounds, picrates, cyanides)
  - Shock sensitive or potentially explosive
  - Reacts violently with air or water
  - Generates toxic gases when mixed with acids or bases
Toxicity (Examples: heavy metals, pesticides, most organic chemicals)
- Pose a threat to human health or the environment due to carcinogenicity, acute or chronic toxicity, bioaccumulative properties or persistence in the environment

Labeling
Proper labeling of hazardous waste is essential to the health and safety of laboratory personnel and EH&S staff. All hazardous waste must be labeled with a “Hazardous Waste” label (3/08) containing the following information:

- The words "Hazardous Waste"
- Name and address of generator
- The date waste was first put in the container, or for a discarded chemical, the date the hazardous waste label was applied
- The chemical composition, including how much of each component is in the waste, and the physical state of the waste
- A hazardous properties statement, such as “flammable” or “corrosive"

All portions of the label **must** be completed. **EH&S will not accept any waste that is not properly identified.** See SafetyNet #110 [1], “Guidelines for Completing the Chemical Waste Label” for more information.

Segregation and Storage
All wastes should be segregated and properly stored to ensure that chemical reactions will not occur if containers leak. Information about segregating materials is found on material safety data sheets and/or chemical references. Please use the following groups as you segregate your wastes for disposal:

- Bases (pH>10)
- Inorganic (Mineral) Acids (pH<4)
- Organic Acids (pH<4)
- Flammables
- Inorganic Oxidizers
- Organic Oxidizers
- PoisonsReactives
- Mercury Compounds

- Improper mixing of chemical waste will increase the cost of disposal. See SafetyNet #34 [2] for additional information on managing liquid wastes to reduce disposal costs.

- All hazardous wastes must be stored in sealed containers that are in good condition and constructed of materials compatible with the waste. A secondary container should be used to contain the material in case the primary container is overfilled or leaks. Leave ample air space in all liquid waste containers to allow for expansion.
Keep hazardous wastes in a secure area. Access to hazardous waste containers should be limited to those who have been properly trained. This training should be documented in your facility’s chemical hygiene plans.

Accumulation Time

- **Under no circumstances can hazardous waste be accumulated on campus for more than one year.** Since this one-year period includes 60-90 days at the Environmental Services Facility for processing prior to shipment, hazardous wastes should not be accumulated in laboratories for more than nine months.

- There is one major exception to the maximum accumulation period of one year. **Extremely hazardous wastes** [3], such as hydrofluoric acid, arsenic or cyanide-containing wastes, cannot be accumulated for more than 90 days in amounts exceeding one quart. EH&S advises removal of all extremely hazardous wastes as soon as containers are full or at least every 90 days.

See [SafetyNet #8](https://safetyservices.ucdavis.edu/safetynet/guidelines-disposal-chemical-waste) [4], “Guidelines for the Disposal of Chemical Waste,” for additional information on chemical waste identification, segregation, and storage.

Contact

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**More information**

Related content

1. Chemical Waste Disposal Guidelines
2. Managing Chemical Waste Streams To Reduce Disposal Cost
3. Guidelines for Completing the Chemical Waste Label

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