



CHEMICAL WASTE FACT SHEET

Chemical Waste (also called Hazardous Waste) is a category of waste which poses a threat to employees and the environment if mismanaged. Harvard University produces a variety of hazardous wastes subject to strict regulation. These wastes require special handling and management practices and disposal by licensed hazardous waste facilities. This document has been developed to assist Researchers, Facilities Maintenance, Construction/Renovation Managers, Engineering and other University personnel with proper hazardous waste handling. The key hazardous waste issues typically related to University operations are summarized below. Additional information is available by contacting your local EH&S office.

Common lab hazardous wastes include:

- Spent solvents, acids, bases and oxidizers used in extractions, cleaning or other processes.
- Unused reagents and other chemicals that are no longer needed, do not meet specifications, are contaminated, have exceeded their storage life, or are otherwise unusable in the lab.
- Waste oils.
- Other miscellaneous materials, including broken mercury thermometers, heavy-metal salts, poisons, etc.

Common hazardous wastes generated by University operations include:

- Waste oils and lubricants generated by a variety of University operations including motor vehicles, elevators, plant maintenance, etc.
- Unused chemicals and other hazardous substances, such as pesticides, strong acids & bases, paints, aerosol cans, etc. that are no longer needed, do not meet specifications, are contaminated, have exceeded their storage life, or are otherwise unusable.
- Used ethylene glycol and other coolants.
- Used solvents from cleaning, painting or other processes.
- PCBs, batteries, lead paint and other miscellaneous materials including, contaminated rags and wipes, or broken mercury-containing lamps (i.e. fluorescent lamps).
- Contractor hazardous wastes can include any of the above. Harvard University is ultimately responsible for the proper on-site management and off-site disposal of these hazardous wastes.

To be considered Chemical Waste, these wastes may either:

- Appear on lists of specific chemicals defined as hazardous waste issued by the Massachusetts Department of Environmental Protection (DEP) or,
- Exhibit certain characteristics defined by the DEP.



These characteristics include ignitability, corrosivity, reactivity and toxicity. As soon as a chemical has reached the end of its useful life, the material becomes subject to hazardous waste regulation. Your local EH&S representative is available to provide assistance with waste identification (Contact information below).

Regulations require a permit for the transport of hazardous waste on public roads. Discharging hazardous wastes and chemicals in sinks is prohibited by wastewater regulations. Hazardous wastes must be accumulated and stored in properly managed containers. Containers storing hazardous wastes are subject to the following requirements:

Storage

Containers may only be stored in a designated "satellite" accumulation areas or "main" accumulation areas. Satellite areas are accumulations of hazardous waste at or near the point of generation under the control of a single person. Once a satellite accumulation container is filled, it must be dated and transferred to a main accumulation area or shipped off-site for disposal, within three days. *Be aware that there can only be one container per waste stream (same chemical or mixture) in the SAA at any given time.* Main accumulation areas are designated storage areas which are subject to longer term storage time limitations and must meet various other criteria.

Labeling

Labels must include the following information:

- The words "Hazardous Waste."
- The waste type in words (i.e. Spent Non-Halogenated Solvents, Waste Oil, etc.).
- The associated hazards in words (i.e. ignitable, toxic, etc.).
- The date when the container becomes full or otherwise ready for disposal.

Containers must be labeled and situated so that labels are clearly visible for inspection.

Closure

Containers must be closed at all times, unless waste is being added or removed. Open-top funnels may not be left in container opening.

Condition & Compatibility

Containers must be in good condition. There may not be severe rusting, dents, or other conditions which could cause a leak, etc. Containers must be compatible with hazardous wastes stored within them. A metal container should not be used to store aggressively corrosive substances. When in doubt, use the original shipping container.



Weekly Inspections

Containers must be inspected weekly to ensure that they are properly labeled, in good condition, and meet other criteria described above. It is the responsibility of facility personnel to inspect satellite accumulation hazardous waste containers on a weekly basis.

University personnel whose duties or activities involve the management (i.e. generation or responsibility for waste containers, etc.) of hazardous waste are required to receive hazardous waste training within 6 months of the start of such activities or duties and annually thereafter. At Harvard, initial training and annual refresher training is provided via EH&S web-based training program.

Waste Minimization

Federal law requires generators of hazardous waste to implement measures to limit and reduce the volume and toxicity of hazardous waste.

Waste minimization techniques include:

- Process/equipment adjustment or modification.
- Toxic material substitution.
- Waste segregation and separation.
- Recycling.

Please integrate these practices whenever and wherever you can.

Chemical Spill Reporting

Releases of hazardous waste(s) to the environment should be immediately reported to your Department's Environmental and Safety Compliance Officer. Releases to the environment include discharge of solids, liquids and/or gases to lab drains, trash containers or to the atmosphere. *If there has been a release, please immediately call the local EH&S office during normal business hours (Cambridge: 495-2060, Longwood: 732-1720). After-hours releases should be reported to the Control Center: 495-5560.* EH&S will assist in determining whether the release must be reported to regulatory agencies.

Both the DEP and EPA have hazardous waste program enforcement responsibility and authority. Either or both may perform unannounced compliance inspections at anytime. Commonly observed compliance deficiencies observed during DEP/EPA compliance inspections include:

- Mislabeling of containers.
- Containers not properly closed or funnels left in containers.



- Failure to transfer waste from satellite accumulation areas within 3 days.
- Incompatible wastes not properly segregated.
- Lack of sufficient personnel training and training records.

Universal Waste

The following wastes are NOT considered hazardous when recycled:

- Hazardous batteries primarily nickel cadmium (NiCd), Lithium and mercury containing button batteries (Note: Lead Acid batteries should be recycled thru alternative means - contact EH&S (617) 496-3322 Cambridge/Allston; (617) 432-1720 Longwood).
- Mercury-containing switches
- Mercury-containing lamps, such as fluorescent lamps; and
- Hazardous waste pesticides (e.g. mercury-based, arsenicals, chlorinated), pesticides that have been recalled or banned from use, and/or pesticides that are obsolete, have become damaged or are no longer used due to changes in application practices.

If you have any hazardous waste related questions, contact your local EH&S representative at:

Cambridge/Allston Campus:

EH&S office (617) 495-2060

Longwood Campus:

EH&S office (617) 432-1720