

# Chemical Waste and U

Did you know that chemical waste **storage, labeling, packaging** and **disposal** are regulated by Federal and State law? Each generator of chemical waste at the U is responsible for the proper management of their wastes.

The Resource Conservation & Recovery Act (RCRA) was enacted by Congress in 1976 to protect human health and the environment. This Act allows the Environmental Protection Agency (EPA) to promulgate rules governing the control of hazardous waste from the point of generation through ultimate disposal, “cradle-to-grave”. The specific requirements are identified in Title 40 Code of Federal Regulations, Parts 100-399 (available at [www.access.gpo.gov/nara/cfr/index.html](http://www.access.gpo.gov/nara/cfr/index.html)) and the State of Michigan, Public Act 451, Parts 111 and 121 (available at [www.state.mi.us/orr/](http://www.state.mi.us/orr/)). In addition, the University requires ALL chemical wastes be disposed through the OSEH – HazMat Program.

OSEH's Hazardous Materials (HazMat) Management Program Area is here to assist the University community in maintaining compliance with regulations pertaining to waste management and disposal. HazMat's specific services include:

- Technical advice on identification, labeling and manifesting of biological, chemical and low-level radioactive waste
- Collection, processing and disposal of chemical, biological and low-level radioactive waste
- Emergency response to accidental spills of biological and chemical materials
- Laboratory cleanouts of biological and chemical waste
- Technical advice and training on emergency response to biological and chemical spills
- Waste disposal supplies
- Battery recycling
- Pollution prevention / Waste minimization

The following guidelines are provided to assist generators at the U in complying with essential practices for proper management and disposal of chemical wastes:

## Containment

Secondary containment is required for generators at the U generating any amount of hazardous waste (excluding wastes which do not contain free liquids – i.e. 100% solid). Each generator must comply with the following requirements:

- The containment must be able to hold 100% of the largest container **or** 10% of the volume of all the containers in the system, **whichever is larger**.
- The container must be managed so there is no release into drains, sewers, surface water or groundwater.

## Containers

Containers of chemical waste (bottles, jugs, drums, vials, boxes, etc.) must be:

- In good condition (no cracks, leaks, rust, etc.)
- Compatible with the waste
- **Labeled** with **ALL** of the following:
  1. “Hazardous Waste”
  2. The RCRA/MI Act 451 Waste Code **or** the chemical name that identifies each constituent in the container.
  3. The Accumulation Start Date – the date the first drop of waste was placed into the container.  
NOTE: The container cannot be kept at the generator’s location for more than 90 days.  
Contact OSEH-HazMat for pickup **within 60 days** of the accumulation start date. OSEH-HazMat will make every attempt to pickup waste within 1 week of scheduling and arrange for proper disposal.

Hazardous Waste labels which prompt the user for the required information are available FREE from OSEH-HazMat. Call 763-4568.

- **Kept CLOSED** unless actively adding or removing waste. Funnels cannot be left in waste containers. They must be removed immediately after use and the container lid closed/sealed.

## Empty Containers

If you have a RCRA empty container, **as defined below**, you may dispose of it in your “regular” trash for custodial services to pickup (deface and triple rinse the container unless acutely hazardous; glass should be boxed; plastic can be placed into regular refuse containers). Empty containers are exempt from regulation as RCRA hazardous waste **if the following criteria are met**:

**Gases:** Gas containers are empty when the pressure in the container approaches atmospheric pressure. Empty cylinders should be returned to the supplier or packaged in a box and labeled “empty gas cylinders for pickup by OSEH-HazMat”.

### Acutely Hazardous Waste (P or U coded wastes):

A listing of RCRA acutely hazardous wastes (PXXX or UXXX waste codes) can be found in Title 40 CFR 261.33. The MI Act 451 acutely hazardous wastes (XXXU waste codes) can be found at <http://www.state.mi.us/orr/images/admincode/figures/ac00299/205c.pdf>

Containers holding acutely hazardous waste are considered RCRA empty if they have been triple-rinsed with solvent appropriate for removing the acutely hazardous waste. The solvent rinses should be collected for disposal as hazardous waste. If you are unsure whether the empty container previously held an acutely hazardous material,

do not discard the container without verification. Place the empty container with your waste and an OSEH rep will make a determination at the time of collection.

#### **Chemical Wastes (non-acutely hazardous):**

1. All waste has been removed using standard/common practices (pouring, pumping, draining, etc.) AND less than 1 inch of material remains in the container.

**OR**

2. For containers less than 110 gallons in size -- No more than 3% by weight of container remains.

#### **Explosives and Forbidden Materials**

Due to their delicate nature and inherent instability, explosives and forbidden materials (as identified in the U-M OSEH guidance manual "How to properly dispose of Hazardous Waste") cannot be transported for disposal by the normal procedure. Special regulations by the Department of Transportation and the Michigan Department of Environmental Quality require the University to handle and dispose of explosives and forbidden materials in a manner consistent with their characteristics.

If you have, or suspect you may have an explosive or forbidden material and need to make arrangements for its disposal, contact OSEH HazMat. Special preparations will be coordinated through our disposal facility to provide disposal.

#### **Mixed Waste**

Mixed Wastes are wastes with radioactive and chemical constituents in them. Generators at the U are strongly encouraged to:

- Not generate mixed wastes.
- Segregate hazardous chemicals whenever possible.
- Not combine chemicals and radioactive wastes in the same container unless the combination is an inherent part of the experimental protocol and has been authorized by OSEH – Radiation Safety Services.
- Isolate chemical and mixed wastes from all forms of radioactive wastes.
- Reduce volumes of mixed waste generated.
- Contact OSEH for guidance and recommendations.

#### **Disposal of Unknowns**

Chemical wastes with no identification (unknowns) present a particularly dangerous threat, due to their unknown composition and characteristics. If you have an unknown waste:

1. Segregate it from other wastes. Under no circumstances should an unknown waste be placed in a shipping container with properly labeled and manifested wastes.
2. Contact OSEH HazMat to make arrangements for proper characterization and disposal of the waste.

(A minimal charge may be assessed for this service.)

#### **Lab Decommissioning**

Before vacating the laboratory, specific safety measures must be taken while transferring chemicals to another laboratory and/or disposing of chemicals, which are no longer, needed. Contact OSEH's Hazardous Materials Program (763-4568), or Biosafety Program (763-6973) with specific questions on moving or disposing of chemicals.

All chemicals for disposal must be properly labeled, manifested and packaged for OSEH pickup. In the event there are unusually large amounts of chemical waste or several laboratories within close proximity will be vacated at one time, OSEH HazMat may be able to provide additional assistance, as necessary, to expedite the process.

OSEH strongly recommends disposing of all unwanted chemicals at least 14 days prior to the actual move date.