

Chapter 17: [Hazardous Waste](#)

Management Requirements

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URL: <https://www-group.slac.stanford.edu/esh/eshmanual/references/hazwasteReqMan.pdf>

1 Purpose

The purpose of these requirements is to ensure the proper management of hazardous waste. They cover determination, collection, storage, labeling, and tracking. They apply to workers (as *hazardous waste generators* and *custodians*), supervisors, line management, and Waste Management.

2 Requirements

Requirements for the management of waste are based on type (*hazardous, industrial, or universal*) and amount. Under the federal Resource Conservation and Recovery Act (RCRA), SLAC is an authorized *large quantity hazardous waste generator* and is allowed the corresponding quantities and time limits for on-site storage of these wastes. Wastes at SLAC are collected and stored according to requirements and then transported off-site for treatment and disposal.

Note SLAC is not a treatment, storage, and disposal facility (TSDF), since such facilities require extensive permitting. Although not a TSDF, SLAC is authorized by the state of California to perform limited hazardous waste treatment under the California Tiered Permit Program, which allows treatment of permit-specified hazardous waste streams. (See [Hazardous Waste: Treatment Requirements](#).)

2.1 Determination

Hazardous waste generators must monitor their use of materials and determine when the material may be hazardous and has, in fact, become a waste and cannot be reused (see [Hazardous Waste: Waste Determination and Characterization Guidelines](#)). Once a material has been determined to be both hazardous and a waste, it must be collected and stored according to specific requirements.

2.2 Accumulation Time Limits

Accumulation time is the total time from the *accumulation start date*, when the first drop of waste begins accumulating in a storage container or the date a material/item is deemed no longer needed, or useful., until the waste is transported off-site. Total allowable accumulation time is determined by law and depends primarily on waste type:

- *Hazardous waste.* As a large-quantity generator, SLAC may store hazardous waste on-site for no more than 90 days. (If a hazardous waste meets certain criteria it may be stored on-site for one year or until

the container becomes full, whichever occurs first. See Satellite Waste Accumulation Areas [SWAAs] below.)

- *Universal waste.* The maximum accumulation time is one year.
- *Industrial waste.* This type of waste is handled as expeditiously as practicable.

Waste, as much as 55 gallons of hazardous waste, or one quart of acutely or extremely hazardous waste, may be stored in *satellite waste accumulation areas (SWAAs)* for one year if the following criteria is met.

- The waste is accumulated in containers at the initial generation point and is under the control of the operator of the process generating it.
- The initial date of accumulation is clearly marked and visible on each container. Waste management provides SWAA labels that meet this requirement.

Please contact Waste Management for more information and/or assistance with setting up an SWAA (see Section 2.7.4).

Both the generator and Waste Management must coordinate to ensure that the hazardous waste is removed within the time limit. To ensure the legal time limits are met, in general, hazardous waste with a 90-day accumulation period is automatically removed by Waste Management within 45 days of the accumulation start date. Universal and SWAA waste containers are removed within nine months of the accumulation start date.

- If the container is full before the 45-day or nine-month accumulation period ends, call Waste Management to arrange a pickup and container replacement.
- If the container is only partially full when the automatic collection occurs, Waste Management will collect the waste. For routine waste the containers will be replaced and/or relabeled automatically. For non-routine waste the container will be removed and not replaced, unless a requested.

For hazardous and universal waste that is not being stored in a Waste Management-provided and labeled container, it is the responsibility of the generator to label the container (see Section 2.4.2). The same accumulation time limits apply. Contact Waste Management within the 45-day accumulation time for a pickup.

2.3 Submitting Requests for Containers and Waste Pickups

To request a container delivery and/or waste pickup the generator must contact Waste Management using one of these methods:

1. Submitting a [Hazardous Waste Pick-Up and Empty Container Request Form](#).
2. Sending an e-mail to waste@slac.stanford.edu.

2.4 Hazardous Waste Containers and Labeling

2.4.1 Pre-labeled Containers from Waste Management

To request a suitable hazardous waste container, submit a request to Waste Management (see Section 2.3). Based on the information provided, Waste Management will deliver labeled hazardous waste container(s) compatible with the type of waste to be generated. The label supplied varies:

- If the waste has been determined to be hazardous with an accumulation time of 90 days, the label will be yellow.
- If the waste has been determined to be hazardous/SWAA, the label will be white with a red border.
- If the waste has been determined to be universal, the label will be white with a blue border.
- If the waste has been determined to be industrial (Class II), and/or not yet determined to be hazardous (waiting analysis), the label will be white with no border.

Each label features an ID number, which allows the waste to be tracked. The label also includes information required by federal and/or state regulations, such as the accumulation start date.

2.4.2 Provisional Labeling of Containers Not Originating from Waste Management

If hazardous waste begins accumulating without a properly labeled container provided by Waste Management (for instance, laboratory chemicals, if the hazardous waste is generated in the original chemical container, or if the waste does not fit into a hazardous waste collection drum):

1. Submit a request within one working day of starting to generate the waste to obtain a proper label and container from Waste Management.
2. Immediately label the container or item. Hazardous waste regulations are specific about the information that must be clearly legible on each hazardous waste container:
 - The words HAZARDOUS WASTE
 - Accumulation start date. For items accumulated in containers not provided by Waste Management, the accumulation start date is the date on which the item(s) became waste.
 - Waste composition and physical state (such as chlorinated solvent waste, liquid)
 - The hazard characteristics of the waste (such as flammable, reactive, toxic, corrosive)
 - Company name and address: SLAC National Accelerator Laboratory, 2575 Sand Hill Road, Menlo Park, CA 94025
 - Name and phone extension of the hazardous waste generator

Caution Improperly labeled hazardous waste can result in a regulatory violation.

2.4.3 Chemical Containers

2.4.3.1 Return-to-Vendor Containers

If possible, chemicals should be requested and purchased in return-to-vendor containers. If purchasing chemicals through [Chemical Management Services \(CMS\)](#), check with the chemical lifecycle management program manager to see if the container is returnable and how to return it.

If a return-to-vendor container is not returnable because it is not empty or cannot be returned because it held acute or extremely hazardous material (contact Waste Management for assistance with determining), arrange for a container pickup by submitting a request to Waste Management.

Note A container with unused product may still qualify for a chemical exchange.

2.4.3.2 Non-returnable Chemical Containers

For non-empty chemical containers label as indicated in Section 2.4.2 and submit a pickup request to Waste Management within 45 days from accumulation date.

Empty non-returnable chemical containers that previously held hazardous materials are handled by Waste Management in order to determine which are recyclable and which require disposal as hazardous waste. Using the entire contents so that the container can be recycled is preferable. By regulation, a container (or inner liner removed from the container) is considered empty if

- It held a pourable hazardous material and no further material can be poured or drained from the container or inner liner no matter which orientation it is held in.
- No hazardous material remains in the container or liner that can be feasibly removed by physical methods (excluding rinsing).

Labeling – Empty Containers

Labeling requirements for empty containers depend on the volume of the container and the condition of the original label.

Containers capable of holding five gallons or less require only a clear indication that the container is empty and what it last contained:

1. Write EMPTY on the container if the manufacturer's label is legible.
2. Write LAST CONTAINED X (X = previous content) if the manufacturer's label is no longer legible or if the label does not reflect the most recent content.

Containers capable of holding more than five gallons require complete contact information. Include all of the following:

1. DATE EMPTIED (mm/dd/yyyy)
2. LAST CONTAINED X (X = previous content) if the manufacturer's label is no longer legible or if the label does not reflect the most recent content
3. CONTACT PERSON (responsible person's name and telephone extension)

Contact Waste Management for pickup.

Note Empty containers capable of holding five gallons or more may not be stored more than one year.

2.4.4 Compressed Gas Cylinders

Certain types of compressed gas cylinders, such as small portable propane tanks and lecture bottles, must be disposed of through Waste Management. Contact Waste Management to arrange for a pickup. Damaged, unidentifiable, or abandoned cylinders must also be disposed of as hazardous waste, through Waste Management.

2.5 Segregation

Hazardous waste, like hazardous materials, must be segregated based on chemical compatibility. (For details see [Chemical Lifecycle Management: Management and Use Requirements](#).) Certain hazardous wastes must be segregated to avoid contamination of other hazardous or non-hazardous wastes.

2.5.1 Hazardous – Hazardous Contamination

- Store contaminated oil (polychlorinated biphenyl [PCB] or solvent-contaminated) separately from regular oil waste.
- Store liquid halogenated solvents separately from liquid non-halogenated solvents. Non-halogenated solvents are a possible candidate for recycling and fuel blending, which ultimately reduces our cost of disposal.

2.5.2 Hazardous – Non-hazardous Contamination

- Store solvent or oily solids separately from clean materials.
- Store contaminated soils separately from clean soils.

2.6 Secondary Containment

Secondary containment is required for storing liquid hazardous waste in containers 55 gallon or more or other waste that might be released into the environment, such as dusts, powders, and shavings. Planning for adequate containment includes consideration of capacity as well as waste compatibility requirements. (For additional information, see [Chemical Lifecycle Management: Management and Use Requirements](#).) Secondary containment can be constructed or it can be purchased. For selection criteria, consult Waste Management.

2.7 Collection Areas

Hazardous waste collection areas are designated areas that can safely accommodate hazardous waste containers and their contents for a specified waste accumulation period. These include the following types:

- *Hazardous waste storage area (HWSA)*. This is the centralized hazardous waste storage area, managed and operated by Waste Management, and used to store hazardous wastes collected from other areas on-site. This is where wastes are prepared for off-site transportation.

- *Waste accumulation area (WAA)*. These areas are for storage of hazardous wastes of different types and/or from different generators until the waste is transferred to the HWSA. Waste is typically moved from a WAA to the HWSA after approximately 45 days or nine months of waste accumulation.
- *Generic waste collection area*. These are areas or locations for the hazardous waste collection needs of a specific generator. Wastes from these areas can be sent to either a WAA or directly to the HWSA, but are generally moved to the HWSA before the waste accumulation time exceeds 45 days or nine months.
- *Satellite waste accumulation area (SWAA)*. This special type of generic waste collection area is sited in close proximity to the waste generator and is therefore routinely supervised. Wastes in amounts less than 55 gallons of hazardous waste or one quart of extremely hazardous waste can accumulate in a SWAA for up to nine months before being sent to the HWSA.

Certain types of hazardous or universal wastes are managed through Facilities and Operations (see [Hazardous Waste: Universal Waste Requirements](#) and [Hazardous Waste: Used Automotive Battery Requirements](#)). Industrial waste is also tracked and disposed of by Waste Management but it is not typically stored in the areas above, which are designated for hazardous waste (see [Hazardous Waste: Industrial Waste Requirements](#)).

Waste collection areas must be planned, prepared or constructed, tracked, inspected, and maintained in accordance with the requirements below.

2.7.1 Planning

The following is an overview of requirements and recommendations. For additional information or siting and construction expertise, consult both Waste Management and Facilities and Operations. Facilities can be reached by submitting a service request through the [Facilities Service Request System](#).

Waste collection areas may be indoors or outdoors. They must

- Be formally designated by Waste Management
- Be sited away from vehicular traffic, sewer drains, storm drains, and property boundaries
- Provide adequate space for aisles around each container
- Have a custodian, designated by line management

The following, additional, measures are recommended. Waste collection areas should be

- Sited on a non-porous surface, such as specially coated concrete
- Secured from unauthorized entry. Consider a room or fenced-in area that can be locked.
- Protected from exposure to sun and rain. This can be accomplished by choosing an indoor area, or covering the area with a canopy, or covering the containers with a tarp.

In planning any waste collection area, keep in mind the allowable waste quantities and waste accumulation times (see Section 2.2).

Areas where hazardous waste is stored may also need the following:

- Applicable emergency equipment, such as an eyewash or shower

- Applicable warning and directional signs to indicate the nearest telephone, eyewash, emergency shower, or exit
- Clear signage that identifies the area and includes contact information: name and phone extension

2.7.2 Maintenance

The hazardous waste collection area custodian must

- Keep the area free of debris and trash and schedule housekeeping, as necessary.
- Pump rainwater out of secondary containment immediately. If the rainwater has become contaminated, arrange with Waste Management to evaluate the water to determine the proper disposal method.
- Ensure all containers are kept closed when not in use.
- Inspect all containers labeled hazardous waste for leaks. If a leak is found, immediately arrange a spill cleaned in accordance with [Chapter 16, “Spills”](#).
- Verify that the safety equipment remains functional and that safety information is current.

2.7.3 Inspection

Waste containers and collection areas must be inspected at least once a week. Inspections do not need to be documented. For guidance on what to look for, see [Hazardous Waste: Container and Collection Area Weekly Inspection Checklist](#).

Note When a storage area contains both hazardous materials and waste, the most restrictive combination of inspection requirements applies. For inspection requirements for hazardous materials, see [Chapter 40, “Chemical Lifecycle Management”](#).

2.7.4 Satellite Waste Accumulation Area

A *satellite waste accumulation area (SWAA)* is defined as a location at or near the point of generation where waste is initially accumulated before being sent to the HWSA. A satellite area must meet the following requirements:

- Waste Management must approve a container to be designated as a satellite waste container and the container must be picked up by Waste Management within nine months of the accumulation start date.
- The satellite area must be under the control of the process operator where the waste is being generated or the area must be secured at all times.
- The generator must be able to prevent improper wastes from being added to the satellite container.
- The generator may accumulate no more than 55 gallons of dangerous waste or one quart of acutely hazardous waste per waste stream in containers at or near any point of generation.

2.8 On-site Transportation

For on-site transportation requirements, see [Hazardous Materials and Waste Transportation: On-site Transportation Requirements](#).

3 Forms

The following forms and systems are required by these requirements:

- [Hazardous Waste Pick-Up and Empty Container Request Form](#) (SLAC-I-800-0A08R-001). Form used to request from Waste Management delivery and pickup of waste containers
- [Hazardous Waste: Container and Collection Area Weekly Inspection Checklist](#) (SLAC-I-750-0A08J-005). Checklist used to guide weekly inspections of containers and collection areas; not required to complete or keep
- [Facilities Service Request System](#). System used to request services from Facilities

4 Recordkeeping

The following recordkeeping requirements apply for these requirements:

- Waste Management
 - Manages the hazardous waste tracking system
 - Stores hazardous waste manifests on-site and makes them available for a period of three years and stores them off-site until closure of facility
 - Stores regulatory reports on-site and makes them available for a period of three years
 - Stores regulatory permits on-site until date of expiration

5 References

[SLAC Environment, Safety, and Health Manual](#) (SLAC-I-720-0A29Z-001)

- [Chapter 17, “Hazardous Waste”](#)
 - [Hazardous Waste: Waste Determination and Characterization Guidelines](#) (SLAC-I-750-0A08T-001)
 - [Hazardous Waste: Universal Waste Requirements](#) (SLAC-I-750-0A08S-002)
 - [Hazardous Waste: Industrial Waste Requirements](#) (SLAC-I-750-0A08S-003)
 - [Hazardous Waste: Used Automotive Battery Requirements](#) (SLAC-I-750-0A08S-007)
 - [Hazardous Waste: Office Waste Requirements](#) (SLAC-I-750-0A08S-008)
 - [Hazardous Waste: Treatment Requirements](#) (SLAC-I-750-0A08S-006)
 - [Hazardous Waste Management](#)
 - Chapter 16, “Spills”
- [Chapter 40, “Chemical Lifecycle Management”](#)
 - [Chemical Lifecycle Management: Management and Use Requirements](#) (SLAC-I-730-0A09S-038)
 - [Chemical Management Services \(CMS\)](#)

- [Chapter 52, “Hazardous Materials and Waste Transportation”](#)
 - [Hazardous Materials and Waste Transportation: On-site Transportation Requirements](#) (SLAC-I-730-0A09S-037)
- [Chapter 53, “Chemical Safety”](#)
 - [Chemical Safety: Personal Protective Equipment Requirements](#) (SLAC-I-730-0A09S-017)
- [Chapter 58, “Laboratory Safety”](#)