Chapter 17: Hazardous Waste

Waste Determination and Characterization Guidelines

1 Purpose

The purpose of these guidelines is to ensure potentially hazardous waste is properly identified. They cover identifying and characterizing hazardous waste. They apply to workers and supervisors.

2 Guidelines

All waste that is classified as hazardous – because of its properties, regulatory status, or both – must be managed and disposed of following stringent requirements. The following guidelines describe how to determine if waste is hazardous and how to characterize it.

Note Characterizing hazardous waste can be a complex process. For help identifying and categorizing potentially hazardous waste, contact the Waste Management Group.

2.1 Determining If the Material Is Waste

Hazardous material becomes waste when it is not appropriate for further use.

2.2 Determining If Waste Is Hazardous

Waste is considered hazardous if it has hazardous characteristics or is classified as hazardous by federal or state regulations.

2.2.1 Hazardous Waste Properties

A waste is considered hazardous if it has one or more of the following properties:

- **Corrosivity.** The ability to react dangerously with other waste, dissolve metal or other material, or burn the skin. Examples are waste from rust remover, acid or alkaline cleaning fluid, and battery acid.

- **Ignitability.** The ability to cause fires during transport, storage, or disposal. Examples are waste from paint, gasoline, diesel fuel, some degreasers, and some other solvents.

- **Reactivity.** The ability to become unstable or undergo a rapid or violent chemical reaction with water or other materials. Examples are waste from cyanide plating, bleach, and other oxidizers.

- **Toxicity.** The presence of toxic constituents above established regulatory levels. Examples are waste containing dissolved heavy metals, insecticides, and solvents.
To determine a material’s properties, check the safety data sheet (SDS), which includes a range of information such as hazardous ingredients and properties as well as health and safety information.

### 2.3 Determining the Hazardous Waste Category

Once a material has been identified as hazardous waste it will fall into one of the three categories below. Each category has specific accumulation time limits and management requirements.

1. **Hazardous waste** is in general a material that is no longer appropriate for further use, with properties that could pose a danger to human health or the environment. *Common hazardous waste* includes oil and oil filters and used chemical containers. (See [Hazardous Waste: Management Requirements](#).) *Office waste*, such as toner cartridges and aerosol cans, are also considered hazardous. (See [Hazardous Waste: Office Waste Requirements](#).)

2. **Universal waste**, a subcategory of common hazardous waste, includes recyclable or salvageable hazardous materials such as spent batteries and electronic equipment. (See [Hazardous Waste: Universal Waste Requirements](#).)

3. **Industrial waste** includes waste that contains hazardous materials but in concentrations below regulatory thresholds. Typical industrial wastes include demolition debris and contaminated soil. (See [Hazardous Waste: Industrial Waste Requirements](#).)

Table 1 lists examples of hazardous wastes at SLAC.

<table>
<thead>
<tr>
<th>Table 1 Typical Hazardous Wastes Generated at SLAC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acid debris: rags, swipes, gloves, etc</td>
</tr>
<tr>
<td>Acids, mixed</td>
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<tr>
<td>Aerosol cans</td>
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<tr>
<td>Alcohols: ethyl alcohol, methyl alcohol, isopropanol, etc</td>
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<tr>
<td>Alkali solutions, mixed</td>
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<tr>
<td>Asbestos</td>
</tr>
<tr>
<td>Batteries (for all types of equipment, except lead acid)</td>
</tr>
<tr>
<td>Beryllium-contaminated debris</td>
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<tr>
<td>Cutting fluid/water</td>
</tr>
<tr>
<td>Cyanide filters/debris</td>
</tr>
<tr>
<td>Empty containers</td>
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<tr>
<td>Latex paint</td>
</tr>
<tr>
<td>Mercury-contaminated equipment/debris</td>
</tr>
</tbody>
</table>
3 References

SLAC Environment, Safety, and Health Manual (SLAC-I-720-0A29Z-001)
- Chapter 17, “Hazardous Waste”
  - Hazardous Waste: Management Requirements (SLAC-I-750-0A08S-001)
  - Hazardous Waste: Universal Waste Requirements (SLAC-I-750-0A08S-002)
  - Hazardous Waste: Industrial Waste Requirements (SLAC-I-750-0A08S-003)
  - Hazardous Waste: Office Waste Requirements (SLAC-I-750-0A08S-008)
- Chapter 16, “Spills”
- Chapter 40, “Chemical Lifecycle Management”
- Chapter 52, “Hazardous Materials and Waste Transportation”
- Chapter 53, “Chemical Safety”

Other SLAC Documents
- Chemical Management Services (CMS)
- Hazard Communication and MSDS References

Other Documents
- Lawrence Berkeley National Laboratory. Guidelines for Generators to Meet HWHF Acceptance Requirements for Hazardous, Radioactive, and Mixed Wastes at Berkeley Lab (PUB-3092)