Managing Chemical Waste Streams To Reduce Disposal Cost

SafetyNet #: 34

To provide the most cost effective alternatives for disposal, EH&S prepares, packages and disposes of chemical waste two different ways. One method, labpacking, involves placing containers of compatible wastes in a larger container, such as a fiber or metal drum and adding absorbent material such as vermiculite. This drum is then shipped to a disposal facility.

The second method, bulking of chemical waste, involves identifying and segregating certain wastes from campus generators, determining compatibility, and mixing compatible wastes in polyethylene or metal drums. This method is more labor-intensive than labpacking but reduces disposal costs.

Proper identification and labeling of hazardous chemical waste is the responsibility of the person(s) generating the waste. Because of the risks involved, EH&S will not bulk hazardous chemical wastes from waste generators who improperly identify and label their wastes. Wastes from these generators will be labpacked and the higher costs passed on to the generator.

To bulk liquid wastes, the wastes must meet the following requirements:

- Only liquid wastes can be bulked. Some chemical wastes with high freezing points may become solid and cannot be bulked. Examples include DMSO and ethyl acetate.
- The waste must be properly and completely labeled. See SafetyNet #110 [1], “Guidelines for Completing the Chemical Waste Label” for more information. Waste that is labeled incorrectly or exhibits the presence of additional phases, questionable color, or other factors cannot be bulked.
- The waste must pass a compatibility test with similar wastes. Waste that fails a pre-bulk compatibility test due to smoking, fizzing, foaming, polymerization, fire or other reaction cannot be bulked.
- The waste must be in containers of at least 500 ml (~ 1 pint). Wastes in containers less than 500 ml cannot be bulked because they are difficult to handle with the protective equipment that must be worn by hazardous waste staff.
- The following inorganic acids can be bulked if they meet the following requirements:
Nitric acid < 50% Solution
-Hydrochloric Acid < 20% Solution
-Sulfuric Acid not fuming and Cr < 1,000 ppm
-Mixed Acids Cr < 1000 ppm, Pb < 1,000 ppm
-Chromic < 10% Solution
-Perchloric < 10% Solution
-Nitric < 20% Solution
-Sulfuric < 20% Solution
-Hydrochloric < 20% Solution

Inorganic acids must meet the metal limits for bulk solvents.

Other requirements dictated by hazardous waste disposal facilities must also be met in order for EH&S to bulk your waste. Solvent wastes containing metals cannot be bulked if the concentration of a metallic constituent exceeds any of the following thresholds:

**Metal Limits for Bulk Solvents**

<table>
<thead>
<tr>
<th>TAL</th>
<th>LIMIT (mg/l)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arsenic</td>
<td>0.005.0</td>
</tr>
<tr>
<td>Barium</td>
<td>1.000.0</td>
</tr>
<tr>
<td>Cadmium</td>
<td>0.001.0</td>
</tr>
<tr>
<td>Chromium</td>
<td>0.005.0</td>
</tr>
<tr>
<td>Lead</td>
<td>0.005.0</td>
</tr>
<tr>
<td>Mercury</td>
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</tr>
<tr>
<td>Selenium</td>
<td>0.001.0</td>
</tr>
<tr>
<td>Silver</td>
<td>0.005.0</td>
</tr>
<tr>
<td>Nickel</td>
<td>0.020.0</td>
</tr>
</tbody>
</table>

See SafetyNet #8 [2], “Guidelines for Disposal of Hazardous Chemical Waste” and SafetyNet #43 [3], “Identification and Segregation of Chemical Waste.”

**Contact**

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**More information**

**Related content**

1. Guidelines for Completing the Chemical Waste Label
2. Chemical Waste Disposal Guidelines
3. Identification and Segregation of Chemical Waste

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