Training Objectives

• List factors that can influence the likelihood a person will develop health effects from a chemical exposure.
• Identify three ways chemicals can enter the body.
• Explain how chemicals can affect the body.
• Describe and evaluate three ways to eliminate or reduce chemical hazards.
• Describe five requirements of Cal/OSHA’s Hazard Communication standard.
• Describe the new Globally Harmonized System.
• Get information from a Safety Data Sheet (SDS).
OSHA Disclosure Statement

This training is supported under grant number #SH-2764SH5 from the Occupational Safety and Health Administration, U.S. Department of Labor. It does not necessarily reflect the views or policies of the U.S. Department of Labor, nor does mention of trade names, commercial products, or organizations imply endorsement by the U.S. Government.
What Chemicals Do You Work With?
Local Health Effects

A local effect occurs at the point of contact.
Systemic Health Effects

Chemicals enter the body, travel in the bloodstream and harm the internal organs.
How Chemical Hazards Can Be Controlled

- Remove the Hazard
- Work Policies and Procedures
- Personal Protective Equipment
Globally Harmonized System

The Global Harmonization System of Classification and Labeling
Old Chemical Label

- Product identity
- Hazard warnings – including type of hazard
- Name and address of manufacturer
Sample NEW GHS Label

**Product J**
(abc chemical)

**Danger**
Fatal if swallowed
Causes skin irritation

**Precautions:**
- Wear protective gloves.
- Take off contaminated clothing and wash before reuse.
- Wash hands thoroughly after handling.
- Do not eat, drink or smoke when using this product.
- Store locked up.
- Dispose of contents/containers in accordance with local regulations.
- If on skin: Rinse skin with water/shower.
- If in eyes: Rinse cautiously with water.
- If swallowed: Immediately call a Poison Center or doctor/physician. Do not induce vomiting.

ABC Chemical Co., 123 Anywhere St., (123) 456-7890
See the SDS for more information

**Product Identifier**

**Pictogram - acute toxicity**

**Signal Word**

**Hazard Statement**

**Precautionary Statement**

Manufacturer, importer, or other responsible party
# Pictograms

<table>
<thead>
<tr>
<th>Health Hazard</th>
<th>Flame</th>
<th>Exclamation Mark</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Carcinogen</td>
<td>- Flammables</td>
<td>- Irritant (skin and eye)</td>
</tr>
<tr>
<td>- Mutagenicity</td>
<td>- Pyrophorics</td>
<td>- Skin Sensitizer</td>
</tr>
<tr>
<td>- Reproductive Toxicity</td>
<td>- Self-Heating</td>
<td>- Acute Toxicity (harmful)</td>
</tr>
<tr>
<td>- Respiratory Sensitizer</td>
<td>- Emits Flammable Gas</td>
<td>- Narcotic Effects</td>
</tr>
<tr>
<td>- Target Organ Toxicity</td>
<td>- Self-Reactives</td>
<td>- Respiratory Tract Irritant</td>
</tr>
<tr>
<td>- Aspiration Toxicity</td>
<td>- Organic Peroxides</td>
<td>- Hazardous to Ozone Layer (Non-Mandatory)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Gas Cylinder</th>
<th>Corrosion</th>
<th>Exploding Bomb</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Gases Under Pressure</td>
<td>- Skin Corrosion/ Burns</td>
<td>- Explosives</td>
</tr>
<tr>
<td></td>
<td>- Eye Damage</td>
<td>- Self-Reactives</td>
</tr>
<tr>
<td></td>
<td>- Corrosive to Metals</td>
<td>- Organic Peroxides</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Flame Over Circle</th>
<th>Environment (Non-Mandatory)</th>
<th>Skull and Crossbones</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Oxidizers</td>
<td>- Aquatic Toxicity</td>
<td>- Acute Toxicity (fatal or toxic)</td>
</tr>
</tbody>
</table>

*OSHA BRIEF - Hazard Communication Standard: Labels and Pictograms*
Hazard Communication
Safety Data Sheets

Section 1, Identification includes product identifier; manufacturer or distributor name, address, phone number; emergency phone number; recommended use; restrictions on use.

Section 2, Hazard(s) identification includes all hazards regarding the chemical; required label elements.

Section 3, Composition/information on ingredients includes information on chemical ingredients; trade secret claims.

Section 4, First-aid measures includes important symptoms/effects, acute, delayed; required treatment.

Section 5, Fire-fighting measures lists suitable extinguishing techniques, equipment; chemical hazards from fire.

Section 6, Accidental release measures lists emergency procedures; protective equipment; proper methods of containment and cleanup.

Section 7, Handling and storage lists precautions for safe handling and storage, including incompatibilities.

Section 8, Exposure controls/personal protection lists OSHA’s Permissible Exposure Limits (PELs); Threshold Limit Values (TLVs); appropriate engineering controls; personal protective equipment (PPE).

Section 9, Physical and chemical properties lists the chemical’s characteristics.

Section 10, Stability and reactivity lists chemical stability and possibility of hazardous reactions.

Section 11, Toxicological information includes routes of exposure; related symptoms, acute and chronic effects; numerical measures of toxicity.

Section 12, Ecological information*
Section 13, Disposal considerations*
Section 14, Transport information*
Section 15, Regulatory information*

Section 16, Other information, includes the date of preparation or last revision.

*Note: Since other Agencies regulate this information, OSHA will not be enforcing Sections 12 through 15 (29 CFR 1910.1200(g)(2)).