Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Safety Data Sheets (SDS), Labels and Pictograms
What is GHS

• Standardizing and harmonizing the classification, labeling and safety data sheets (SDS) of chemicals world wide.
Why is GHS needed?

- Safer work environment through consistent and simplified communication on chemical hazards
What is required?

• Employers must train their workers on the new format of the safety data sheets (SDS) by December 1, 2013.
Under the old system

• Chemical labels have different versions for different audiences; industrial use, consumer use, transportation & emergency responder use, Agricultural use and international use.

• Safety data sheets configured with different information, formatted in a unique ways
Under the new system

Standardization of:

- Hazard classification: Established specific criteria for classification of health and physical hazards.
- Labels: Chemical manufacturers/importers will be required to label chemicals with harmonized signal word, pictogram, and hazard statement for each hazard class and category as well as precautionary statements.
- Safety Data Sheets: Will now have a specified 16-section format.
OSHA Approved Labels and Pictograms
What does the new format LABEL contain?

- Name, Address & Phone number
- Product identifier
- Signal word
- Hazard statement(s)
- Precautionary statement(s)
- Pictogram(s)
Signal Words

• Used to indicate the level of severity of hazard.
• There are only two signal words, “Danger” and “Warning.”
• “Danger” is used for the more severe hazards
• “Warning” is used for the less severe hazards.
• There will only be one signal word on the label no matter how many hazards a chemical may have.
Hazard Statements

• Used to describe the nature of the hazard(s) of a chemical, including, where appropriate, the degree of hazard.
Precautionary Statements

• Used to describe recommended measures that should be taken to minimize or prevent adverse effects resulting from exposure to the hazardous chemical or improper storage or handling.
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<th>Health Hazard</th>
<th>Flame</th>
<th>Exclamation Mark</th>
<th>Flame Over Circle</th>
<th>Environment (Non-Mandatory)</th>
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<tr>
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<td>Aquatic Toxicity</td>
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<td>Mutagenicity</td>
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<td>Reproductive Toxicity</td>
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<tr>
<td>Respiratory Sensitizer</td>
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<td>Organic Peroxides</td>
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<tr>
<td>Gas Cylinder</td>
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<td>Gases Under Pressure</td>
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<td>Eye Damage</td>
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</tr>
<tr>
<td></td>
<td>Corrosive to Metals</td>
<td>Organic Peroxides</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
This pictogram depicts a human “bust”, with a white fractured star in the middle, inside a red diamond:

**Health Hazards Descriptions:**

- Carcinogen
- Mutagenicity
- Reproductive Toxicity
- Respiratory Sensitivity
- Target Organ Toxicity
- Aspiration Toxicity
This pictogram depicts a flame with a solid black stripe underneath, inside a red diamond:

**Flame Description:**
- Flammables
- Pyrophorics
- Self-Heating
- Emits Flammable Gas
- Self-Reactives
- Organic Peroxides
This pictogram depicts an Exclamation Mark, inside a red diamond:

Exclamation Mark Description:
• Irritant (skin and eye)
• Skin Sensitizer
• Acute Toxicity (harmful)
• Narcotic Effects
• Respiratory Tract Irritant
• Hazardous to Ozone Layer (Non Mandatory)
This pictogram depicts a circle, with a flame on top of the circle, inside a red diamond:

Flame Over Circle Description:

• Oxidizers
This pictogram depicts a cylinder inside a red diamond:

Gas Cylinder Description:
- Gases under Pressure
This pictogram depicts a human hand and a piece of metal, both with beakers pouring liquid on each, inside a red diamond:

**Corrosion Description:**
- Skin Corrosion/ burns
- Eye Damage
- Corrosive to Metals
This pictogram depicts an exploding bomb, with black lines and projectiles, inside a red diamond:

**Exploding Bomb Description:**
- Explosives
- Self-Reactives
- Organic Peroxides
Pictogram: Skull and Crossbones

This pictogram depicts a human skull laid over crossed bones, inside a red diamond:

Skull & Crossbones Description:
- Acute Toxicity (fatal or toxic)
This pictogram depicts a dead fish next to a tree, inside a red diamond:

Environment Description:
• Aquatic Toxicity
Example 1 and 1A: Simple GHS Label information

**Example 1A – Simple Label**

- **Substance**
  - HS85
  - Batch number: 85L6543

- **Pictogram**

- **Signal word and Hazard Statement**
  - Warning
  - Harmful if swallowed
  - Wash hands and face thoroughly after handling. Do not eat, drink or smoke when using this product. Dispose of contents/container in accordance with local, state and federal regulations.

- **Precautionary Statements**

- **Response**
  - First aid:
    - If swallowed: Call a doctor if you feel unwell. Rinse mouth.

- **Manufacturer Name, Address, and Phone number**
  - GHS Example Company, 123 Global Circle, Anyville, NY 130XX
  - Telephone (888) 888-8888
Example 1B – Other Simple Label

SAMPLE LABEL

Product Identifier

Company Name
Street Address
City
Postal Code
Country
Emergency Phone Number

Supplier Identification

Keep container tightly closed. Store in a cool, well-ventilated place that is locked. Keep away from heat/sparks/open flame. No smoking. Only use non-sparking tools. Use explosion-proof electrical equipment. Take precautionary measures against static discharge. Ground and bond container and receiving equipment. Do not breathe vapors. Wear protective gloves. Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling. Dispose of in accordance with local, regional, national, international regulations as specified.

In Case of Fire: use dry chemical (BC) or Carbon Dioxide (CO2) fire extinguisher to extinguish.

First Aid
If exposed call Poison Center. If on skin (or hair): Take off immediately any contaminated clothing. Rinse skin with water.

Hazard Pictograms

Signal Word
Danger

Highly flammable liquid and vapor. May cause liver and kidney damage.

Hazard Statements

Precautionary Statements

Supplemental Information

Directions for Use

Fill weight:
Lot Number:
Gross weight:
Fill Date:
Expiration Date:

Pacific Comp
A CopperPoint Insurance Company
Example 2A: This example demonstrates a complex label

**Pictograms**

**Precautionary Statement**

**Signal word and Hazard Statement**

**Response**

**Manufacturer Name, Address, and Phone number**

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**OXI252**

(disodiumflammable)

CAS #: 111-11-11xx

**Danger**

May cause fire or explosion; strong oxidizer
Causes severe skin burns and eye damage

Keep away from heat. Keep away from clothing and other combustible materials. Take any precaution to avoid mixing with combustibles. Wear protective neoprene gloves, safety goggles and face shield with chin guard. Wear fire/flame resistant clothing. Do not breathe dust or mists. Wash arms, hands and face thoroughly after handling.

Store locked up. Dispose of contents and container in accordance with local, state and federal regulations.

**First aid:**

IF ON SKIN (or hair) or clothing: Rinse immediately contaminated clothing and skin with plenty of water before removing clothes. Wash contaminated clothing before reuse.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

IF INHALED: Remove person to fresh air and keep comfortable for breathing.

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

Immediately call poison center.

Specific Treatment: Treat with doctor-prescribed burn cream.

**Fire:**

In case of fire: Use water spray. In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion.

Great Chemical Company, 55 Main Street, Anywhere, CT 064XX

Telephone (888) 777-8888
Safety Data Sheets (SDS)
What does the new format for the SDS contain?

Mandatory:

1. Product Identifier
2. Hazard identification
3. Composition/information on ingredients
4. First-aid measures
5. Firefighting measures
6. Accidental release measures
7. Handling and storage
8. Exposure controls and personal protection
9. Physical and chemical properties
10. Stability and reactivity
11. Toxicological information
12. Ecological information
13. Disposal considerations
14. Transport information
15. Regulatory information
16. Other information
SDS Section 1: Identification

• This section identifies the chemical on the SDS as well as the recommended uses. It also provides the essential contact information of the supplier.
SDS Section 2: Hazard(s) Identification

- This section identifies the hazards of the chemical presented on the SDS and the appropriate warning information associated with those hazards.
SDS Section 3: Composition - information on ingredients

- This section includes information on substances, mixtures, and all chemicals where a trade secret is claimed.
This section describes the initial care that should be given by untrained responders to an individual who has been exposed to the chemical.
SDS Section 5: Fire-Fighting Measures

- This section provides recommendations for fighting a fire caused by the chemical.
SDS Section 6: Accidental Release Measures

- This section lists emergency procedures; protective equipment; proper methods of containment and cleanup.
SDS Section 7: Handling and Storage

• This section provides guidance on the safe handling practices and conditions for safe storage of chemicals.
SDS Section 8: Exposure Controls/Personal Protection

- This section indicates the exposure limits, engineering controls, and personal protective measures that can be used to minimize worker exposure.
This section identifies physical and chemical properties associated with the substance or mixture.
SDS Section 10: Stability and Reactivity

- This section describes the reactivity hazards of the chemical and the chemical stability information.
SDS Section 11: Toxicological Information

- This section identifies toxicological and health effects information or indicates that such data are not available.
SDS Section 12: Ecological Information (non-mandatory)

- This section provides information to evaluate the environmental impact of the chemical(s) if it were released to the environment.
This section provides guidance on proper disposal practices, recycling or reclamation of the chemical(s) or its container, and safe handling practices.
This section provides guidance on classification information for shipping and transporting of hazardous chemical(s) by road, air, rail, or sea.
SDS Section 15: Regulatory Information (non-mandatory)

- This section identifies the safety, health, and environmental regulations specific for the product that is not indicated anywhere else on the SDS.
SDS Section 16: Other Information

- This section indicates when the SDS was prepared or when the last known revision was made. The SDS may also state where the changes have been made to the previous version. You may wish to contact the supplier for an explanation of the changes. Other useful information also may be included here.
BIBLIOGRAPHY


Disclaimer: This powerpoint provides a general overview of the safety data sheet requirements in the Hazard Communication Standard (see 29 CFR 1910.1200(g) and Appendix D of 29 CFR 1910.1200). It does not alter or determine compliance responsibilities in the standard or the Occupational Safety and Health Act of 1970. Since interpretations and enforcement policy may change overtime, the reader should consult current OSHA interpretations and decisions by the Occupational Safety and Health Review Commission, the source materials used in the preparation of this presentation from OSHA and the United Nations Economic Commission for Europe (UNECE) cited in this Bibliography, and the courts for additional guidance on OSHA compliance requirements. Please note that states with OSHA-approved state plans may have additional requirements for chemical safety data sheets, outside of those outlined in this manual. For more information on those standards, please visit: http://www.osha.gov/dcsp/osp/statestandards.html.