Hazard Communication and New Globally Harmonized System (GHS)
OSHA Video: Revised HazCom Standard

Video Length: 5:42

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PROTECTING OUR WORKFORCE FOR FUTURE GENERATIONS
# Effective Dates – HazCom 2012

<table>
<thead>
<tr>
<th>Effective Completion Date</th>
<th>Requirement(s)</th>
<th>Who</th>
</tr>
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<td>December 1, 2013</td>
<td>Train employees on the new label elements and SDS format.</td>
<td>Employers</td>
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<td>Comply with all modified provisions of this final rule, except:</td>
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<td>Transition Period</td>
<td>Comply with either 29 CFR 1910.1200 (this final standard), or the current standard, or both</td>
<td>All chemical manufacturers, importers, distributors and employers</td>
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</table>

*This date coincides with the European Union implementation date for classification of mixtures.*
EMPLOYER RESPONSIBILITIES
Employer Responsibilities

• Perform a hazard determination to identify all chemicals that present a physical hazard

Chemical is:
- flammable
- explosive
- an oxidizer
- an organic peroxide
- a compressed gas
- unstable-reactive or water-reactive
- or a health hazard (the chemical produces an acute or chronic health risk).
Employer Responsibilities

• Prepare an inventory of the chemicals that lists the identity of the chemicals, the hazards they present and how they’re stored in the workplace.

• Obtain SDS’s and labels for each hazardous chemical, if not provided by the manufacturer, importer or distributor.
Employer Responsibilities

• Develop and implement a written hazard communication program which includes the location(s) of SDS’s, procedures for proper labeling and employee training on the hazards of the chemicals and how to read and use SDS’s and label information.

• Communicating hazard information to their employees through labels, SDS’s and formal training programs.
NOTABLE CHANGES
Notable Changes

• Using a “specification” approach rather than a “performance-oriented” approach
  » “Hazard classification” rather than “hazard determination”

• Labels are more defined and will now require:
  » Product identifier
  » Pictogram
  » Signal word
  » Hazard statement(s)
  » Precautionary statement(s)
  » Name, address, and telephone number
Notable Changes

• “Safety Data Sheet” (rather than “material safety data sheet”) uses a 16-section format.

• Guidance in the GHS (such as decision logics in criteria) has been removed to streamline provisions.
MODIFIED HAZARD COMMUNICATION STANDARD
How Hazard Communication Works

- **Chemical Manufacturers and Importers** classify the hazards of chemicals they produce or import, and prepare labels and safety data sheets based on the classifications.

- **All Employers** receive labeled containers and safety data sheets with shipped chemicals.

- **All Employers** must prepare a written hazard communication program, including a list of the hazardous chemicals in the workplace.

- **All containers of hazardous chemicals labeled**

- **Safety data sheets** for all hazardous chemicals

- **Workers trained** on program elements, hazards, and protective measures

- **Keep Information Up-to-Date**

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PROTECTING OUR WORKFORCE FOR FUTURE GENERATIONS
The HazCom Regulation

a) Purpose
b) Scope and Application
c) Definitions
d) Hazard Classification
e) Written Hazard Communication Program
f) Labels and Other Forms of Warning
g) Safety Data Sheets
h) Employee Information and Training
i) Trade Secrets
j) Effective Dates

Appendices A–F
Appendices

• Appendix A, Health Hazard Criteria (Mandatory) (NEW)
• Appendix B, Physical Hazard Criteria (Mandatory) (NEW)
• Appendix C, Allocation of Label Elements (Mandatory) (NEW)
• Appendix D, Safety Data Sheets (Mandatory) (NEW)
• Appendix E, Definition of “Trade Secret” (Mandatory)
• Appendix F, Guidance for Hazard Classifications re: Carcinogenicity (Non-Mandatory) (NEW)
a) Purpose

<table>
<thead>
<tr>
<th>HazCom 1994</th>
<th>HazCom 2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>• All hazards to be <em>evaluated</em>.</td>
<td>• All hazards to be <em>classified</em>.</td>
</tr>
<tr>
<td>• Comprehensive hazard communication program to transmit information.</td>
<td>• Other provisions the same, except OSHA added that the rule is consistent with Revision 3 of the GHS.</td>
</tr>
<tr>
<td>• Preempt state laws.</td>
<td>• Slight clarifying modification was made to the language regarding preemption.</td>
</tr>
</tbody>
</table>
## b) Scope and Application

<table>
<thead>
<tr>
<th>HazCom 1994</th>
<th>HazCom 2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>• All chemicals known to be present are covered.</td>
<td>• Minimal changes except to conform terminology, and remove reference to</td>
</tr>
<tr>
<td>• Practical accommodations for special situations.</td>
<td>current Appendix E which has been deleted from the standard and a</td>
</tr>
<tr>
<td>• Addresses interface with other Federal laws.</td>
<td>clarification on Federalism.</td>
</tr>
</tbody>
</table>

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PROTECTING OUR WORKFORCE FOR FUTURE GENERATIONS
### c) Definitions

<table>
<thead>
<tr>
<th>HazCom 1994</th>
<th>HazCom 2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Includes specific definitions for terms used in the standard, as well as all physical hazards.</td>
<td>• Physical hazard definitions removed from paragraph (c), and placed in a new Appendix B on physical hazard classification criteria.</td>
</tr>
<tr>
<td></td>
<td>• Following terms are also deleted: flashpoint (methods included in Appendix B), hazard warning, material safety data sheets.</td>
</tr>
<tr>
<td></td>
<td>• Some definitions are revised to be GHS-consistent.</td>
</tr>
<tr>
<td></td>
<td>• New definitions added for classification.</td>
</tr>
</tbody>
</table>
## d) Hazard Classification

<table>
<thead>
<tr>
<th>HazCom 1994</th>
<th>HazCom 2012</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Performance-oriented</strong></td>
<td><strong>Specific and detailed</strong></td>
</tr>
<tr>
<td>» Definitions in paragraph (c), Appendices A and B</td>
<td>» Concept of “classification” vs. determination in current rule</td>
</tr>
<tr>
<td>» Appendix B—parameters for evaluating data</td>
<td>» Each hazard class has detailed criteria to apply to data on the chemical</td>
</tr>
<tr>
<td>» “Floor” of chemicals considered hazardous</td>
<td>» No floor; based on weight of evidence</td>
</tr>
<tr>
<td>» “One study” rule</td>
<td>» Mixture rules are specific to each hazard class</td>
</tr>
<tr>
<td>» Standardized mixture cut-off rules</td>
<td></td>
</tr>
</tbody>
</table>
HazCom 1994: Mixtures

• For mixtures, the approach for health hazards is to base it on a percentage cut-off of 0.1% for carcinogens, and 1% for all other effects.
HazCom 2012: Mixtures

- The GHS has a tiered approach to mixtures, with each health hazard class having a specific approach.
  - Step 1: Use available test data on the mixture as a whole to classify the mixture based on the substance criteria.
  - Step 2: Use bridging principles to extrapolate from other data (e.g., dilution principle).
  - Step 3: Estimate hazards based on known information regarding the ingredients of the mixture (cut-offs may be applied).
  - Except for chronic health hazards.

- Chemical manufacturers and importers may rely on the information provided in ingredient SDSs unless they have a reason to know that it is inaccurate.
### e) Written HazCom Program

<table>
<thead>
<tr>
<th>HazCom 1994</th>
<th>HazCom 2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Employers must have a written program describing how the rule will be implemented, including a list of hazardous chemicals, methods for informing employees about non-routine tasks.</td>
<td>• No changes.</td>
</tr>
<tr>
<td></td>
<td>• Employers will have to make sure the program is current when the new provisions are implemented (e.g., list of hazardous chemicals may have to be updated).</td>
</tr>
<tr>
<td>f) Labels and Other Forms of Warning</td>
<td></td>
</tr>
<tr>
<td>--------------------------------------</td>
<td>--</td>
</tr>
<tr>
<td><strong>HazCom 1994</strong></td>
<td><strong>HazCom 2012</strong></td>
</tr>
<tr>
<td>• Shipped containers to be labeled with identity, appropriate hazard warnings, and responsible party.</td>
<td>• Shipped containers to be labeled with product identifier; signal word; hazard statement(s); pictograms; precautionary statements; and responsible party.</td>
</tr>
<tr>
<td>• Performance-oriented, specifics left to discretion of chemical manufacturer or importer.</td>
<td>• Specifies information by hazard class and category.</td>
</tr>
</tbody>
</table>
Approach to Labels

• The final rule—like the GHS—is a specification approach to labels. In Appendix C, OSHA has indicated by hazard class and hazard category the label elements that must be on the label.

• Appendix C is basically a cookbook approach to labeling—once classification of the hazards is completed, Appendix C is to be consulted to determine how to convey the required information.
Label Requirements – Shipped Containers

- Product identifier
- Signal word
- Hazard statement(s)
- Pictogram(s)
- Precautionary statement(s)
- Name, address, and phone number of the responsible party
HCS Pictograms and Hazards

<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</td>
</tr>
<tr>
<td>Mutagenicity</td>
<td>Pyrophorics</td>
<td>(skin and eye)</td>
</tr>
<tr>
<td>Reproductive Toxicity</td>
<td>Self-Heating</td>
<td>Skin Sensitizer</td>
</tr>
<tr>
<td>Respiratory Sensitizer</td>
<td>Emits Flammable Gas</td>
<td>Acute Toxicity</td>
</tr>
<tr>
<td>Target Organ Toxicity</td>
<td>Self-Reactives</td>
<td>(harmful)</td>
</tr>
<tr>
<td>Aspiration Toxicity</td>
<td>Organic Peroxides</td>
<td>Narcotic Effects</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Respiratory Tract</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Irritant</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hazardous to</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ozone Layer</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(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>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flame over Circle</td>
<td>Environment</td>
<td>Skull and</td>
</tr>
<tr>
<td></td>
<td>(Non Mandatory)</td>
<td>Crossbones</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Oxidizers</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Aquatic Toxicity</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Acute Toxicity (fatal or toxic)</td>
<td></td>
</tr>
</tbody>
</table>

We’ll go into greater detail of the new GHS pictograms later in this program.
Red vs. Black Borders

• OSHA is requiring red borders regardless of the shipment’s destination.

• The red borders increase comprehensibility.

• Blank red diamonds are not permitted on a label.
Updating Labels

• OSHA proposed to require labels to be updated within three months of getting new and significant information about the hazards.

• The final rule requires containers shipped six months after the information is available to be labeled accordingly.
Label Example

New style Label (GHS)

Xyz... Chemical

WARNING

Flammable Liquid and vapor
Harneful if swallowed
May cause damage to organs (liver)
May cause damage to organs through prolonged or repeated exposure (heart)
Suspected of damaging fertility

Keep away from heat, sparks, open flames and hot surfaces - No smoking. Do not breathe vapors. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use protective equipment as required. Wear protective gloves and eye protection. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Keep container tightly closed. Ground container and receiving equipment. Use explosion-proof electrical, ventilating, lighting equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Store locked up in a well ventilated place. Keep cool. Dispose of contents and container in accordance with local, state and federal regulations.

First Aid:
If swallowed: Call a doctor if you feel unwell, Rinse mouth.
If on skin or hair: Remove immediately all contaminated clothing, Rinse skin with water.
If exposed or if you feel unwell: call a doctor.

Fire:
In case of fire: Use water spray foam, dry chemical or carbon dioxide (CO₂) for extinction

GHS Company, 123 Global Drive, Cincinnati, OH

telephone (800) 555-8888
### g) Safety Data Sheets

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>• Specifies what information is required, but chemical manufacturer or importer can use whatever format or order of information they want.</td>
<td>• Mandates 16-section SDS headings, order of information, and what information is to be provided under the headings.</td>
</tr>
<tr>
<td></td>
<td>• Will not enforce sections 12-15 that require information outside OSHA’s jurisdiction.</td>
</tr>
</tbody>
</table>
16-Section Safety Data Sheet

1. Identification of the substance or mixture and of the supplier
2. Hazards identification
3. Composition/information on ingredients Substance/Mixture
4. First aid measures
5. Firefighting measures
6. Accidental release measures
7. Handling and storage
8. Exposure controls/personal protection
9. Physical and chemical properties
10. Stability and reactivity
11. Toxicological
12. Ecological information (non mandatory)
13. Disposal considerations (non mandatory)
14. Transport information (non mandatory)
15. Regulatory information (non mandatory)
16. Other information including information on preparation and revision of the SDS
Appendix D

• Specifies the minimum information to be included in each of the 16 sections.

• Two revisions in this information are in the final rule:
  » ACGIH TLVs continue to be required on the SDS.
  » Information regarding carcinogenicity classifications by IARC and NTP also continue to be required.
<table>
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<th>h) Employee Information and Training</th>
</tr>
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<td><strong>HazCom 1994</strong></td>
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</table>
| • Requires employee information and training before a worker is exposed to the hazardous chemicals in the workplace, and whenever the hazard changes. | • Clarifies that the labels on shipped containers and workplace labels must be explained, as well as SDS format.  
• Workers will have to be trained on the new label and SDS formats before all the provisions of the rule are effective. |
Training

• Employers shall train employees regarding the new label elements and safety data sheets format by:

December 1, 2013
Training

- Label Elements
  - Train employees on the type of information that the employee would expect to see on the new labels.
  - How they might use that information.
    - Product identifier, Signal word, Hazard statement(s), Pictogram(s), Precautionary statement(s), and Name, address and phone number of the responsible party.
    - General understanding how the elements interact.
      - For example, explain there are two signal words: Danger means a more severe hazard within a hazard class. Warning is for the less severe hazard.
Training

• Safety Data Sheet Format
  » Train the employees on the standardized 16 section format and the type of information they would find in the various sections.
### i) Trade Secrets

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<th>HazCom 2012</th>
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<tr>
<td>• Allows specific chemical identity to be protected when it is a legitimate trade secret.</td>
<td>• Process remains the same.</td>
</tr>
<tr>
<td>• Specifies conditions for protection, and for release when there is a safety and health need for the information.</td>
<td>• Percentage of a substance in a mixture is also considered to be a type of trade secret subject to the provisions in the rule.</td>
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*This date coincides with the European Union implementation date for classification of mixtures.*
Approach to Other Standards

• Many other OSHA standards contain criteria related to defining hazards, as well as other provisions that rely on those criteria.
• OSHA undertook a comprehensive review of its rules to identify what needed to be changed.
• OSHA has proposed modifications to all of those standards that it determined needed to be consistent with the GHS.
Health Standards

• The substance-specific standards generally pre-date the HCS, and do not have a comprehensive approach to hazard communication.

• The final rule references HazCom 2012 in each of these standards to ensure they have all the protections of the rule.
Health Standards

• In addition, OSHA updated the provisions regarding what is to be communicated to workers to ensure the health effects are consistent with the GHS criteria.

• Regulated area signs will need to be updated to reflect the new language.

• Employers have until June 1, 2016 to update the signs.
## Substance-Specific Health Standards

<table>
<thead>
<tr>
<th>Standard</th>
<th>Substance</th>
<th>Original signs</th>
<th>Final Changes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1910.1001</td>
<td>Asbestos</td>
<td>DANGER ASBESTOS CANCER AND LUNG DISEASE HAZARD AUTHORIZED PERSONNEL ONLY RESPIRATORS AND PROTECTIVE CLOTHING ARE REQUIRED IN THIS AREA</td>
<td>DANGER ASBESTOS MAY CAUSE CANCER CAUSES DAMAGE TO LUNGS AUTHORIZED PERSONNEL ONLY WEAR RESPIRATORY PROTECTION AND PROTECTIVE CLOTHING IN THIS AREA</td>
</tr>
<tr>
<td>1915.1001</td>
<td>Regulated areas Where the use of respirators and protected clothing is required</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Health Standards

- Asbestos (1910.1001; 1926.1101; 1915.1001)
- 13 Carcinogens (1910.1003)
- Vinyl Chloride (1910.1017)
- Inorganic Arsenic (1910.1018)
- Lead (1910.1025; 1926.62)
- Chromium (VI) (1910.1026; 1926.1126; 1915.1026)
- Cadmium (1910.1027; 1926.1127)
- Benzene (1910.1028)
- Coke Oven Emissions (1910.1029)
- Cotton Dust (1910.1043)
- 1,2-dibromo-3-chloropropane (1910.1044)
- Acrylonitrile (1910.1045)
- Ethylene Oxide (1910.1047)
- Formaldehyde (1910.1048)
- Methyleneedianiline (1910.1050; 1926.60)
- 1,3-Butadiene (1910.1051)
- Methylene Chloride (1910.1052)
- Occupational exposure to hazardous chemicals in laboratories (1910.1450)
Safety Standards

• OSHA updated a number of safety standards to be consistent with the criteria in the HazCom 2012.
• The manner in which this was done depended on the provisions of the standard being considered, and approaches varied.
• In some cases, it was decided that changes could not be made at this time given the source of the standard or other constraints.
• OSHA sought to minimize the impact on the scope or substantive provisions of the standards that were updated.
## Safety Standards
### PSM 1910.119(a)(1)(ii)

<table>
<thead>
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<th>HazCom 2012</th>
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</thead>
<tbody>
<tr>
<td>• A process which involves a flammable liquid or gas (as defined in 1910.1200(c) of this part) on site in one location, in a quantity of 10,000 pounds (4535.9 kg) or more except for:</td>
<td>• A process which involves a <em>Category 1</em> flammable gas (as defined in 1910.1200 (c)) or a flammable liquid <em>with a flashpoint below 100 °F (37.8 °C)</em> on site in one location, in a quantity of 10,000 pounds (4535.9 kg) or more except for:</td>
</tr>
</tbody>
</table>
Safety Standards

- Flammable Liquids (1910.106; 1926.52)
- Spray finishing using flammable and combustible materials (1910.107)
- Process safety management of highly hazardous chemicals (1910.119; 1926.64)
- Hazardous waste operations and emergency response (1910.120; 1926.65)
- Dipping and coating operations: Coverage and definitions (1910.123)
- General requirements for dipping and coating operations (1910.124)
- Additional requirements for dipping and coating operations that use flammable liquids or liquids with flashpoints greater than 199.4 °F (93 °C) (1910.125)
- Welding, Cutting, and Brazing (1910.252)
The Workplace

• For Employers
  » Initial employee training on the label elements
  » Minimal training on new SDS format
  » Continue to maintain the updated SDSs
  » Review current hazard communication program and update as necessary

• For Manufacturers
  » Initial start-up costs associated with reclassification, producing new labels, safety data sheets, training
IDENTIFY CHEMICALS AND THEIR HAZARDS
Types of Chemical Hazards

• There are basically two types of Hazards
  1. Physical
  2. Health

The first rule of chemical safety is…

"Know what you are working with and how to protect yourself and others"
What are Physical Hazards?

- Chemicals are classified as having **Physical Hazards** if they are:
  - Explosive
  - Compressed Gas
  - Combustible Liquids
  - Flammable
  - Unstable
  - Water Reactive
  - Oxidizers
What are Health Hazards?

Chemicals are classified as being a **Health Hazard** if they:

- Can cause cancer
- Are poisonous (toxic)
- Cause harm to your skin, internal organs, or nervous system
- Are corrosive - such as acids
- Cause allergic reactions after repeated exposure
GHS Pictograms

PROTECTING OUR WORKFORCE FOR FUTURE GENERATIONS
GHS Pictograms

- New to the standard is the addition of pictograms to denote the hazards of chemicals.
- These can be used to inform workers of the hazards on labels or Safety Data Sheets or
- As warnings throughout work locations
GHS Hazard Pictograms

Health Hazard

Used to denote:

- Carcinogen (1A, 1B, 2)
- Mutagenicity (1A, 1B, 2)
- Reproductive Toxicity (1A, 1B, 2)
- Respiratory Sensitizer (1)
- Target Organ Toxicity (1, 2)
- Aspiration Toxicity (1, 2)
GHS Hazard Pictograms

Flame Over Circle

Used to denote:

• Oxidizer
GHS Hazard Pictograms

Exclamation Mark

Used to denote:

- Irritant - skin and eye (2A)
- Dermal Sensitizer (1)
- Acute Toxicity (4)
- Narcotic Effects (3)
- Respiratory Tract Irritant (3)
- Hazardous to Ozone Layer (Non-Mandatory)
GHS Hazard Pictograms

Gas Cylinder

Used to denote:

• Gases Under Pressure
GHS Hazard Pictograms

Corrosion

Used to denote:
- Skin Corrosion/Burns (1A, 1B, 1C)
- Eye Damage (1)
- Corrosive to Metals
GHS Hazard Pictograms

Exploding Bomb

Used to denote:

- Explosive (1.1, 1.2, 1.3, 1.4)
- Self-Reactive (Type A, B)
- Organic Peroxide (Type A, B)
GHS Hazard Pictograms

**Flame**

Used to denote:

- Flammable (Solids 1, 2; Liquids 1, 2, 3)
- Pyrophoric (Type B, C, D, F)
- Self-Heating (Type B, C, D, F)
- Emits Flammable Gas (Type B, C, D, F)
- Self-Reactive (Type B, C, D, E, F)
- Organic Peroxide (Type B, C, D, F)
GHS Hazard Pictograms

Skull and Crossbones

Used to denote:

- Acute Toxicity - fatal or toxic (1, 2, 3)
GHS Hazard Pictograms

Environment (Non-Mandatory)

Used to denote:

• Acute Aquatic Toxicity (1)
• Chronic Aquatic Toxicity (1, 2)
SAFETY DATA SHEET

PROTECTING OUR WORKFORCE FOR FUTURE GENERATIONS

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Safety Data Sheet (SDS)

• Employers must prepare an inventory of all hazardous chemicals in the workplace. When the list is complete, it should be checked against the collected SDSs that the employer has been sent.

• If there are hazardous chemicals used for which no SDS has been received, the employer must contact the supplier, manufacturer, or importer to obtain the missing SDS.
Safety Data Sheet (SDS)

• The new Standard requires that the new SDS contain specific chemical safety information, it does now require that the information on the SDS be presented in a specific format.
SDS Format

- OSHA recently recommended that manufacturers, importers and distributors begin using the more comprehensive Global Harmonizing System (GHS) format.
The new GHS format is as follows:

- **Section 1, Identification;**

- **Section 2, Hazards Identification;**

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• Section 2, Hazards Identification;

• Section 3, Composition/Information on Ingredients;

• Section 4, First Aid Measures;

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• Section 4, First Aid Measures;

• Section 5, Fire-Fighting Measures;

• Section 6, Accidental Release Measures;

4.1.2 In case of skin contact:
Consult a doctor. Flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes.

4.1.3 In case of eyes contact:
Consult a doctor. Flush eyes with plenty of water for at least 15 mins, occasionally lifting the upper and lower lids.

4.1.4 In case of ingestion:
Consult a doctor. Induce vomiting. If conscious and alert rinse mouth and drink 2–4 cupfuls of milk or water. Never give anything by mouth to an unconscious person.

4.2 Most important symptoms and effects, both acute and delayed
Harmful if swallowed. Toxic in contact with skin. Toxic if inhaled.

4.3 Indication of any immediate medical attention and special treatment needed
Immediately call a POISON CENTER or doctor/physician.

Section 5 FIRE-FIGHTING MEASURES

5.1 Extinguishing media:
Suitable extinguishing media: Carbon dioxide. Alcohol resistant foam. Dry chemical powder. Use water spray to cool containers.

Unsuitable extinguishing media: n/a.

5.2 Special hazards arising from the substance or mixture:
Vapour may travel considerable distance to source of ignition and flash back. Fire or intense heat may cause violent rupture of packages. Flammable liquid and vapour.

5.3 Advice for fire-fighters:
Wear self-contained breathing apparatus. Wear protective clothing to prevent contact with skin and eyes.

Section 6 ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures:
Refer to section 8 of SDS for personal protection details.

6.2 Environmental precautions:
Do not discharge into drains or rivers. Contain the spillage using bunding.

6.3 Methods for containment and cleaning up:
Mix with sand or vermiculite. Using non-sparking tools, scoop solids into a DRY metal container, label properly and cover. Remove any sources of flame or sparks.

6.4 Reference to other sections:
Refer to section 8 of the SDS

6.5 Additional information:
Not available.
SDS Format
(4th page)

- Section 7, Handling and Storage;
- Section 8, Exposure Control/Personal Protection;
- Section 9, Physical and Chemical Properties;

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• Section 9, Physical and Chemical Properties;

• Section 10, Stability and Reliability;
SDS Format (6th page)

- Section 11, Toxicological Information;
- Section 12, Ecological Information;
- Section 13, Disposal Considerations;
- Section 14, Transport Information;

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• Section 14, Transport Information;

• Section 15, Regulatory Information;

• Section 16, Other Information, (including date of preparation or last revision)
EMPLOYEE TRAINING
Employee Training

Training must be conducted when an employee is initially assigned to the job or whenever a new hazard is introduced into the work area.
Minimum training requirements include:

1. HAZCOMM standard
2. Components of HAZCOMM program
3. Operations involving chemical hazards
4. Location of written program, chemical inventories and the SDS’s
Minimum training requirements include:

5. Details of HAZCOMM program implementation
   - how to read labels
   - how to read SDS’s
   - obtaining information

6. Hazards of chemical in their work environment
Minimum training requirements include:

7. How employees can protect themselves from hazards
8. Protection measures such as engineering controls, work practices and PPE
9. How to detect the presence of hazards
Any Questions?

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