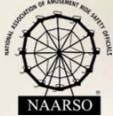


## HCS to GHS OSHA 1910.1200 Subpart Z

Presented by Ken Berryhill and Jeff Alberts

30th Annual Ride Inspection Safety Forum  
January 2017



NAARSO

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## Purpose of HCS

- The purpose of the standard is to make sure that the hazards of chemicals are evaluated
- That information concerning their hazards is communicated to employers and employees

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### Scope of HCS

- Applies to general industry, shipyard, marine terminals, longshoring, and construction employment and covers chemical manufacturers, importers, employers, and employees exposed to chemical hazards.
- Any substance or material capable of posing an unreasonable risk to health safety and/or property if not handled, transported, or stored properly

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### Exemptions

- Any hazardous waste subject to regulations issued under that Act by the Environmental Protection Agency;
- Tobacco or tobacco products;
- Wood or wood products, that the only hazard they pose to employees is the potential for flammability or combustibility (wood treated with covered chemicals are **not** exempt);
- Drugs, cosmetics, consumer products, nuisance particulates that pose no hazard, radiation, and biological agents

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### OSHA Requirements

- **Written program**
  - The employer must make the written program available, upon request, to:
    - Employees and their designated representatives
  - Where work is carried out at more than one location, the program may be kept at the main location
  - Requirements include:
    - Management of Safety Data Sheets
    - Labeling, including secondary labels
    - Training
    - List of hazardous chemicals

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### Employee Training

- Employers must provide employees information and training on hazardous chemicals in their work area:
  - At the time of their initial assignment
  - Whenever a new physical or health hazard the employees have not previously been trained about is introduced into their work area
- Training may cover categories of hazards

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## Employee Training

- Employee training shall include **at least**:
  - The means to detect the presence or release of a hazardous chemical in the work area
  - The physical and health hazards of chemicals in the work area
  - Measures employees can take to protect themselves
  - Details of the employers specific program

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## Why did HCS Change?

- To align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS) adopted by 67 nations
- To provide a common and coherent approach to classifying chemicals
- Reduce confusion and increase understanding of the hazards
- Facilitate training
- Help address literacy problems



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## Notable changes

- Using a “specification” approach rather than a “performance-oriented” approach
- “Hazard classification” rather than “hazard determination” through use of Appendices.
- Labels are more defined and will now require:
  - Product identifier
  - Pictogram
  - Signal word
  - Hazard statement(s)
  - Precautionary statement(s)
  - Name, address, and telephone number

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### Notable changes, cont.

- “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.
- May be provided as a separate document to assist compliance later.

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### Health Hazard



- Carcinogen
- Mutagenicity
- Reproductive Toxicity
- Target Organ Toxicity
- Respiratory Sensitizer

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### Flame



- Flammables
- Pyrophorics
- Self-Heating
- Emits Flammable Gas
- Self-Reactives
- Organic Peroxides

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### Exclamation Mark



- If Skull and Cross Bones is listed for acute toxicity, this symbol will not be used.
- If Corrosive is used for skin/eye damage, this symbol will not be used.
- If Health Hazard is used for respiratory sensitization, this symbol will not be used for skin/eye irritation or skin sensitization

- Irritant (Skin and eyes)
- Skin Sensitizer
- Acute Toxicity (Harmful)
- Narcotic Effects
- Respiratory Tract Irritant
- Hazardous to Ozone layer (Non Mandatory)

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### Gas Cylinder



- Gasses under pressure

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### Corrosion



- Skin Corrosion/Burns
- Eye Damage
- Corrosive to Metals

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### Exploding Bomb



- Explosives
- Self-Reactives
- Organic Peroxides

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### Flame of Circle



- Oxidizers

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### Skull and Crossbones



- Acute Toxicity (Fatal or toxic)

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## Environment (Non-Mandatory)



- Aquatic Toxicity

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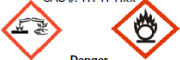
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## Label Example

OXI252  
(disodiumflammy)  
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) 777-9888

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## Label Requirements

- Which pictogram and signal word would be used with this hazard statement ?
  - Fatal if swallowed
- Danger



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### Label Requirements

- Which pictogram and signal word would be used with this hazard statement?
  - May intensify fire; oxidizer
- Warning 

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### Label Requirements

- Which pictogram and signal word would be used with this hazard statement?
  - Causes severe skin burns and eye damage
- Danger 

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### Label Requirements

- Which pictogram and signal word would be used with this hazard statement?
  - Extremely flammable material
- Danger 

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### Label Requirements

- Which pictogram and signal word would be used with this hazard statement?
  - May cause drowsiness or dizziness
- Warning 

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### Label Requirements

- Which pictogram and signal word would be used with this hazard statement?
  - May cause damage to organs through prolonged or repeated exposure
- Warning 

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### Label Requirements

- Which pictogram and signal word would be used with this hazard statement?
  - Contains gas under pressure
- Danger 

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### Label Requirements

- Which pictogram and signal word would be used with this hazard statement?
  - Explosive; severe projection hazard
- Danger 

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### Workplace Labeling

- OSHA is maintaining the approach used in the current HCS that allows employers to use workplace-specific labeling systems as long as they provide the required information.
- However, such workplace label systems may need to be updated to make sure the information is consistent with the new classifications.

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### Workplace Labeling

- NFPA/HMIS Systems (ratings v. classification)
  - With the new GHS system, the lower the categorization number, the greater the severity of the hazard. This is opposite of the way numbers and severity relate to each other under NFPA and HMIS systems.
  - The numbers in the new GHS system do not show up on the label, instead are used to determine what goes on the label. The numbers only appear on the SDS.
  - The numbers for the NFPA and HMIS systems appear on the labels and are used to communicate information about the hazard.

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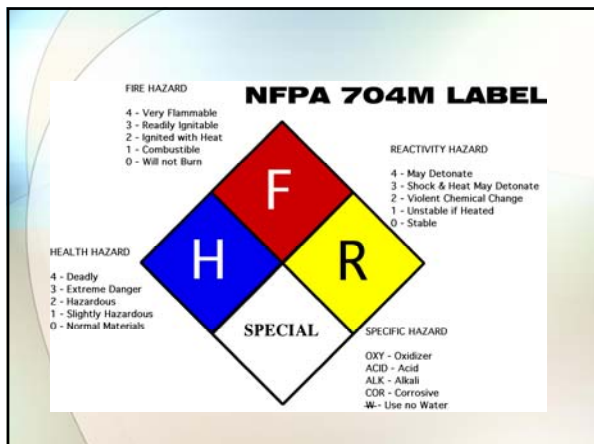
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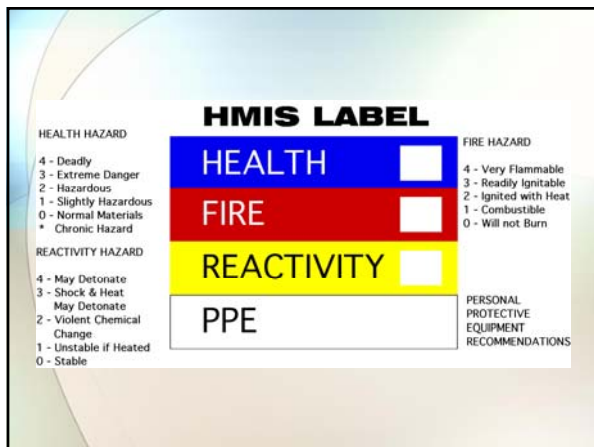
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- 16-Section Safety Data Sheet**
1. Identification of the substance or mixture and of the supplier
  2. Hazards identification
  3. Composition/information on ingredients Substance/Mixture
  4. First aid measures
  5. Firefighting measures
  6. Accidental 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

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## Safety Data Sheet Examples

[ITW Devcon](#)

[Ecolab](#)

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### Step 2 Inventory & Prioritize

## Inventory & Prioritize

- For each chemical, consider:
  - Where is the chemical being used?
  - What function does the chemical perform?
  - Is the chemical necessary in the process or product? Could the chemical be eliminated without adversely affecting product or process performance?
  - What are the hazards associated with the chemical and how could its use harm workers?
  - How are workers potentially exposed to the chemical (i.e., during manufacturing of the chemical or product, when using a product containing chemicals, when applying the chemical in a service industry, or during chemical disposal)?
- To identify priorities, consider:
  - What hazards should be eliminated or reduced first?
  - What uses of chemicals are of greatest concern?
  - What potential chemical exposures to workers are of greatest concern?
  - Could a chemical or process change help improve workplace safety and health?
  - Are the identified priorities consistent with the work plan for transitioning to safer chemicals?

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**Step 3**  
Identify

## Identify Alternatives

**Key Questions**

- Are there chemical alternatives that have been implemented in similar applications?
- Are there material changes or process changes that could replace the use of hazardous chemicals?
- Are there other businesses that are also seeking safer alternatives for the same chemical or a similar use of the chemical? Are there opportunities to collaborate?

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**Step 4**  
Assess & Compare

## Assess & Compare Alternatives

**Key Questions**

- To prioritize alternatives for further assessment, consider:
  - What are the performance requirements of the chemical or process?
  - Do specific alternatives present a high risk to worker safety and health?
- When assessing and comparing alternatives, consider:
  - What health and safety criteria (toxicological and physical properties) need to be compared?
  - Will workers experience changes to the performance of their work tasks when using the alternative, including any changes to the use of engineering controls, administrative controls, and PPE? Will workers experience changes in exposure when using the alternative? Will these changes present new/different hazards to workers?
  - What performance criteria need to be compared?
  - What costs need to be compared?

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**Step 7**  
Evaluate

## Evaluate

**Key Questions**

- Are workers benefiting from using the alternative?
- Have customers, supply chain partners, or others provided any feedback?
- How can the use of the alternative be improved?

[https://www.osha.gov/dsg/safer\\_chemicals/index.html](https://www.osha.gov/dsg/safer_chemicals/index.html)

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[www.OSHA.gov](http://www.OSHA.gov)

OSHA has developed an array of guidance materials

- Quick cards, OSHA briefs, booklets, small entity compliance guides
- Model training materials; Safety Data Preparation guidance; Hazard Classification Guidance
- SDS Electronic Form; Label Elements Application; Acute Toxicity Calculator
- <https://www.osha.gov/dsg/hazcom/index.html>

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**BEER**

**HAZARD WARNING:** DANGER: MAY BECOME IRRITABLE & PERVERSE. DO NOT ATTEMPT TO DRIVE OR OPERATE HEAVY MACHINERY.

**TARGET ORGANS** BLADDER STOMACH BRAIN KIDNEYS

**PERSONAL PROTECTIVE EQUIPMENT REQUIRED**

**DANGER** HAS BEEN KNOWN TO CAUSE IRRATIONAL BEHAVIOR IN LABORATORY RATS

BRADY MS1228 10/15/15 7.507

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