OSHA's Modified Hazard Communication Standard

Adoption of the Globally Harmonized System of Classification and Labeling of Chemicals

Objectives

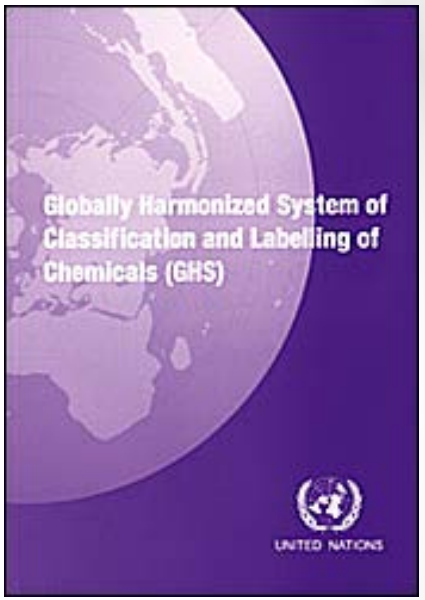
- Background of the GHS
- Overview of the changes to HCS
  - Pictograms
  - Label changes
  - Safety Data Sheet changes
- Estimated benefits
- Standard management & communication of changes

What is the GHS?

- The Globally Harmonized System is an international approach to label elements and safety data sheets (SDSs).
- It was negotiated in a multi-year process by hazard communication experts from many different countries and international organizations, and is based on major existing systems around the world.

What is the GHS?

- OSHA has modified the Hazard Communication Standard (HCS) to conform with the United Nations' "Globally Harmonized System of Classification and Labeling of Chemicals (GHS)", commonly referred to as The Purple Book.
  - 29 CFR 1910.1200



Why adopt the GHS?

- OSHA has modified the HCS to adopt the GHS to improve safety and health of workers through more effective communications on chemical hazards.
- The original standard was performance-oriented, allowing manufacturers to convey information on labels and material safety data sheets in whatever format they choose.

Why adopt the GHS?

- The standard was helpful in improving employee safety and health, but OSHA feels that a more standardized approach to classifying the hazards and conveying the information will be more effective and provide further improvements in the workplace.

Why adopt the GHS?

- The GHS provides a standardized approach, including:
  - detailed criteria for determining what hazardous effects a chemical poses
  - standardized label elements assigned by hazard class and category
  - harmonized format for safety data sheets to provide more efficient and effective access to information, thus increasing utility

Why adopt the GHS?

- This will enhance comprehension of the hazards, which will help to ensure appropriate handling and safe use of workplace chemicals.
- Countries around the world are adopting the GHS to ensure chemicals crossing borders will have consistent information, thus improving communication globally.

Required phase-in dates

Effective Completion Date	Requirement(s)	Who
December 1, 2013	Train employees on the new label elements and safety data sheet (SDS) format.	Employers
June 1, 2015 December 1, 2015	Compliance with all modified provisions of this final rule, except: The Distributor shall not ship containers labeled by the chemical manufacturer or importer unless it is a GHS label	Chemical manufacturers, importers, distributors and employers
June 1, 2016	Update alternative workplace labeling and hazard communication program as necessary, and provide additional employee training for newly identified physical or health hazards.	Employers
Transition Period to the effective completion dates noted above	May comply with either 29 CFR 1910.1200 (the final standard), or the current standard, or both	Chemical manufacturers, importers, distributors, and employers

Why train now?

- OSHA is requiring that employees are trained on the changes by December 1, 2013, while full compliance will begin in 2015.
- OSHA believes that workplaces will soon begin to receive labels and SDSs that are consistent with the GHS, since many manufacturers have already begun to transition.

Why train now?

- It is important to ensure that when employees begin to see the new labels and SDSs they will be familiar with them, understand how to use them, and be able to access the information effectively.
- The revised HCS requires that workers be re-trained within two years to facilitate recognition and understanding of the new elements.

What are the changes?

- Hazard Classification
  - The definitions have been changed to provide specific criteria for classification of health and physical hazards, as well as classification of mixtures.
  - These specific criteria will help ensure that evaluations of hazardous effects are consistent across manufacturers, and that labels and SDSs are more accurate as a result.

What are the changes?

- Labels
  - Manufacturers will be required to provide a label that includes:
    - a harmonized signal word
    - pictogram(s)
    - hazard statement for each hazard class and category
    - precautionary statements

What are the changes?

- Safety Data Sheets (SDSs)
  - will no longer be titled Material Safety Data Sheets (MSDSs)
  - will now have a specified 16-section format with required information

Let's start with hazard classification

- An evaluation of chemical hazards must be performed considering the available scientific evidence concerning such hazards.
- The revised HCS has specific criteria for each health and physical hazard.

Let's start with hazard classification

- The revised HCS establishes both hazard classes and hazard categories.
  - The classes are divided into categories that reflect the relative severity of the effect.
- It includes the general provisions for hazard classification and has extensive appendixes that address the criteria for each health or physical effect.

What about labels?

- The current system requires the chemical identity and appropriate hazard warnings, but leaves the method of providing those up to the manufacturer.
- The revised HCS specifies what information is to be provided for each hazard class and category.

Labels will require a pictogram

- A pictogram is a symbol plus other graphic elements, such as a border, background pattern, or color that is intended to convey specific information about the hazards of a chemical.
- Each pictogram consists of a different symbol on a white background within a red square frame set on a point.

HCS pictograms

Health Hazards		Physical Hazards	
	Skull and Crossbones		Flame
	Corrosion		Exploding Bomb
	Exclamation Mark		Flame Over Circle
	Health Hazard		Gas Cylinder

Labels will require signal words

- A signal word is a single word used to indicate the relative level of severity of hazard and alert the reader to a potential hazard on the label.
- The signal words used are
  - “Danger” – for more severe hazards
  - “Warning” – for less severe hazards

Labels will require a hazard statement

- A statement assigned to a hazard class and category that describes the nature of the hazard(s) of a chemical, including, where appropriate, the degree of hazard.
- Examples:
  - Fatal in contact with skin
  - May cause drowsiness or dizziness
  - In contact with water releases flammable gases, which may ignite spontaneously

HCS hazards

Carcinogen	Mutagenicity	Corrosive to Metals	Flammables
Reproductive Toxicity	Respiratory Sensitizer	Skin Corrosion (Burns)	Pyrophorics
Target Organ Toxicity	Aspiration Toxicity	Eye Damage	Self-Heating
Irritant (skin and eye)	Skin Sensitizer	Organic Peroxides	Emits Flammable Gas
Acute Toxicity (Harmful)	Narcotic Effects	Gases Under Pressure	Self-Reactives
Acute Toxicity (Fatal or Toxic)	Respiratory Tract Irritant	Oxidizers	Explosives

Labels will require a precautionary statement

- A phrase that describes recommended measures to be taken to minimize or prevent adverse effects resulting from exposure to a hazardous chemical, or improper storage or handling of a hazardous chemical.
  - Prevention
  - Response
  - Storage
  - Disposal

How is the SDS changing?

- The current standard indicates what information has to be included, but does not specify a format for presentation or order.
- The revised standard requires the information to be presented using specific headings in a specified sequence.
  - It also has a list of required information under each heading.

The 16-section format includes

Section 1. Identification	**Section 9.** Physical and Chemical Properties
Section 2. Hazard(s) Identification	**Section 10.** Stability and Reactivity
Section 3. Composition/Information on Ingredients	**Section 11.** Toxicological Information
Section 4. First-Aid Measures	**Section 12.** Ecological Information
Section 5. Fire-Fighting Measures	**Section 13.** Disposal Considerations
Section 6. Accidental Release Measures	**Section 14.** Transport Information
Section 7. Handling and Storage	**Section 15.** Regulatory Information
Section 8. Exposure Controls/Personal Protection	**Section 16.** Other Information

Any new information to know?

- OSHA will require Threshold Limit Values (TLVs) and Permissible Exposure Limits (PELs) in Section 8.
- OSHA will require the International Agency for Research on Cancer (IARC) and the National Toxicology Program (NTP) classifications in Section 11.

What are Threshold Limit Values?

- The concentration of a substance in air that nearly all workers may be exposed to repeatedly without adverse health effects.
  - Time-weighted average (TLV-TWA) exposure for an 8-hour workday and a 40-hour work week.
  - Short-term exposure limit (TLV-STEL) for a 15-minute TWA that should not be exceeded at any time during a workday.
  - Ceiling level (TLV-C) that should not be exceeded at any time.
  - All TLVs are recommendations by the American Conference of Governmental Industrial Hygienists (ACGIH).

What are Permissible Exposure Limits?

- Regulatory limits on the amount or concentration of a substance in the air.
  - They are based on an 8-hour time-weighted average exposure.
  - This means that an employee may be exposed to concentrations higher than the PEL, so long as the average concentration over eight hours remains lower.
  - Limits are established by OSHA

IARC and NTP in Section 11?

- OSHA will require manufacturers to indicate if the chemical
  - has been found to be a potential carcinogen in the International Agency for Research on Cancer (IARC) Monographs
  - is listed in the National Toxicology Program (NTP) Report on Carcinogens
  - has been found to be a potential carcinogen by OSHA

Estimated benefits?

- OSHA expects that the modifications will result in
  - increased safety and health for the affected employees
  - reduce the numbers of accidents, fatalities, injuries, and illnesses associated with exposures to hazardous chemicals

Estimated benefits?

- The revisions for labeling and safety data sheets would enable employees exposed to workplace chemicals to more quickly obtain and to more easily understand information about the hazards associated with those chemicals.
- The revisions are expected to improve the use of appropriate exposure controls and work practices that can reduce the safety and health risks associated with exposure to hazardous chemicals.

Estimated benefits?

- OSHA anticipates that, in addition to safety and health benefits, the revised standard will result in productivity benefits by providing training to employees as required by the standard through the improved consistency of the labels and SDSs.

Standard management?

- The United Nations revises the GHS every two years.
- It is expected that the GHS will be a living document and is expected to remain up-to-date and relevant.
- Further changes may be adopted on a two year cycle.

Communication of changes?

- OSHA anticipates that future updates may be necessary and can be done through various rulemaking options, including:
  - Technical updates for minor terminology changes
  - Direct final rules for text clarification
  - Notice and comment rulemaking for more substantive or controversial updates such as additional criteria or changes in health or safety hazard classes or categories




For more information:

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