

Hazard Communication Standard 2012 HCS 2012

GHS Alignment



The American Society of Safety Engineers



HCS 2012 Key Changes

- Hazard Classification
 - Hazard determination
- Labels
- SDS
- Information and Training

Key Dates

Deadline	Requirement	Affected Parties
December 1, 2013	Train employees re: label and SDS	Employers
June 1, 2015	Comply with final rule	Chemical manufacturers, importers, distributors and employers.
December 1, 2015	Distributors can no longer ship chemicals without GHS label	Employers
June 1, 2016	Update written programs, facility labeling, additional training as needed	Employers

Background/History

Dates	Activity
1983	HCS published
1989	Fully enforced in all industries covered by OSHA
September 2006	Published ANPR
September 2009	Published NPRM
December 2009	Public comment period ends
March 2010	Informal public hearings
October 2011	Rule to OMB
March 26, 2012	Hazard Communication Modifications published in Federal Register
May 25, 2012	Effective Date

What is GHS?

- Globally Harmonized System
- Common and coherent approach
- Defines and classifies hazards for chemicals
- Communicates hazard information on labels and safety data sheets (SDS).
- International recommendation from the United Nations – initiated 1992 (Earth Summit); agreed upon 2002; published 2003; updated biennially; and now being adopted into regional regulations.
 - Workplace Exposures
 - Transportation
 - Consumer
 - Pesticides
- Provides the underlying infrastructure for establishment of national, comprehensive chemical safety programs.

Major Existing Systems (basis for GHS)

- UN Recommendations on the Transport of Dangerous Goods
- European Union (EU) Directives on Substances and Preparations
- Canadian Requirements for Workplace, Consumers and Pesticides
- US Requirements for Workplace, Consumers and Pesticides (OSHA HazCom, CPSC and EPA FIFRA)



Benefits

- Standardizes
 - Classification process
 - Label information
 - SDS format
- Global communication

Key Changes

- Few Definitions
- Information and Training
- Hazard Classification
- Labels
- SDS

Definitions (added)

- Classification
- Hazard Category
- Hazard Class
- Hazard Not otherwise Classified
- Hazard Statement
- Label Elements
- Pictogram
- Precautionary Statement
- Product Identifier
- Pyrophoric Gas
- Safety Data Sheet
- Signal Words
- Simple Asphyxiant
- Substance

Added Definitions

- **HNOC** – adverse physical or health effect identified through evaluation of scientific evidence during the classification process that does not meet the specified criteria for the physical and health hazard classes addressed in this section. This *does NOT extend* coverage to adverse physical and health effects for which there is a hazard class addressed in this section, but the effect either falls below the cut off value/concentration limit of the hazard class or is under a GHS hazard category that has not been adopted by OSHA (e.g., Acute toxicity Category 5.)

Definitions (deleted)

- Combustible liquid
- Compressed gas
- Explosive
- Flammable
- Flashpoint
- Hazard Warning
- Identify
- Material Safety Data Sheet
- Organic Peroxide
- Oxidizer
- Pyrophoric
- Unstable (reactive)
- Water reactive

Definitions (revised)

- Chemical
- Chemical Name
- Hazardous Chemical
- Health Hazard
- Label
- Mixture
- Physical Hazard
- Trade Secret

Information and Training

New Requirements

- December 1, 2013
- Train employees
 - Labeling
 - SDS

Continued Requirements

- Initial assignment
 - Requirements of standard
 - Operations where hazardous chemicals present
 - Location availability of program and SDS
 - Methods to detect
 - Hazards
 - Protective measures
 - SDS and labels
- New Hazards

SDS Hazard Classification Criteria

- Determine nature and severity of hazard
 - Appendix A and B
- Classifications based on UN Recommendations on Transport of Dangerous Goods
- Health
- Environmental
- Physical
- Mixtures





Hazard Classification Steps

- Select Appendix A or B
 - Health Hazard vs. Physical Hazard
 - Prescriptive not Performance Oriented
- Identify Hazard Class
 - Based on Data
- Identify Hazard Category
 - Based on Data
 - Not all GHS Categories Adopted

10 Health Hazard Classifications

- Acute Toxicity
- Skin Corrosion and Irritation
- Serious Eye Damage and Eye Irritation
- Respiratory or Skin Sensitization
- Germ Cell Mutagenicity
- Carcinogenicity
- Reproductive Toxicity
- Specific Target Organ Toxicity, Single Exposure
- Specific Target Organ Toxicity, Repeated Exposure
- Aspiration Hazard

Example: Acute Oral Toxicity

ACUTE TOXICITY: ORAL				
Category 1	Category 2	Category 3	Category 4	Category 5
				<i>No pictogram</i>
Danger Fatal if swallowed	Danger Fatal if swallowed	Danger Toxic if swallowed	Warning Harmful if swallowed	Warning May be harmful if swallowed




NOTE: Criteria for classification is acute LD50 or LC50. OSHA did not adopt Category 5 for acute toxicity.

Notice that the category numbers go from low to high with lower numbers being more severe.

16 Physical Hazards

- Explosives
- Flammable Gases
- Flammable Aerosols
- Oxidizing Gases
- Gases Under Pressure
- Flammable Liquids
- Flammable Solids
- Self Reactive chemical
- Pyrophoric Liquids
- Pyrophoric Solids
- Self Heating Chemicals
- Chemicals Which in Contact with Water, Emit Flammable Gases
- Oxidizing Liquids
- Oxidizing Solids
- Organic Peroxides
- Corrosive to Metals

Example: Flammable Liquids

FLAMMABLE LIQUIDS			
Category 1	Category 2	Category 3	Category 4
 <p>Danger Extremely flammable liquid and vapor</p>	 <p>Danger Highly flammable liquid and vapor</p>	 <p>Warning Flammable liquid and vapor</p>	<p><i>No pictogram</i></p> <p>Warning Combustible liquid</p>
FP $\leq 23^{\circ}\text{C}$ and BP $\leq 35^{\circ}\text{C}$	FP $\leq 23^{\circ}\text{C}$ and BP $> 35^{\circ}\text{C}$	FP $> 23^{\circ}\text{C}$ and $\leq 60^{\circ}\text{C}$	FP $> 60^{\circ}\text{C}$ and $\leq 93^{\circ}\text{C}$

- Criteria for classification is flash point/boiling point. OSHA adopted all categories.

OSHA ADDED HAZARDS

- Simple asphyxiant
- Pyrophoric Gas
- Combustible Dust
- Hazard Not Otherwise Classified (HNOC)

Labels

- Appendix C – Allocation of Label Elements
 - Assigned by hazard class and category
- Product Identifier
- Signal Words
 - Danger
 - Warning
- Hazard Statement
- Pictogram
 - 8 of GHS 9
- Precautionary Statement (required by OSHA, not GHS)
 - 4 types
 - Prevention, response, storage and disposal
- Name, Address and telephone #

Signal Words

- Danger
- Warning

Hazard Statement

- All applicable statements must be included in label
- Combine as appropriate to reduce words
- Examples:
 - Harmful if swallowed
 - Fatal in contact with skin
 - Causes serious eye damage
 - Extremely flammable gas

HCS Pictograms and Hazards

Health Hazard



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

Flame



- Flammables
- Pyrophoric
- Self-Heating
- Emits Flammable Gas
- Self Reactive
- Organic Peroxides

Exclamation Mark



- Irritant (skin and eye)
- Skin Sensitizer
- Acute Toxicity
- Narcotic Effects
- Respiratory Tract Irritant
- Hazardous to Ozone Layer (Non-Mandatory)

Gas Cylinder



- Gasses Under Pressure

Corrosion



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

Exploding Bomb



- Explosives
- Self-Reactives
- Organic Peroxides

Flame over Circle



- Oxidizers

Environmental (Non-Mandatory)



- Aquatic Toxicity

Skull and Crossbones



- Acute Toxicity (fatal or toxic)

Health Hazard Pictograms



Physical Hazard Pictograms



Environmental Pictograms



OSHA ADDED HAZARDS

- Simple asphyxiant
 - Label: **Warning**. May displace oxygen and cause rapid suffocation.
- Pyrophoric Gas
 - Label: **Danger**. Catches fire spontaneously if exposed to air.
- Combustible Dust
 - Label: **Warning**. May form combustible dust concentrations in air
- Hazard Not Otherwise Classified (HNOC)
 - Does not need to be addressed on labels; has to be addressed on SDS and in training

Precautionary Statement

- Prevention
- Response
- Storage
- Disposal
- Some interpretation required
 - / = choose
 - ... = fill in the rest
 - *Italics* = specific conditions to be specified
 - [] = may not be appropriate to use

Labeling – not changed

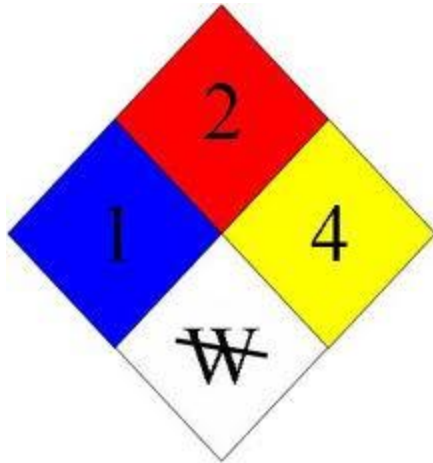
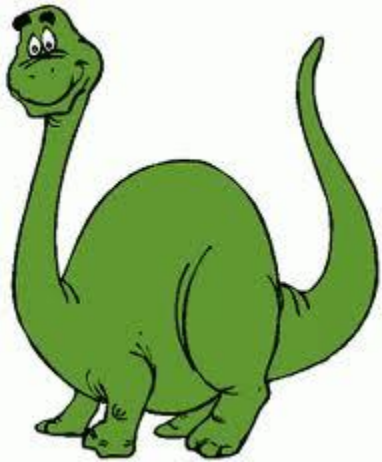
- Present
- Can't deface unless relabeled
- Secondary containers
- Exemptions
 - Pesticides
 - TSCA
 - FDA
 - Distilled Beverages
 - Biological Hazards
 - Ionizing and Non-Ionizing Radiation
 - RCRA Waste
 - Tobacco

Workplace Labeling

- Product identifier
- Signal word
- Hazard statement
- Pictogram
- Precautionary statement

- OR....

Soon to be extinct?



SDS - 16 Section Format

1. Identification
2. Hazard(s) identification
3. Composition/information on ingredients
4. First-aid measures
5. Fire-fighting measures
6. Accidental release measures
7. Handling and storage
8. Exposure control/personal protection



SDS - 16-Section Format

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

NOTE: Sections 12,13, 14, and 15 considered non-mandatory under OSHA proposal.

SDS Required Finer Points

- Sub-headings under each of the 16 elements
- TLVs required
- Carcinogenicity – Appendix F guidance
- IARC and NTP classifications must be noted
- HNOC
 - NO on label Yes on SDS
- Pyrophoric Gases
- Simple Asphyxiant
- Combustible Dust

SDS

- File for all chemicals
- Readily accessible
- Provided with initial shipment
- Reevaluate for products not currently being produced
- New information – three month update

Written Program

- Describe criteria for
 - Inventory
 - Methods of information of hazards of non-routine tasks
 - Labels
 - SDS
 - Employee training and information
 - Multi-employer worksites
 - Multiple worksites per shift

Trade Secrets

- Withholding of information
- SDS must indicate what was withheld as a trade secret
- Must be made available to health professionals, employees and designated representatives
- Non emergency written requests
 - Assess hazard, sampling, medical surveillance, PPE, engineering controls, etc.

What Now?

- Employee training
 - **DEC. 1 Due Date!**
- SDS development
- Workplace labeling evaluation
- Written program evaluation

Questions/ Discussion

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