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GHS AT A GLANCE

What is GHS?

GHS is a world regulation for classifying and communicating chemical hazards. Hazard communication experts around the world have worked on it for years. The result was the creation of a new global standard that's based on major existing systems, including the OSHA Hazard Communication Standard (HCS) we've been using here in the US. The resulting document is called the "Globally Harmonized System of Classification and Labeling of Chemicals," or GHS.

The goal of this new system is to use more effective communication of chemical hazards to improve the safety and health of our nation's workers.

Why the change to GHS?

Adoption of GHS brings the U.S. into alignment with an international standard but the main goal of making these changes to the HCS is to improve safety and health protections for American workers.

GHS is expected to prevent injuries and illnesses, and improve trade conditions for chemical manufacturers. By implementing GHS guidelines into the revised HCS, OSHA has expanded the "right to know" into the "right to understand."

How does GHS improve safety and health protections?

- It's expected to prevent more than 500 workplace injuries and illnesses and 45 fatalities every year.
- Enhances worker comprehension of hazards (especially with low and limited literacy workers), reduces confusion, facilitates safety training, and results in safer handling and use of chemicals.
- Provides quicker, more efficient access to SDS information
- Cost savings through productivity improvements, fewer SDS and label updates, and simpler hazcom training
- Reduces international trade barriers and creates a framework for countries without existing chemical safety systems.

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Who needs to comply?

If you are a manufacturer, supplier, or a user of chemicals, you are required to comply with GHS. (OSHA 29 CFR 1910.1200 Hazard Communication Standard)

When do we need to be compliant?

OSHA has provided a phase-in period for adoption of the revised Hazard Communication Standard (HCS). During the phase-in process, employers need to be in compliance with either the existing HCS, the revised HCS, or both. The following table gives a list of compliance deadlines and requirements:

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

***This date coincides with the EU implementation date for classification of mixtures**

What are the major changes to GHS?

There are three main areas in the existing Hazard Communication Standard (HCS) which have changed with the adoption of GHS. This includes hazard classification, labels, and safety data sheets.

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Which specific changes do I need to be aware of?

- New classification criteria for health, physical, and environmental chemical hazards
- Standardized label elements for hazard classes and categories
- The appropriate signal words, pictograms, and hazard and precautionary statements required to communicate the danger to users
- A standardized order of information for Safety Data Sheets (SDS-the updated version of MSDS)

1. Hazard classification (formerly hazard determination) is one of the major areas of change. Definitions of hazard now provide specific criteria for classification of health, physical, and environmental chemical hazards. Also for the classification of mixtures.
Making the criteria more specific ensures better consistency in the evaluation of hazardous effects across manufacturers. This also results in more accurate safety data sheets (formerly material safety data sheets.)

So how is hazard evaluation changing? The current Hazard Communication Standard (HCS), provides parameters for evaluation, but doesn't give specific, detailed criteria. The revised HCS, on the other hand, has specific criteria for each health and physical hazard, plus detailed instructions for evaluation. This new method of evaluation is covered in the required GHS training.

The revised HCS also establishes hazard classes and categories. A class describes the different hazards. For example, "Gases under Pressure" is an example of a class in the physical hazards group. Categories are used to describe the sub-sections of classes. For example, "Self-Reactive Chemicals" has seven categories. Each category has rules or criteria to determine which chemicals are assigned to that category.

For more information, see paragraph (d) or Appendixes A and B of the revised rule.

2. Standardized labels for hazard classes and categories will now be required. Previously, label preparation could be done in a variety of ways with the method being left to the preparer. Under the revised HCS, once classification has been done, the standard will specify what should go on the label.

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3. According to the revised HCS, labels will now require the following:

- A pictogram, which is the GHS symbol on the label and SDS (there are nine.) Not all categories will have an associated symbol.
- A signal word, which indicates the relative severity of the hazard. There are only two: danger (more severe hazards) and warning (less severe.)
- A hazard statement which is a description of the nature of the hazards of the chemical. There is a hazard statement for each category of a class. For example, for chemicals in the "Self-heating substances and mixtures" class (category 1), the hazard statement would be "Self-heating; may catch fire." This would appear on both the label and the SDS.
- A precautionary statement describing recommended measures to minimize or prevent adverse effects resulting from exposure to, improper storage of, or handling of a hazardous chemical.

4. Information on the safety data sheet (SDS) will be about the same as what we currently have (MSDS). The current standard indicates what should be included, but doesn't specify a format for presentation or order of information. The revised HCS has sixteen sections and uses consistent headings in a designated sequence.

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 controls/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, including date of preparation or last revision

The SDS format is the same as the ANSI standard format which is already widely used in the U.S.

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What pictograms are required?

There are nine pictograms used in GHS used to convey health, physical, and environmental hazards. The revised Hazard Communication Standard (HCS) requires the use of eight of them, with the exception being the environmental pictogram.

Health Hazard

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

Flame

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

Exclamation Mark

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

Gas Cylinder

- Gases under Pressure

Corrosion

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

Exploding Bomb

- Explosives
- Self-Reactives
- Organic Peroxides

Flame over Circle

- Oxidizers

Environment (Non Mandatory)

- Aquatic Toxicity

Skull and Crossbones

- Acute Toxicity (fatal or toxic)

Can I change pictogram boarders?

According to the revised HCS, all pictograms must have red borders. The purpose of keeping the color consistent is to increase recognition and make them easily comprehensible. Although some businesses might prefer to use a black border for domestic shipping, red is required for both domestic and international shipping.

In addition, all red borders printed on a label must have a symbol printed inside. This is meant to limit confusion from workers who might be faced with blank labels. So, for maximum recognition and impact of warning labels, and to ensure that users don't get desensitized to these warnings, a symbol must always be used with the red border.

When should label information be updated?

With the revised Hazard Communication Standard (HCS), it's now okay to update labels when new information on hazards becomes available. In fact, Chemical manufacturers, importers, distributors, or employers who become "newly aware" of any significant information on the hazards of a chemical need to revise the labels within six months. Labels on any containers shipped after that time must have labels with the new information.

For more reference please see the following web sites:

http://www.osha.gov/dsg/hazcom/global.html
http://www.globalharmonization.org/

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