

Globally Harmonized System (GHS)

The much-anticipated revision to the Occupational Safety and Health Administration's (OSHA's) Hazard Communication Standard (29 Code of Federal Regulations (CFR) 1910.1200) was published in the Federal Register on March 26, 2012 (with an effective date of 60 days thereafter). One of the most significant changes in this revision is OSHA's adoption of the United Nations' Globally Harmonized System (GHS) of Classification and Labeling of Chemicals.

The revised standard, which OSHA is calling HazCom 2012, is expected to affect every U.S. workplace with exposure to hazardous chemicals. These changes will ultimately impact over five million facilities and over 40 million workers. **OSHA anticipates the revised standard will prevent 43 fatalities and 521 injuries and illnesses annually, with a net annualized savings of over \$507 million a year.**

HISTORY

Since 1985, the Hazard Communication Standard (HCS) has been the primary tool for providing employers and employees with information about the chemical hazards in their workplaces. The performance-orientated standard has allowed chemical manufacturers and importers to convey information on labels and material safety data sheets in whatever format they desire. While the information has been helpful, a more standardized approach to classifying the hazards and conveying the information will more effectively protect workers.

Born out of the United Nations 'Earth Summit' of 1992, GHS is an international approach to the classification of hazardous chemicals and the communication of hazards to workers via labels and safety data sheets. It is not a law; rather it is a system with components that countries can adopt into their own systems. GHS affects everyone in the chemical lifecycle, with special responsibilities for chemical

manufacturers and employers that handle, use and store hazardous materials.

UNCHANGED PROVISIONS

The parts of the HCS not related to the GHS—basic framework, scope and exemptions—have remained largely unchanged. There have been some minor terminology modifications to align the revised HCS language with that used in the GHS. For example, the term “hazard determination” has been changed to “hazard classification” and “material safety data sheet” (MSDS) has changed to “safety data sheet” (SDS).

MAJOR CHANGES

The three major areas of change are hazard classification, labels and safety data sheets.

The definitions of hazard have been changed to provide specific criteria for classification of health and physical hazards and for the classification of mixtures. These will help ensure that evaluations of hazardous effects are consistent across the board and labels and safety data sheets are therefore more accurate.

Chemical manufacturers and importers will be required to provide a harmonized label that has six standardized elements for classified hazards:

Product Identifier—Must match product identifier on safety data sheet.

Manufacturer Contact Information—Including name, phone number, and address.

Hazard Pictograms—There are nine pictograms used to convey the health, physical and environmental hazards. HCS requires eight of these pictograms, the exception being the environmental pictogram as environmental hazards are not within OSHA's jurisdiction. These pictograms will have a black symbol on a white background with a red diamond frame (*see illustrations below*):



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
Narcotic Effects
Respiratory Tract Irritant
Hazardous to Ozone Layer (Non-Mandatory)

Hazard Pictograms—Continued



Gas Cylinder

Gases Under Pressure



Corrosion

Skin Corrosion/Burns
Eye Damage
Corrosive to Metals



Explosion Bomb

Explosives
Self-Reactives
Organic Peroxides



Flame Over Circle

Oxidizers



Environment (Non-Mandatory)

Aquatic Toxicity



Skull and Crossbones

Acute Toxicity
(fatal or toxic)

Signal Word—Either DANGER or WARNING depending upon hazard severity.

Hazard Statements—Standardized sentences that describe the level of the hazards.

Precautionary Statements—Steps employees can take to protect themselves.

OSHA has indicated that it will continue to give employers the flexibility to determine what types of workplace labels will be required. Employers have the ability to choose to label workplace containers either with the same label that the chemical manufacturer or importer used on shipped containers or with alternate labels that meet the requirements of the standard.

Safety data sheets (SDS) remain the backbone of HCS.

With the revision there is a name and formatting change. The M is dropped from MSDS and more importantly a standardized 16 section format with a required ordering of sections is mandatory. This format is essentially the American National Standard for Hazardous Workplace Chemicals—Hazard Evaluation and Safety Data Sheet and Precautionary Labeling Preparation, ANSI Z400.1/Z129.1-2010. **The sections, in order, are:**

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

To be compliant, an SDS needs all 16 sections; however, OSHA will not be enforcing sections 12-15, which fall outside their jurisdiction.

EFFECTIVE DATES

Employers must train workers on the new label elements and SDS format by December 1, 2013.

Chemical manufacturers, importers, distributors, and employers must comply with all modified provisions of the final rule by June 1, 2015. However, distributors may ship products labeled by manufacturers under the old system until December 1, 2015. By June 1, 2016, employers must update alternative workplace labeling and hazard communication programs as necessary, and provide additional worker training for new identified physical and health hazards.

The table below summarizes the phase-in dates required under the revised Hazard Communication Standard (HCS):

COMPLETION DATE	REQUIREMENT(S)	WHO
December 1, 2013	Train employees on the new label elements and SDS format.	Employers
June 1, 2015*	Comply with all modified provisions of this final rule, except:	Chemical manufacturers, importers, distributors and employers
December 1, 2015	Distributors may ship products labeled by manufacturers under the old system until December 1, 2015.	
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	Comply with either 29 CFR 1910.1200 (this final standard), or the current standard, or both.	All chemical manufacturers, importers, distributors and employers

During the transition period, all chemical manufacturers, importers, distributors, and employers may comply with either the current, revised or both 29 CFR 1910.1200 standards.

When HCS first took effect in 1985, employees got the right-to-know what their potential exposure to hazards might be. With this revision, employees not only know about the potential hazards, they also have a better understanding of what the warnings mean, what to do if exposed and how to protect themselves. All employees will be provided with the same information in the same format.

COMMONLY ASKED QUESTIONS

Q. Are employers required to maintain two sets of labels and safety data sheets during the transition period?

A. No, during the transition period, all chemical manufacturers, importers, distributors, and employers may comply with either the existing HCS or the revised HCS, or both. During this time hazard communication programs may go through a period where labels and safety data sheets under both standards will be present. OSHA considers this acceptable and two sets of labels and safety data sheets are not required.

COMMONLY ASKED QUESTIONS CONT.

Q. Why must training be conducted prior to the compliance effective date?

A. Many countries are in the process of implementing GHS. Therefore, it is possible that workplaces may begin to receive GHS compliant labels and safety data sheets much before December 1, 2015. When employees begin to see the new labels and safety data sheets, they must understand the information that is being provided.

Sources:

OSHA Web Site - <http://www.osha.gov/dsg/hazcom/index2.html>

United Nation's Globally Harmonized System of Classification and Labeling of Chemicals (GHS)—The Purple Book

Find even more information you can use to help make informed decisions about the regulatory issues you face in your workplace every day. View all Quick Tips Technical Resources at www.grainger.com/quicktips.

GRAINGER SERVICES

GRAINGER
|||||

onlinesafetymanager®

This easy-to-use online management tool supports your safety initiatives.



Online Safety Resources

Grainger helps make maintaining safety and compliance easier with tools like Online SafetyManager®. Discover a better way to manage your safety program at: www.grainger.com/safetymanager.

Quick Tips Technical Resources

Find even more information about the regulatory issues you face in your workplace every day. View all Quick Tips Technical Resources at www.grainger.com/quicktips.

Think Safety. Think Grainger.®

Rely on North America's largest supplier of safety products. You'll also find a network of safety resources that help you stay in compliance and protect employees from hazardous situations. Count on Grainger for lockout tagout, fall protection equipment, confined space products, safety signs, personal protective equipment (PPE), emergency response and so much more!

Please Note: The information contained in this publication is intended for general information purposes only. This publication is not a substitute for review of the applicable government regulations and standards, and should not be construed as legal advice or opinion. Readers with specific questions should refer to the cited regulation or consult with an attorney.

**You've got safety needs,
you've got Grainger.
Get it. Got it. Good.**

Help keep your people and facilities safer with Grainger. We have over 100,000 safety products, plus the services and resources you need to help reduce injuries, facilitate compliance, manage risk and increase productivity. Think Safety. Think Grainger.®

Globally Harmonized System (GHS)

Here's a quick reference to help you get familiar with GHS labels and pictograms, and what they mean.



GHS PICTOGRAMS & LABELS

Pictured are the standard hazard symbols used in the GHS. Symbols can be used individually and in combinations to define the specific hazard(s) of the chemical.



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
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



Explosion Bomb

Explosives
Self-Reactives
Organic Peroxides



Flame Over Circle

Oxidizers



Environment (Non-Mandatory)

Aquatic Toxicity



Skull and Crossbones

Acute Toxicity (fatal or toxic)

The illustration below identifies the components of a GHS label. Actual label design and layout may vary and are subject to the discretion of the competent authority.

Product Identifier

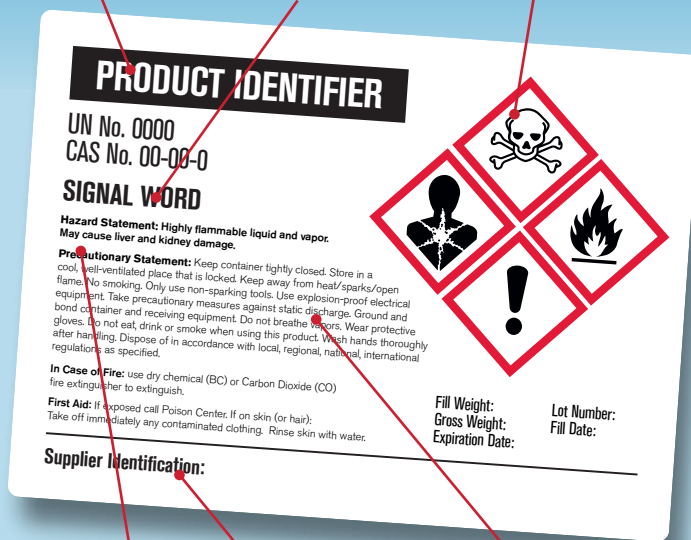
Should match the product identifier used on the Safety Data Sheets.

Signal Word

Indicates the relative level of the hazard's severity. "Danger" and "Warning" are the GHS signal words.

Pictograms

Graphics intended to convey specific hazard information.



Hazard Statements

A phrase assigned to a hazard class and category that describes the nature of the product hazards.

Supplier Identification

The Supplier Identification is the name, address and telephone number of the manufacturer or supplier.

Precautionary Statements

Describes recommended measures to minimize or prevent adverse effects resulting from exposure.

(GHS icon) 1.410.5.4.1 Location of GHS Information on the Label The GHS hazard pictograms, signal word and hazard statements should be located together on the label.

The competent authority may choose to provide a specified layout for the presentation of these and for the presentation of precautionary information, or allow supplier discretion.

For more information, please consult the United Nations Economic Commission for Europe (UNECE) and the Occupational Safety & Health Administration (OSHA).