

# The Revised OSHA Hazard Communication Standard

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Employers whose workers may be exposed to chemicals of any kind need to know that the U.S. Occupational Health and Safety Administration (OSHA) will begin implementing a revised Hazard Communication Standard (HCS) on December 1, 2013. OSHA implemented the original HCS in 1983. The regulations in the HCS, also known less formally as Worker Right-To-Know laws, were promulgated as 29CFR1920.1200 in order to protect employees who work with hazardous chemicals.

Attorneys who represent workers injured by chemical exposure and attorneys who represent chemical manufacturers, importers and distributors should understand that the revised HCS will likely impact their practices and litigation involving workplace illness, injury, and death.

The revised HCS adopts the United Nations' Globally Harmonized System of Classification and Labeling of Chemicals (GHS). According to OSHA, the Globally Harmonized HCS is designed to help protect more than 43 million workers who produce, handle or may be exposed to hazardous chemicals in more than five million workplaces across the United States. Once the revised HCS is implemented, OSHA forecasts that annually more than 500 workplace injuries and 43 fatalities will be prevented.

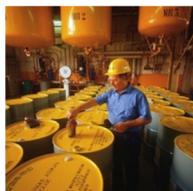


The revised HCS will become effective incrementally. The various completion dates, regulatory elements and the entities responsible for compliance are provided in Figure 1. When fully implemented in 2016, OSHA expects the following benefits:

- **Reduced Worker Confusion Regarding Chemical Hazards;**  
A different system of classifying and describing the hazards of each chemical substance will reduce worker confusion. Appropriate methods to manage those hazards will facilitate safe chemical hazard handling.
- **Improve Worker Understanding of Specific Workplace Chemical Hazards;**  
Appropriate and effective communication tools will inform limited-literacy workers as to methods to minimize their exposure to chemical hazards.
- **Improve Safety Education and Training;**  
Education and training will promote safer handling and use of chemicals.
- **Clarified and Simplified Safety Data Sheets** (formally Material Safety Data Sheets);  
Workers will be provided with quick, efficient access to chemical safety information.
- **Productivity Improvements that Save American Businesses More than \$475,000;**  
Limited yet focused Safety Data Sheet updates and Chemical Label updates will improve productivity through clarified hazard communication training.
- **Foster Global American Business Economic Competition.**  
Harmonizing U.S. Health and Safety regulations with similar regulations around the world will result in reduced economic barriers to hazardous materials transportation and reduced economic trade barriers for chemical manufacturers, importers and distributors.

The original HCS was a performance-based standard rather than a specification-based standard. The original HCS defined duties and set expectations for the kinds of information that were required and their order of presentation on Material Safety Data Sheets (MSDS) documents. The original HCS, however, offered little guidance regarding the creation and application of standardized definitions and classifications of chemical hazards. The original HCS did not give consistent information regarding standardized warnings, signal words, and numerical safety rankings, among other issues. This lack of specificity has resulted in numerous unforeseen and undesirable consequences.

During the nearly three decades that U.S. employers have been required to comply with the HCS, the European Union and other industrialized countries have implemented their own worker protections. This regional variability negatively affected both the quality and consistency of worker safety protections, and hampered U.S. business global trade relationships.



Certain aspects of the revised HCS incorporating the United Nations' GHS amendments remain performance-oriented. However, the revised HCS's key provisions are intended to provide a standardized approach for classifying and presenting chemical hazard information on Product Labels and on Safety Data Sheets in a manner that is accessible to diverse worker populations.

The four major areas of change in the UN GHS Harmonized HCS are in Hazard Classification, Product Labels, Safety Data Sheets, and Training.

- **Hazard Classification**

Hazard Definitions have been changed to provide specific criteria for classification of:

- Health and Physical Hazards  
Extensive appendixes that address the criteria for each health or physical effect.
- Product Mixtures  
Detailed instructions for hazard evaluation.  
Determinations as to whether mixtures of the substance are addressed.

Specific classification criteria are included to ensure that evaluations of hazardous effects are consistent across manufacturers. As a result, Product Labels and Safety Data Sheets are more accurate.

- **Product Labels**

Chemical manufacturers, importers and distributors will be required to provide a Product Label that includes:

- Harmonized Signal Word (Danger, Warning)
- Pictogram ( see Figure 2)
- Hazard Statement for each Hazard Class and Hazard Category
- Precautionary Statements that are appropriate to the Hazard Class and Hazard Category

- **Safety Data Sheets (SDS)**

The Safety Data Sheet (SDS) replaces the Material Safety Data Sheet (MSDS). This document will have the following 16-section format:

- Section 1. Identification
- Section 2. Hazard(s) Identification
- Section 3. Composition/Information on Ingredients
- Section 4. First-Aid Measures
- Section 5. Fire-Fighting Measures

- Section 6. Accidental Release Measures
- Section 7. Handling and Storage
- Section 8. Exposure Controls/Personal Protection
- Section 9. Physical and Chemical Properties
- Section 10. Stability and Reactivity
- Section 11. Toxicological Information
- Section 12. Ecological Information
- Section 13. Disposal Considerations
- Section 14. Transport Information
- Section 15. Regulatory Information
- Section 16. Other Information, including Date of Preparation or Last Revision

Note that Sections 12 through 15 deal with regulations enforced by Federal agencies other than OSHA. They may be included in the SDS, but these sections are not required by OSHA.

- **Training**

In addition to the current training requirements, workers are required to be trained by December 1, 2013 on the following topics:

- New Product Label elements
- New Safety Data Sheet format

New to the revised HCS are Hazard Pictograms or Standardized Symbols (see Figure 2). The Pictograms and Symbols have been designed to quickly provide workers with visual information regarding health, physical and environmental hazards. The Pictograms also display the hazard class and category of the chemical (or mixture of chemicals). Given proper worker training, these Pictograms are expected to help overcome worker confusion arising from differences in literacy, education, experience and language.

As stated above, the revised HCS will become effective incrementally. During the implementation segments, employers will be required to comply with either the existing HCS or the revised HCS, or both. The revised HCS requires that workers be trained or re-trained within two years of the publication of the final rule (**March 20, 2012**) to facilitate recognition and understanding of the new Product Labels and Safety Data Sheets.

### **About The Author:**



#### **Melvin R. Kantz, Ph.D.**

Dr. Kantz holds both Bachelor and Master degrees in Chemistry. He earned his doctorate in Materials Engineering by researching and publishing on the fracture behavior of fiber reinforced plastics. Dr. Kantz has over thirty years of technical and management experience with companies including Monsanto, Shell, Congoleum and Ferro. As a member of the professional staff of CESI, he manages the West Coast office and laboratory. Dr. Kantz consults with clients in matters involving chemical and physical hazards. His typical investigations involve workplace and consumer exposures to chemical and physical hazards, regulatory compliance, labels and warnings, products liability, and intellectual property.

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**FIGURE 1**

<b>Effective Completion Date</b>	<b>Requirement(s)</b>	<b>Who</b>
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

**FIGURE 2**  
HCS Pictograms and Hazards

<b>Health Hazard</b> 	<b>Flame</b> 	<b>Exclamation Mark</b> 
<ul style="list-style-type: none"> <li>• Carcinogen</li> <li>• Mutagenicity</li> <li>• Reproductive Toxicity</li> <li>• Respiratory Sensitizer</li> <li>• Target Organ Toxicity</li> <li>• Aspiration Toxicity</li> </ul>	<ul style="list-style-type: none"> <li>• Flammables</li> <li>• Pyrophorics</li> <li>• Self-Heating</li> <li>• Emits Flammable Gas</li> <li>• Self-Reactives</li> <li>• Organic Peroxides</li> </ul>	<ul style="list-style-type: none"> <li>• Irritant (skin and eye)</li> <li>• Skin Sensitizer</li> <li>• Acute Toxicity (harmful)</li> <li>• Narcotic Effects</li> <li>• Respiratory Tract Irritant</li> <li>• Hazardous to Ozone Layer (Non Mandatory)</li> </ul>
<b>Gas Cylinder</b> 	<b>Corrosion</b> 	<b>Exploding Bomb</b> 
<ul style="list-style-type: none"> <li>• Gases under Pressure</li> </ul>	<ul style="list-style-type: none"> <li>• Skin Corrosion/ burns</li> <li>• Eye Damage</li> <li>• Corrosive to Metals</li> </ul>	<ul style="list-style-type: none"> <li>• Explosives</li> <li>• Self-Reactives</li> <li>• Organic Peroxides</li> </ul>
<b>Flame over Circle</b> 	<b>Environment (Non Mandatory)</b> 	<b>Skull and Crossbones</b> 
<ul style="list-style-type: none"> <li>• Oxidizers</li> </ul>	<ul style="list-style-type: none"> <li>• Aquatic Toxicity</li> </ul>	<ul style="list-style-type: none"> <li>• Acute Toxicity (fatal or toxic)</li> </ul>