Mulch & Soil Council

Hazard Communication 2012: How MSDS-to-SDS Rule Changes Can Impact You

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An OSHA Cooperative Program

Introduction

- Much of this presentation was prepared through the OSHA Alliance program by the Society for Chemical Hazard Communication (SCHC) and OSHA. It has been adapted and supplemented for this audience.
- Through the Alliance Program, OSHA works with groups committed to worker safety and health to prevent workplace fatalities, injuries, and illnesses. These groups include unions, consulates, trade or professional organizations, businesses, faith- and community-based organizations, and educational institutions.
- Society for Chemical Hazard Communication (SCHC) - Chemical hazard communication professionals who represent industrial, consumer, specialty chemical companies, pharmaceutical firms, manufacturers, distributors, importers, government agencies, universities, and consultants. Promotes the improvement of hazard communication for chemicals. Educates SCHC members on hazard communication issues. Provides a forum for exchange of ideas and experiences. Enhances the awareness of members and the general public of new developments in hazard communications. Provides guidance or technical expertise to private, nonprofit groups and to government.

Hazard Communication and the Globally Harmonized System (GHS) Overview

- Why OSHA adopted the GHS
- Overview of the changes to the HazCom Standard
- Overview of Compliance Assistance Resources
- Directorate of Enforcement Programs Products

Why did OSHA align the HCS with GHS?

- **A common, coherent approach to classifying and communicating chemical hazards.**
  - » **Harmonized definitions of hazards**
  - » **Specific criteria for labels**
  - » **Harmonized format for safety data sheets**

Benefits of Adopting the GHS

- **Increase the quality and consistency of information provided to the workers, employers and chemical users.**
  - » **Reduce confusion/Increase comprehension of hazards.**
  - » **Improve downstream risk management.**
  - » **Facilitate training.**
  - » **Help address literacy problems.**
  - » **Reduce duplicate testing.**
  - » **Assist sound chemical management.**
- **Other benefits include facilitation of international trade in chemicals.**

Why GHS?

- **Different systems use different symbols and criteria, leading to confusion.**

Different Criteria

Figure 1.2

Acute oral toxicity LD_{50} (mg/kg)

Organization/Country /Regulation or Standard	High		Hazard			Low
	0		< 50		< 500	< 5,000 .....
ANSI/Z129.1	< 50 Highly Toxic		> 50 < 500 Toxic		> 500 < 2,000 Harmful	
OSHA/US/HIS	< 50 Highly Toxic		> 50 < 500 Toxic			
EPA/US/FIRA	0 ≤ 50 Toxicity Category I		> 50 < 500 Toxicity Category II		> 500 ≤ 5,000 Toxicity Category III	> 5,000 Toxicity Category IV
CPSC/US/HSA	< 50 Highly Toxic		> 50 < 5,000 Toxic			
GHS	**≤ 5**	**> 5 ≤ 50**	**> 50 ≤ 300**	**> 300 ≤ 2,000**	**> 2000 ≤ 5000**	
DOD/US	< 5 Packing Group I	> 5 < 50 Packing Group II	> 50 < 200 (solid) Packing > 50 < 500 (liquid) Group III			
NFPA/US	≤ 5 Hazard Category 4	> 5 ≤ 50 Hazard Category 3	> 50 ≤ 500 Hazard Category 2	> 500 ≤ 2,000 Hazard Category 1	> 2,000 Hazard Category 0	
NPCA/US/HMIS	≤ 1 Toxicity Rating 4	> 1 ≤ 50 Toxicity Rating 3	> 50 ≤ 500 Toxicity Rating 2	> 500 ≤ 5,000 Toxicity Rating 1	> 5,000 Toxicity Rating 0	
EU	< 25 Very Toxic	> 25 < 200 Toxic	> 200 < 2,000 Harmful			
WHMIS/Canada	≤ 50 Very Toxic WHMIS Class D, Division 1, Subdivision A	> 50 ≤ 500 Toxic WHMIS Class D, Division 1, Subdivision B				
Australia/NOHSC	< 25 Very Toxic	> 25 < 200 Toxic	> 200 < 2,000 Harmful			
Mexico	< 1 Extremely Toxic	>20<30 Highly Toxic	>50< 500 Moderately Toxic	>500 < 3000 Mildly Toxic		
Malaysia	<25 Very Toxic		200 to 500 Harmful			
Japan	< 30 Poisonous			300 to 3000 Powerful		
Korea	< 25 Very Toxic	>50 < 200 Toxic	>200<2000 Harmful			

Hazcom History

- **1983: OSHA Initial manufacturing hazcom standard**
- **1987: OSHA Expanded to all industries**

  -> Established requirements but not a format!
- **1990: ILO Recommendation 177**
- **1991: EU SDS Directive 91/155/EEC (Pictograms, Risk & Safety phrases)**
- **1992: UN Conference on the Environment and Development (UNCED)**
- **1993: ANSI Z400.1 consensus standard format**
- **2003: GHS v.1 published (GHS v5 published 2013)**
- **2006: OSHA ANPR to align HCS with GHS**
- **2010: OSHA Public Hearings**
- **March 26, 2012: OSHA Final Rule on GHS (v3)**

GHS – Based on Existing Systems

- USA – OSHA, CPSC (consumer), EPA pesticides
- Canada – WHMIS, CCCR (consumer), pesticides
- EU classification and labelling
- UN Recommendations on Transport of Dangerous Goods

Technical Focal Points

- **Health & Environmental:** The Organization for Economic Cooperation and Development (OECD)
- **Physical Hazards:** The UN Committee of Experts for the Transport of Dangerous Goods (UNCETDG)
- **Hazard Communication:** The International Labor Organization (ILO)

Notable changes

- **Using a “specification” approach rather than a “performance-oriented” approach**
  - **“Hazard classification” rather than “hazard determination”**
- **Labels are more defined and will now require:**
  - **Product identifier**
  - **Pictogram**
  - **Signal word**
  - **Hazard statement(s)**
  - **Precautionary statement(s)**
  - **Name, address, and telephone number**

Notable changes, cont.

- **“Safety data sheet” (rather than “material safety data sheet”) uses a defined 16-section format.**
- **Guidance in the GHS (such as decision logics in criteria) has been removed to streamline provisions.**
  - » **May be provided as a separate document to assist compliance later.**

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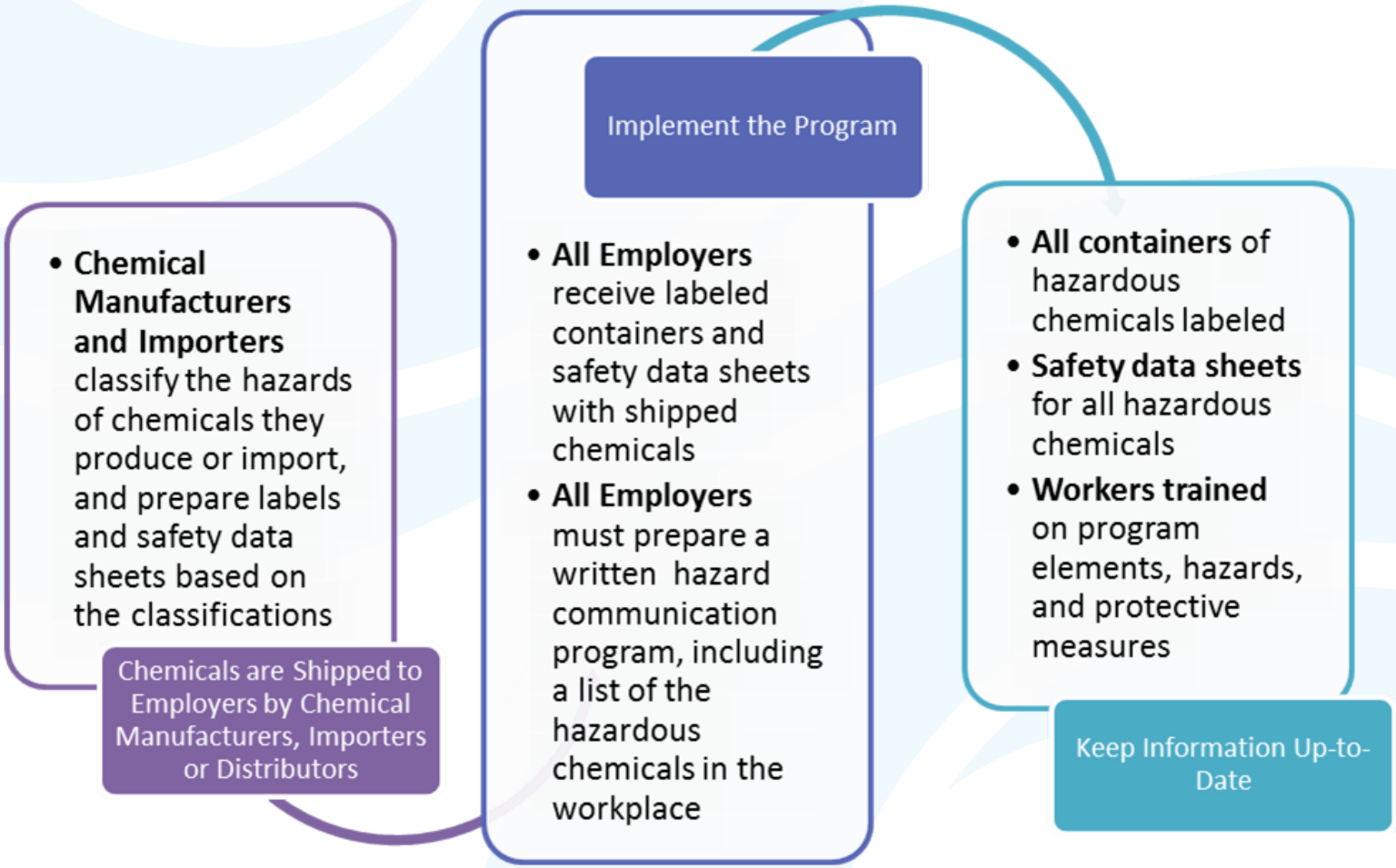
MODIFIED HAZARD COMMUNICATION STANDARD

How Hazard Communication Works



Organization of the Final Rule

a) Purpose

b) Scope and Application

c) Definitions

d) Hazard Classification

e) Written Hazard Communication Program

f) Labels and Other Forms of Warning

g) Safety Data Sheets

h) Employee Information and Training

i) Trade Secrets

j) Effective Dates

Appendices A–F

Appendices

- Appendix A, Health Hazard Criteria (Mandatory) (NEW)
- Appendix B, Physical Hazard Criteria (Mandatory) (NEW)
- Appendix C, Allocation of Label Elements (Mandatory) (NEW)
- Appendix D, Safety Data Sheets (Mandatory) (NEW)
- Appendix E, Definition of “Trade Secret” (Mandatory)
- Appendix F, Guidance for Hazard Classifications re: Carcinogenicity (Non-Mandatory) (NEW)

a) Purpose

HazCom 1994

- All hazards to be ***evaluated***.
- Comprehensive hazard communication program to transmit information.
- Preempt state laws.

HazCom 2012

- All hazards to be ***classified***.
- Other provisions the same, except OSHA added that the rule is consistent with Revision 3 of the GHS.
- Slight clarifying modification was made to the language regarding preemption.

b) Scope and Application

HazCom 1994

- All chemicals known to be present are covered.
- Practical accommodations for special situations.
- Addresses interface with other Federal laws.

HazCom 2012

- Minimal changes except to conform terminology, and remove reference to current Appendix E which has been deleted from the standard and a clarification on Federalism.

c) Definitions

HazCom 1994

- Includes specific definitions for terms used in the standard, as well as all physical hazards.

HazCom 2012

- Physical hazard definitions removed from paragraph (c), and placed in a new Appendix B on physical hazard classification criteria.
- Following terms are also deleted: flashpoint (methods included in Appendix B), hazard warning, material safety data sheets.
- Some definitions are revised to be GHS-consistent.
- New definitions added for classification.

d) Hazard Classification

HazCom 1994

- **Performance-oriented**
  - » Definitions in paragraph (c), Appendices A and B
  - » Appendix B—parameters for evaluating data
  - » "Floor" of chemicals considered hazardous
  - » "One study" rule
  - » Standardized mixture cut-off rules

HazCom 2012

- **Specific and detailed**
  - » Concept of "classification" vs. determination in current rule
  - » Each hazard class has detailed criteria to apply to data on the chemical
  - » No floor; based on weight of evidence
  - » Mixture rules are specific to each hazard class

Hazard Classification

- Each physical or health hazard is a “hazard class” (e.g., Flammable liquid and Carcinogenicity are hazard classes).
- A “hazard class” may be sub-divided in the criteria into several “hazard categories” based on the degree of severity of the hazard.
- Placing a chemical into a “hazard class” , and where necessary, a “hazard category”, is the concept of classification—determining not only the hazard, but also the severity of the effect.

Hazard Classification, cont.

- Manufacturers are still responsible for determining the hazards of the chemicals they produce or import.
- Classification (similar to hazard determination) is based on the full range of available information. The procedures for determining if the manufacturer has properly performed the hazard classification are provided in Appendix A (health) and Appendix B (physical).

Health Hazards

Hazard Class	Hazard Category			
Acute Toxicity	1	2	3	4
Skin Corrosion/ Irritation	1A	1B	1C	2
Serious Eye Damage/ Eye Irritation	1	2A	2B	
Respiratory or Skin Sensitization	1			
Germ Cell Mutagenicity	1A	1B	2	
Carcinogenicity	1A	1B	2	
Reproductive Toxicity	1A	1B	2	Lactation
STOT – Single Exposure	1	2	3	
STOT – Repeated Exposure	1	2		
Aspiration	1			
Simple Asphyxiants	Single Category			

HazCom 1994: Mixtures

- **For mixtures, the approach for health hazards is to base it on a percentage cut-off of 0.1% for carcinogens, and 1% for all other effects.**

HazCom 2012: Mixtures

- **The GHS has a tiered approach to mixtures, with each health hazard class having a specific approach.**
  - **Step 1: Use available test data on the mixture as a whole to classify the mixture based on the substance criteria.**
  - **Step 2: Use bridging principles to extrapolate from other data (e.g., dilution principle).**
  - **Step 3: Estimate hazards based on known information regarding the ingredients of the mixture (cut-offs may be applied).**
  - **Except for chronic health hazards.**
- **Chemical manufacturers and importers may rely on the information provided in ingredient SDSs unless they have a reason to know that it is inaccurate.**

Physical Hazards

Hazard Class	Hazard Category						
Explosives	**Unstable Explosives**	**Div 1.1**	**Div 1.2**	**Div 1.3**	**Div 1.4**	**Div 1.5**	**Div 1.6**
Flammable Gases	**1**	**2**					
Flammable Aerosols	**1**	**2**					
Oxidizing Gases	**1**						
Gases under Pressure Compressed Gases Liquefied Gases Refrigerated Liquefied Gases Dissolved Gases	**1**						
Flammable Liquids	**1**	**2**	**3**	**4**			
Flammable Solids	**1**	**2**					
Self-Reactive Chemicals	**Type A**	**Type B**	**Type C**	**Type D**	**Type E**	**Type F**	**Type G**
Pyrophoric Liquids	**1**						
Pyrophoric Solid	**1**						
Pyrophoric Gases	**Single category**						
Self-heating Chemicals	**1**	**2**					
Chemicals, which in contact with water, emit flammable gases	**1**	**2**	**3**				
Oxidizing Liquids	**1**	**2**	**3**				
Oxidizing Solids	**1**	**2**	**3**				
Organic Peroxides	**Type A**	**Type B**	**Type C**	**Type D**	**Type E**	**Type F**	**Type G**
Corrosive to Metals	**1**						
Combustible Dusts	**Single category**						

OSHA Additions

- **Hazards Not Otherwise Classified (HNOC):**

1. **Pyrophoric gases: Danger! Catches fire spontaneously if exposed to air**
2. **Simple asphyxiants: Warning: May displace oxygen and cause rapid suffocation**
3. **Combustible dust: Warning: May form combustible dust concentrations in the air**

Combustible Dust

- **Combustible dust is covered separately from HNOC, but is not specifically defined.**
- **Guidance for defining combustible dust is to be taken from existing documents, including the directive for the National Emphasis Program; the NFPA standards also provide useful information.**
- **Combustible dust must be addressed on labels where appropriate:**
  - » ***Warning. May form combustible dust concentrations in air.***
  - » **Paragraph (f)(4) may apply to materials shipped in solid form, that create combustible dust when processed.**

Combustible Dust

- % Combustible Dust = % passing 40-mesh sieve
- Dried to < 5% moisture, Kst is Deflagration Index
  - » Sugar Kst = 138
  - » Lignite Kst = 151
  - » Peat Kst = 157
  - » Wood Flour Kst = 205

Dust explosion class	Kst (bar.m/s)	Characteristic
St 0	0	No explosion
St 1	>0 and <=200	Weak explosion
St 2	>200 and <=300	Strong explosion
St 3	>300	Very strong explosion

e) Written Hazard Communication Program

HazCom 1994

- Employers must have a written program describing how the rule will be implemented, including a list of hazardous chemicals, methods for informing employees about non-routine tasks.

HazCom 2012

- No changes.
- Employers will have to make sure the program is current when the new provisions are implemented (e.g., list of hazardous chemicals may have to be updated).

f) Labels and Other Forms of Warning

HazCom 1994

- Shipped containers to be labeled with identity, appropriate hazard warnings, and responsible party.
- Performance-oriented, specifics left to discretion of chemical manufacturer or importer.

HazCom 2012

- Shipped containers to be labeled with product identifier; signal word; hazard statement(s); pictograms; precautionary statements; and responsible party.
- Specifies information by hazard class and category.

Approach to Labels

- The final rule—like the GHS—is a specification approach to labels. In Appendix C, OSHA has indicated by hazard class and hazard category the label elements that must be on the label.
- Appendix C is basically a cookbook approach to labeling—once classification of the hazards is completed, Appendix C is to be consulted to determine how to convey the required information.

Label Requirements – Shipped Containers

- Product identifier
- Signal word
- Hazard statement(s)
- Pictogram(s)
- Precautionary statement(s)
- Name, address, and phone number of the responsible party

HCS Pictograms and Hazards

Health Hazard	Flame	Exclamation Mark
		
• Carcinogen • Mutagenicity • Reproductive Toxicity • Respiratory Sensitizer • Target Organ Toxicity • Aspiration Toxicity	• Flammables • Pyrophorics • Self-Heating • Emits Flammable Gas • Self-Reactives • Organic Peroxides	• Irritant (skin and eye) • Skin Sensitizer • Acute Toxicity (harmful) • Narcotic Effects • Respiratory Tract Irritant • Hazardous to Ozone Layer (Non Mandatory)
Gas Cylinder	**Corrosion**	**Exploding Bomb**
		
• Gases under Pressure	• Skin Corrosion/ burns • Eye Damage • Corrosive to Metals	• Explosives • Self-Reactives • Organic Peroxides
Flame over Circle	**Environment (Non Mandatory)**	**Skull and Crossbones**
		
• Oxidizers	• Aquatic Toxicity	• Acute Toxicity (fatal or toxic)

Red vs. Black Borders

- **OSHA is requiring red borders regardless of the shipment's destination.**
- **The red borders increase comprehensibility.**

- **Blank red diamonds are not permitted on a label.**

Updating Labels

- OSHA proposed to require labels to be updated within three months of getting new and significant information about the hazards.
- The final rule requires containers shipped six months after the information is available to be labeled accordingly.

Label Example

ToxiFlam (Contains: XYZ)

Danger! Toxic If Swallowed, Flammable Liquid and Vapor

Do not eat, drink or use tobacco when using this product. Wash hands thoroughly after handling. Keep container tightly closed. Keep away from heat/sparks/open flame. – No smoking. Wear protective gloves and eye/face protection. Ground container and receiving equipment. Use explosion-proof electrical equipment. Take precautionary measures against static discharge. Use only non-sparking tools. Store in cool/well-ventilated place.

IF SWALLOWED: Immediately call a POISON CONTROL CENTER or doctor/physician. Rinse mouth.

In case of fire, use water fog, dry chemical, CO_2 , or "alcohol" foam.

See Material Safety Data Sheet for further details regarding safe use of this product

MyCompany, MyStreet, MyTown, NJ 00000, Tel: 444 999 9999

Workplace Labeling

- **OSHA is maintaining the approach used in the current HCS that allows employers to use workplace-specific labeling systems as long as they provide the required information.**
- **However, such workplace label systems may need to be updated to make sure the information is consistent with the new classifications.**
- **NFPA/HMIS Systems**
  - » **(ratings systems v. classification)**

g) Safety Data Sheets

HazCom 1994

- Specifies what information is required, but chemical manufacturer or importer can use whatever format or order of information they want.

HazCom 2012

- Mandates 16-section SDS headings, order of information, and what information is to be provided under the headings.
- Will not enforce sections 12-15 that require information outside OSHA's jurisdiction.
- Requirements to provide SDS are essentially unchanged.

When to provide SDS

- 29CFR1910.1200(g)(6)(i) Chemical manufacturers or importers shall ensure that distributors and employers are provided an appropriate safety data sheet with their initial shipment, and with the first shipment after a safety data sheet is updated;
- (ii) The chemical manufacturer or importer shall either provide safety data sheets with the shipped containers or send them to the distributor or employer prior to or at the time of the shipment;
- (iii) If the safety data sheet is not provided with a shipment that has been labeled as a hazardous chemical, the distributor or employer shall obtain one from the chemical manufacturer or importer as soon as possible; and,
- (iv) The chemical manufacturer or importer shall also provide distributors or employers with a safety data sheet upon request.

16-Section Safety Data Sheet

1. Identification of the substance or mixture and of the supplier
2. Hazards identification
3. Composition/information on ingredients Substance/Mixture
4. First aid measures
5. Firefighting 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
12. *Ecological information (non mandatory)*
13. *Disposal considerations (non mandatory)*
14. *Transport information (non mandatory)*
15. *Regulatory information (non mandatory)*
16. Other information including information on preparation and revision of the SDS

Appendix D

- **Specifies the minimum information to be included in each of the 16 sections.**
- **Two revisions in this information are in the final rule:**
  - **ACGIH TLVs continue to be required on the SDS.**
  - **Information regarding carcinogenicity classifications by IARC and NTP also continue to be required.**

h) Employee Information and Training

HazCom 1994

- Requires employee information and training before a worker is exposed to the hazardous chemicals in the workplace, and whenever the hazard changes.

HazCom 2012

- Clarifies that the labels on shipped containers and workplace labels must be explained, as well as SDS format.
- Workers will have to be trained on the new label and SDS formats before all the provisions of the rule are effective.

Training, cont.

- **Label elements**
  - » **Train employees on the type of information that the employee would expect to see on the new labels.**
  - » **How they might use that information.**
    - Product identifier, Signal word, Hazard statement(s), Pictogram(s), Precautionary statement(s), and Name, address and phone number of the responsible party.
    - General understanding how the elements interact.
      - » For example, explain there are two signal words: Danger means a more severe hazard within a hazard class. Warning is for the less severe hazard
- **Safety Data Sheet Format**
  - » **Train the employees on the standardized 16 section format and the type of information they would find in the various sections.**

i) Trade Secrets

HazCom 1994

- Allows specific chemical identity to be protected when it is a legitimate trade secrete.
- Specifies conditions for protection, and for release when there is a safety and health need for the information.

HazCom 2012

- Process remains the same.
- Percentage of a substance in a mixture is also considered to be a type of trade secret subject to the provisions in the rule.
- Shall provide information to health professionals

j) Effective Dates – HazCom 2012

Effective 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

*This date coincides with the European Union implementation date for classification of mixtures.

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OTHER AFFECTED STANDARDS

Approach to Other Standards

- Many other OSHA standards contain criteria related to defining hazards, as well as other provisions that rely on those criteria.
- OSHA undertook a comprehensive review of its rules to identify what needed to be changed.
- OSHA has proposed modifications to all of those standards that it determined needed to be consistent with the GHS.
  - Health Examples: Asbestos, Lead, Vinyl Chloride, Butadiene
  - Safety Examples: Flammable liquids, Welding, PSM, HAZWOPER
- Will not cover these details

Health Standards

- The substance-specific standards generally pre-date the HCS, and do not have a comprehensive approach to hazard communication.
- The final rule references HazCom 2012 in each of these standards to ensure they have all the protections of the rule.
- In addition, OSHA updated the provisions regarding what is to be communicated to workers to ensure the health effects are consistent with the GHS criteria.
- Regulated area signs will need to be updated to reflect the new language.
- Employers have until June 1, 2016 to update the signs.

Substance-Specific Health Standards

Standard	Substance	Original signs	Final Changes
1910.1001 1915.1001	Asbestos Regulated areas Where the use of respirators and protected clothing is required	DANGER ASBESTOS CANCER AND LUNG DISEASE HAZARD AUTHORIZED PERSONNEL ONLY RESPIRATORS AND PROTECTIVE CLOTHING ARE REQUIRED IN THIS AREA	DANGER ASBESTOS MAY CAUSE CANCER CAUSES DAMAGE TO LUNGS AUTHORIZED PERSONNEL ONLY WEAR RESPIRATORY PROTECTION AND PROTECTIVE CLOTHING IN THIS AREA

The Workplace

- **For Employers**
  - » Initial employee training on the label elements
  - » Minimal training on new SDS format
  - » Continue to maintain the updated SDSs
  - » Review current hazard communication program and update as necessary
- **For Manufacturers**
  - » Initial start-up costs associated with reclassification, producing new labels, safety data sheets, training

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GUIDANCE & OUTREACH

Updated HazCom Webpage

Home | Workers | Regulations | Enforcement | Data & Statistics | Training | Publications | Newsroom | Small Business | OSHA

GHS
The Globally Harmonized System of Classification and Labeling of Chemicals

HAZARD COMMUNICATION

The standard that gave workers the right to know, now gives them the right to understand.

Safety & Health Topics Page: Hazard Communication

Labeling | Safety Data Sheets | Pictograms | Effective Dates

Dr. David Michaels discusses the publication of the Final Rule for Hazard Communication
[Video | Statement]

"Exposure to hazardous chemicals is one of the most serious threats facing American workers today," said U.S. Secretary of Labor Hilda Solis. "Revising OSHA's Hazard Communication standard will improve the quality and consistency of hazard information, making it safer for workers to do their jobs and easier for employers to stay competitive."

The Hazard Communication Standard (HCS) is now aligned with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS). This update to the Hazard Communication Standard (HCS) will provide a common and coherent approach to classifying chemicals and communicating hazard information on labels and safety data sheets. Once implemented, the revised standard will improve the quality and consistency of hazard information in the workplace, making it safer for workers by providing easily understandable information on appropriate handling and safe use of hazardous chemicals. This update will also help reduce trade barriers and result in productivity improvements for American businesses that regularly handle, store, and use hazardous chemicals while providing cost savings for American businesses that periodically update safety data sheets and labels for chemicals covered under the hazard communication standard.

Highlights:

- HCS/HazCom 2012 Final Rule
  - **Federal Register:** The Final Rule was filed on March 20th at the Office of the Federal Register and available for viewing on their Public Electronic Inspection Desk. The Federal Register published the final rule on March 26, 2012. The effective date of the final rule is 60 days after the date of publication.
    - Federal Register [PDF, 32 MB]
- HCS Comparison: HazCom 1994 and HazCom 2012
  - Side-by-side
  - Redline Strikeout of the Regulatory Text
- HazCom 1994
- **Press Release:** US Department of Labor's OSHA publishes final rule to update the Hazard Communication Standard (HCS)
- Guidance
  - OSHA Brief's [PDF 265 KB]
  - Fact Sheet
  - Quick Cards

Hazard Communication Standard

In order to ensure chemical safety in the workplace, information about the identities and hazards of the chemicals must be available and understandable to workers. OSHA's Hazard Communication Standard (HCS) requires the development and dissemination of such information:

- Chemical manufacturers and importers are required to evaluate the hazards of the chemicals they produce or import, and prepare labels and safety data sheets to convey the hazard information to their downstream customers;
- All employers with hazardous chemicals in their workplaces must have labels and safety data sheets for their exposed workers, and train them to handle the chemicals appropriately.

Guidance & Outreach

https://www.osha.gov/dsg/hazcom/ghs-final-rule.html

Guidance & Outreach

- **Press Release: US Department of Labor's OSHA publishes final rule to update the Hazard Communication Standard (HCS)**
- **Guidance**
  - » **OSHA Briefs**
  - » **Fact Sheet**
  - » **Quick Cards**

OSHA® QUICK CARD™

Hazard Communication Standard Labels

OSHA has updated the requirements for labeling of hazardous chemicals under its Hazard Communication Standard (HCS). As of June 1, 2015, all labels will be required to have pictograms, a signal word, hazard and precautionary statements, the product identifier, and supplier identification. A sample revised HCS label, identifying the required label elements, is shown on the right. Supplemental information can also be provided on the label as needed.

OSHA® QUICK CARD™

Hazard Communication Safety Data Sheets

The Hazard Communication Standard (HCS) requires chemical manufacturers, distributors, or importers to provide Safety Data Sheets (SDSs) (formerly known as Material Safety Data Sheets or MSDSs) to communicate the hazards of hazardous chemical products. As of June 1, 2015, the HCS will require new SDSs to be in a uniform format, and include the section numbers, the headings, and associated information under the headings below:

OSHA® QUICK CARD™

Hazard Communication Standard Pictogram

As of June 1, 2015, the Hazard Communication Standard (HCS) will require pictograms on labels to alert users of the chemical hazards to which they may be exposed. Each pictogram consists of a symbol on a white background framed within a red border and represents a distinct hazard(s). The pictogram on the label is determined by the chemical hazard classification.

HCS Pictograms and Hazards

Health Hazard	Flame	Exclamation Mark
• Carcinogen • Mutagenicity • Reproductive Toxicity • Respiratory Sensitizer • Target Organ Toxicity • Aspiration Toxicity	• Flammables • Pyrophorics • Self-Heating • Emits Flammable Gas • Self-Reactives • Organic Peroxides	• Irritant (skin and eye) • Skin Sensitizer • Acute Toxicity (harmful) • Narcotic Effects • Respiratory Tract Irritant • Hazardous to Ozone Layer (Non-Mandatory)

Guidance & Outreach

OSHA is developing an array of guidance materials

- **Initial Materials**
  - » **Quick cards, OSHA briefs, booklets, small entity compliance guides**
- **Technical Materials**
  - » **Model training materials; Safety Data Preparation guidance; Hazard Classification Guidance**
- **Web Applications**
  - » **SDS Electronic Form; Label Elements Application; Acute Toxicity Calculator**

Updated Webpages

- **HazCom 2012 Webpage**
  - » http://www.osha.gov/dsg/hazcom/index.html
- **Safety & Health Topics Webpage**
  - » http://www.osha.gov/dsg/hazcom/index2.html

UN GHS Links & Information

- United Nations Economic Commission for Europe GHS Sub-committee
- http://www.unece.org/trans/danger/publi/ghs/ghs_welcome_e.html
- v5 is 530 pages

Directorate of Enforcement Programs: Products

- **Letters of Interpretation**
  - » Provide guidance on specific sections of the standard.
  - » Where appropriate, will be incorporated into the directive.
- **Hazard Communication Directive**
  - » Provides guidance on how OSHA enforces the Hazard Communication Standard.

Hazard Communication Directive

- **Provides an outline to compliance officers of what to review and how to cite violations of either HazCom 1994 or HazCom 2012.**
- **Covers sections of the standard and provides clarification on how the individual subparts should be reviewed and enforced.**

SDS for Hypothetical Formulation

- **Product Name: Ellen's Special Blend**

- **Sphagnum Peat Moss, 50%**
- **Bark & Wood Chips (western red cedar), 30%**
- **Perlite, CAS# 93763-70-3, 10%**
- **Potassium Carbonate, CAS # 584-08-7, 5%**
- **Water, CAS # 7732-18-5, 5%**

- **-> Could it dry out and create a dust or explosion hazard?**

Components & Classification

- Sphagnum Peat Moss – 50%
  - Kst = 157 (Weak Explosion Hazard)
  - No other hazard data found.
  - OSHA & ACGIH Dust limits are generally applicable.
  - **Classification**: Combustible dust

Components & Classification

- Wood dust (Western Red Cedar) – 40%
  - » ACGIH: 0.5 mg/m3 inhalable, sensitizer, A4 – Not classifiable as a Human Carcinogen
  - » OSHA Nuisance dust: 5 mg/m3 (respirable), 15 mg/m3 (total). Combustible dust
  - » IARC: Group 1: *Carcinogenic to Humans* (nasal/ nasopharynx)
  - » NTP: *Known to be a human carcinogen*
  - » Listed in NJ, PA, CA65
  - » Kst = 205 (Strong Explosion Hazard)
  - » **Classification**: Carcinogen Cat. 1; Sensitizer; Combustible Dust
  - » H350, H317

Components & Classification

- Perlite, CAS# 93763-70-3, 10%
  - » OSHA (PNOR: 5 mg/m^3 Respirable fraction, 15 mg/m^3 Total (Perlite limits vacated in 1989)
  - » ACGIH (Dust): 3 mg/m^3 Respirable, 10 mg/m^3 Inhalable
  - » Oral LD50 (mouse) = 12,960 mg/kg
    - LD50 > 5000, so not classified
  - » Perlite is listed among 1994 hazardous chemicals – identified as an eye, skin & respiratory irritant. I don't find data to support classification. Industry experience?
  - » **Classification**: Not Classified

Components & Classification

- Potassium Carbonate, CAS # 584-08-7, 5%
  - » Oral LD50 (rat) = 1870 mg/kg
  - » Draize Test: Irritating to skin & eyes
  - » Classification: Acute Oral Cat. 3, Skin & eye irritant
  - » => Application of mixture rules indicates **Not Classified** if <10%

- Water, CAS # 7732-18-5, 5%
  - » **Classification**: Not Classified

Final SDS

- Ellen's Special Blend SDS

Final Thoughts

- **OSHA does not have jurisdiction outside the workplace.**
- **Hazardous chemicals in workplace do require SDS; also "on request".**
- **Not required for : 1910.1200(b)(6)(iv) Wood or wood products, including lumber which will not be processed, where the chemical manufacturer or importer can establish that the only hazard they pose to employees is the potential for flammability or combustibility (wood or wood products which have been treated with a hazardous chemical covered by this standard, and wood which may be subsequently sawed or cut, generating dust, are not exempted);**

Final Thoughts

- **Not required for : 1910.1200(b)(6)(ix) Any consumer product or hazardous substance, as those terms are defined in the Consumer Product Safety Act (15 U.S.C. 2051 *et seq*.) and Federal Hazardous Substances Act (15 U.S.C. 1261 *et seq*.) respectively, where the employer can show that it is used in the workplace for the purpose intended … and the use results in a duration and frequency of exposure which is not greater than the range of exposures that could reasonably be experienced by consumers when used for the purpose intended;**

Final Thoughts

- Interpretation Letter of March 3, 1989: Must be provided to commercial customers, not required to provide "to retail distributors that have informed him that they do not sell the product to commercial customers or open the sealed container to use it in their own workplaces."
- Be aware that States may have programs that are "at least as effective" as Federal OSHA. (25 States)

Questions?

Thank You!

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