



# GHS

The Global Harmonization System  
of Classification and Labeling

*Scott D. Cole, COSS, CSP*  
*colesafety3@yahoo.com*

# What is GHS?

UN-developed system for chemical classification and hazard communication through harmonized provisions.

The goal is to develop an international system that has compatible labeling, material safety data sheets, and other information based on resulting classifications.





# Benefits of GHS?

- Enhanced protection of human health and the environment.
- Promotes uniform chemical management across countries.
- Facilitates trade by reducing regulation compliance barriers.



# Hazard Communication

Information = Protection

Confusion = Risk

Clarity / Simplicity / Consistency =  
***Harmonization***

# Risk Reduction Model

**Potential Risk**



<b>Risk Assessment</b>	<b>Risk Management</b>	<b>Risk Mitigation</b>	<b>Risk Communication</b>
Identification and characterization through sound data and science	Determination of effective requirements to ensure safety	Clear understanding and effective use of controls practices	Informed employees of changes in order to make sound personal risk decisions

**Safe Use**



# GHS Timeline

1992 – UN Subcommittee Proposal

September 2009 – Proposed Rulemaking

March 2010 – Public Hearings

March 2012 – Official Adoption by US

December 1, 2013

Train employees on the new label elements and SDS format

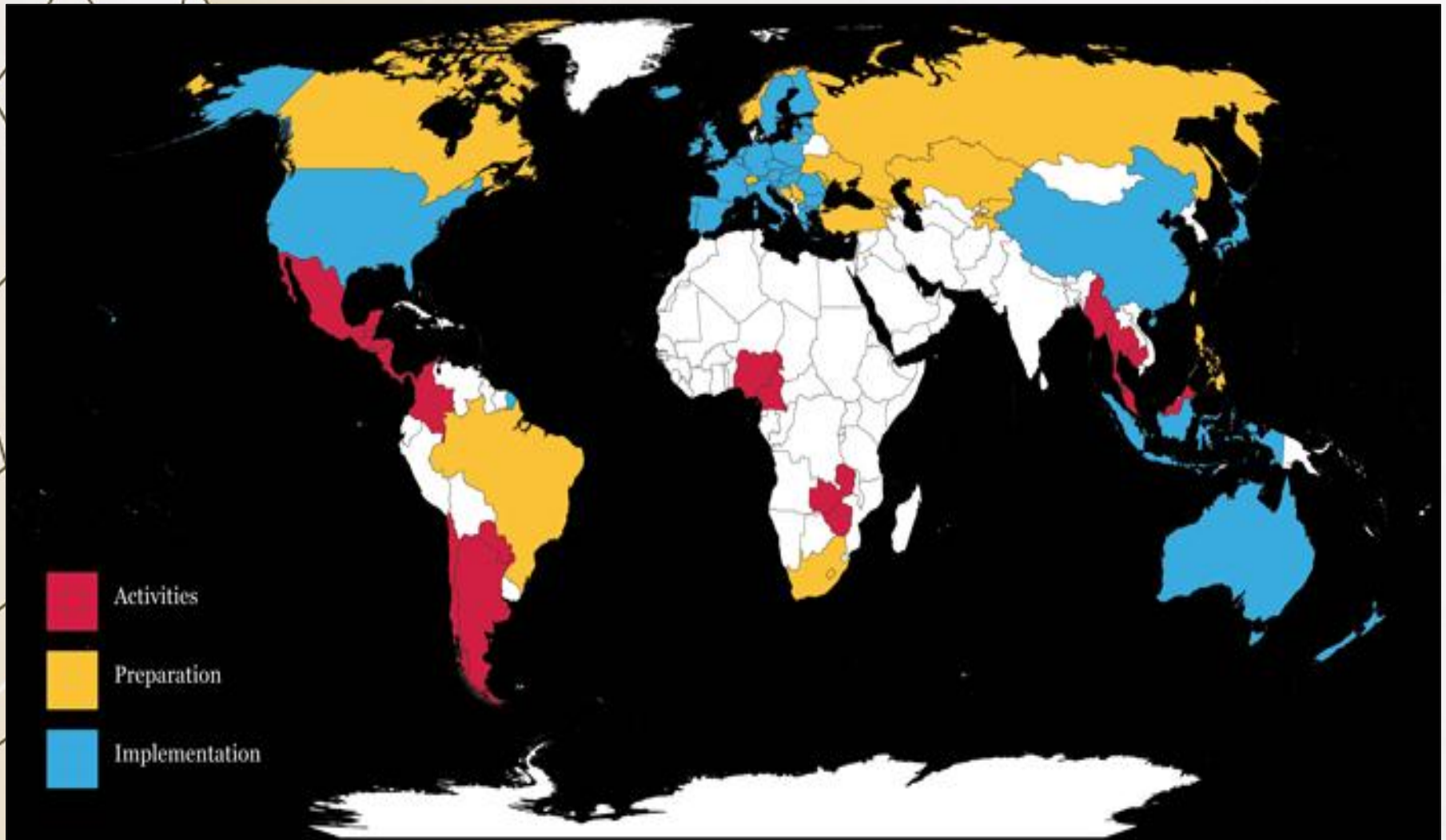


# Timeline Continued

*June 2015 – Comply with all provisions of the final rule; except,*

**\*\*\***Distributors may ship products labeled by manufacturers under the old system until December 1, 2015.

# Current Implementation







# OSHA GHS Facts - Costs

- Reclassification and revising safety data sheets \$22.5MM
  - Training \$95.4MM
  - Management \$59MM
  - Printing \$24.1MM
- Total Cost / Year: \$201MM



# OSHA GHS Facts - Savings

- Prevent 500 workplace injuries and illnesses and 43 fatalities annually
- Cost savings to American businesses of more than \$475MM
  - Productivity improvements
  - Fewer safety data sheets and label updates
  - Simpler hazard communication training



# Hazard Communication

1983

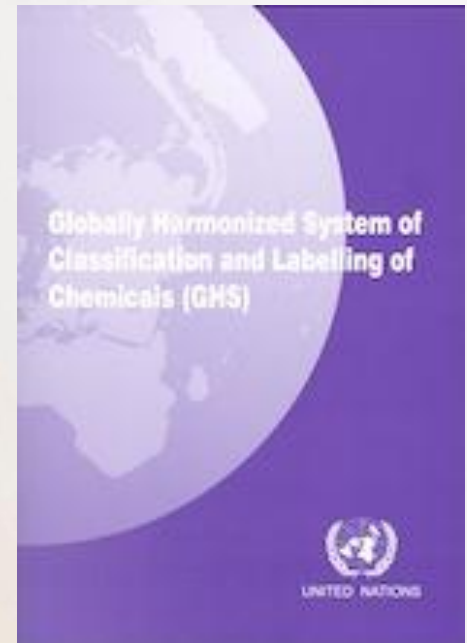
Major changes include:

- 1. Hazard Classification**
- 2. Labeling**
- 3. Safety Data Sheets**
- 4. Training**

# 1. Hazard Classification

HCS = performance-oriented

GHS = criteria-based



## 2. Labeling

Standardized requirements

- Pictogram
- Signal words
- Hazard statement
- Precautionary statement



# Symbol Savvy



# Symbol Savvy



# Symbol Savvy





# Symbol Savvy



# Symbol Savvy



**FedEx**®

The FedEx logo is displayed in a white rectangular box. The word "FedEx" is written in a bold, sans-serif font. The letters "Fed" are dark blue, and the letters "Ex" are orange. A registered trademark symbol (®) is located at the bottom right of the logo.

# 2. Labeling

## GHS Labels



Oxidizers - Can burn without air, or can intensify fire in combustible materials.



Explosives - May explode if exposed to fire, heat, shock, friction.



Corrosives - May cause skin burns and permanent eye damage.



Gases Under Pressure - Gas released may be very cold. Gas container may explode if heated.



Flammable - May be ignited by heat, sparks, or flames. Some substances may give off flammable gases.



Toxic to aquatic organisms and may cause long lasting effects in the environment.



Toxic material which may cause life threatening effects even in small amounts and with short exposure.



May cause serious and prolonged health effects on short or long term exposure.

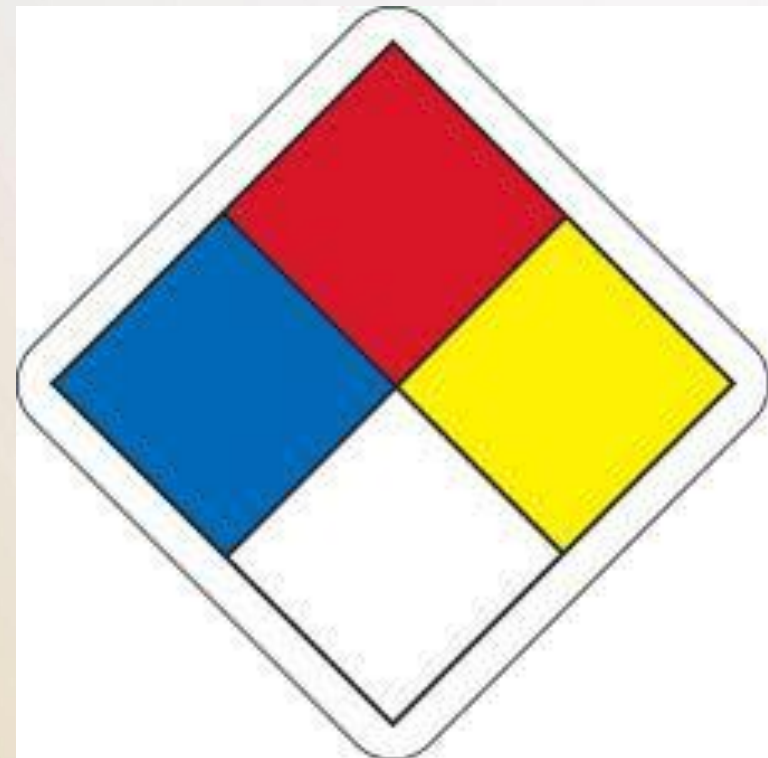


Irritant - May cause irritation (redness, rash) or less serious toxicity

## 2. Labeling

Name of Material

<input type="checkbox"/>	<b>HEALTH</b>
<input type="checkbox"/>	<b>FLAMMABILITY</b>
<input type="checkbox"/>	<b>REACTIVITY</b>
<input type="checkbox"/>	<b>PROTECTIVE EQUIPMENT</b>





## 2. Labeling

Signal words

**Danger**

Severe hazards

**Warning**

Less severe hazards



## 2. Labeling

### Hazard statement

- Assigned statement to a hazard class and category

***Category 1*** – Extremely flammable liquid or vapor

***Category 2*** – Highly flammable liquid or vapor

***Category 3*** - Flammable liquid or vapor

***Category 4*** – Combustible liquid

# 2. Labeling

## Precautionary statement

- Recommended measures to minimize or prevent adverse effects



## HCS/GHS Labeling Components

**PAINT (METHYL FLAMMALINE,  
LEAD CHROMOMIUM)**

**DANGER**

Causes damage to the liver and kidneys through prolonged or repeated exposure to the skin.

Keep away from food and drink.

Wash hands thoroughly after use and before eating.

Highly flammable liquid and vapour.

Keep away from heat and ignition sources.

**FIRST AID**

Call emergency medical care.

Wash affected area of body thoroughly with soap and fresh water.

Great Lake Paints Inc., Columbus, Ohio, USA.  
Telephone 999 999 9999

### Pictograms

- Conveys specific information about the hazard(s) of a chemical

### Product Identifier

- Chemical name or number to identify the chemical

### Signal Word

- Alerts level of severity of hazard

### Hazard Statement

- Describes the nature of hazard(s) associated with a chemical

### Precautionary Statement

- Recommended measures to take to prevent adverse effects

### First Aid Statement

- Emergency care information

### Supplier Information

- Name, address and telephone number of the chemical manufacturer, importer or other responsible party



# 3. Safety Data Sheets

Standardized requirements

- Specific headings
- Specific sequence





# 3. Safety Data Sheets

1. Identification
2. Hazard identification
3. Composition
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



# 3. Safety Data Sheets

12. Ecological identification

13. Disposal considerations

14. Transport information

15. Regulatory information

16. Other information, including date of preparation or last revision

# 4. Training

Must include:

1. Current HCS program elements
2. New label elements
3. SDS format



# HazCom 2012

Update / modify to include:

- Labeling changes
- SDS communications
- Employee training





**GHS =**



**Questions?**