Global Harmonization System
&
OSHA's Revised Hazard Communication Standard

Robert Kuykendall, CHMM
Principal, The Denali Group
925-602-2333

What is Global Harmonization?

- A new Argentine tango dance move?
- Another social networking internet startup?
- A common, organized and rational approach to defining and classifying hazards and communicating information on labels and safety data sheets.

What Is Global Harmonization?

- Focused on workers, transportation, emergency responders and consumers
- GHS provides underlying foundations for establishment of national, comprehensive chemical safety management programs and international consistency.

Where did it come from?

- GHS based on multiple “major” existing regulatory approaches including:
  - European Union requirements for classification and labeling of chemicals and containers
  - UN recommendations on Transport of Dangerous Goods
  - United States and Canadian regulatory approaches for the workplace, consumers, toxic substances & pesticides

Why is GHS necessary?

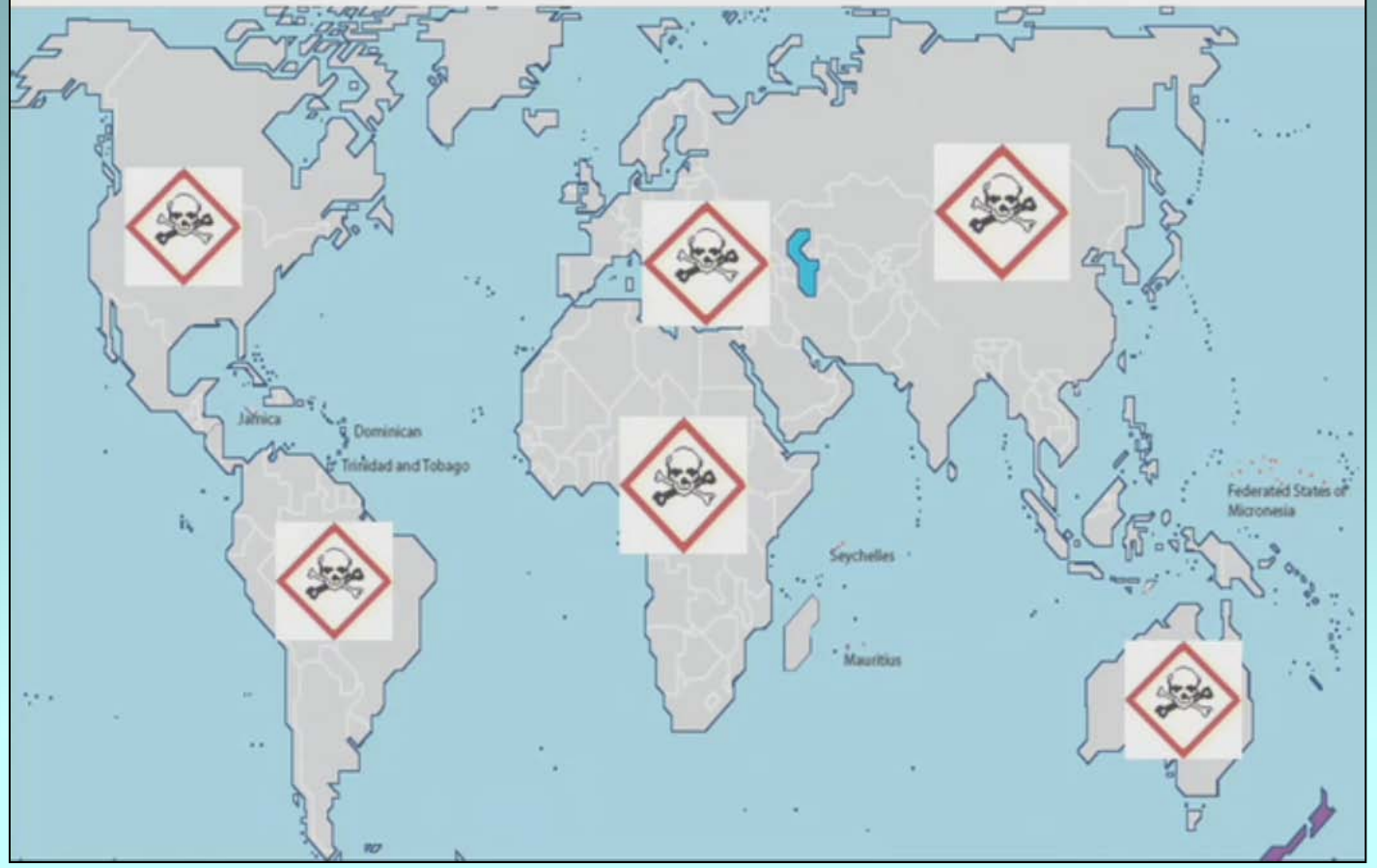
- No individual country can identify and regulate every hazardous chemical or product in commerce or used.
- It is estimated that there are approximately 650,000 in the United States.
- Adoption of requirements for information to accompany the chemical product helps address protection needs.

Why is GHS necessary?

- Label requirements differ, requiring multiple labels for the same product
- Hazard definitions not consistent - toxicity, flammability
- Globally over 100 diverse hazard communication regulations for chemical products
- Regulatory compliance is complex and costly
- Forms a barrier to efficient international trade in chemicals

Why is the GHS Important?

Why is the GHS Important – The Vision



Principles of Harmonization

Guiding Principles of the Global Harmonization Process

- Protection will not be reduced
- Will be based on intrinsic properties (hazards) of chemicals
- All types of chemicals will be covered
- All systems will have to be changed
- Involvement of all stakeholders should be ensured
- Comprehensibility must be addressed

Scope of the GHS

- Covers all hazardous chemical substances, dilute solutions and mixtures

- Pharmaceuticals, cosmetics, food additives and pesticide residues in food will not be covered at the point of intentional intake, but will be covered where workers may be exposed and in transportation.

Changes in OSHA Hazard Communication Standard

Three major areas of change are in hazard classification, labels and safety data sheets.

1. **Hazard classification:** The definitions of hazard have been changed to provide specific criteria for classification of health and physical hazards, as well as classification of mixtures. These specific criteria will help to ensure that evaluations of hazardous effects are consistent across manufacturers, and that labels and safety data sheets are more accurate as a result.

Changes in OSHA Hazard Communication Standard

2. **Labels:** Chemical manufacturers and importers will be required to provide a label that includes a harmonized signal word, pictogram, and hazard statement for each hazard class and category. Precautionary statements must also be provided.

3. **Safety Data Sheets:** Will now have a specified 16-section format

Label Changes Under HCS

- Under the revised HCS, once the hazard classification is completed, the standard specifies what information is to be provided for each hazard class and category. Labels will require the following elements:

- **Pictogram:** a symbol plus other graphic elements, such as a border, background pattern, or color that is intended to convey specific information about the hazards of a chemical. Each pictogram consists of a different symbol on a white background within a red square frame set on a point (i.e. a red diamond). There are nine pictograms under the GHS, but only eight pictograms under HCS.

Label Changes Under HCS

- **Signal words:** a single word used to indicate the relative level of severity of hazard and alert the reader to a potential hazard on the label. Signal words used are "danger" and "warning." "Danger" is used for more severe hazards, while "warning" is used for less severe hazards.
- **Hazard Statement:** a statement assigned to a hazard class and category that describes the nature of the hazard(s) of a chemical, including, where appropriate, the degree of hazard.
- **Precautionary Statement:** a phrase that describes recommended measures to be taken to minimize or prevent adverse effects resulting from exposure to a hazardous chemical, or improper storage or handling of a hazardous chemical.

GHS Elements

- Defined criteria used to assign a hazard classification includes:
  - Physical Hazards – 16 categories
  - Health Hazards – 10 categories
  - Environmental Hazards
- Mixtures - GHS classification guidance for when chemicals are mixed

Physical Hazards Classification

- Physical Hazards (16)
  - Explosives
  - Flammable Gases
  - Flammable Aerosols
  - Oxidizing Gases
  - Gases Under Pressure
  - Flammable Liquids
  - Flammable Solids
  - Self-Reactive Substances

Physical Hazards Classification

- Pyrophoric Liquids
- Pyrophoric Solids
- Self-Heating Substances
- Substances which, in contact with water, emit flammable gases
- Oxidizing Liquids
- Oxidizing Solids
- Organic Peroxides
- Corrosive to Metals

Health Hazards Classification

- **Health Hazards (10)**
  - Acute Toxicity
  - Skin Corrosion/Irritation
  - Serous Eye Damage/Eye Irritation
  - Respiratory or Skin Sensitization
  - Germ Cell Mutagenicity
  - Carcinogenicity
  - Reproductive Toxicology
  - Target Organ Systemic Toxicity – Single Exposure
  - Target Organ Systemic Toxicity – Repeated Exposure
  - Aspiration Toxicity

Environmental Hazard Classification

- **Hazardous to the Aquatic Environment**
  - Acute aquatic toxicity
  - Chronic aquatic toxicity
    - Bioaccumulation potential
    - Rapid degradability

Comprehensibility

- **Guiding Principles**
  - Information must be conveyed in more than one way.
  - Comprehensibility of the components of the system should take account of existing studies and evidence gained from testing.
  - Phrases used to indicate the degree (severity) of hazard should be consistent across different hazard types.

GHS Label Elements

- Product Identifier
- Supplier Identifier
- Chemical Identity
- Hazard Pictograms*
- Signal Words*
- Hazard Statements*
- Precautionary Information

*Standardized

Pictogram Shape & Color

- For transportation, pictograms will have background and symbol colors currently used.
- For other sectors, pictograms will have a black symbol with a red diamond. A black frame may be used for shipments within one country.
- Where a transport pictogram is present, the GHS pictogram for the same hazard should not appear.

HCS Pictograms & Hazards

Flame over circle  • Oxidizers	**Flame**  • Flammables • Pyrophorics • Self-Heating • Emits Flammable Gas • Self Reactives • Organic Peroxides	**Exploding bomb**  • Explosives • Self Reactives • Organic Peroxides
Skull and crossbones  • Acute toxicity (severe)	**Corrosion**  • Corrosives	**Gas cylinder**  • Gases under pressure
Health Hazard  • Carcinogen • Mutagenicity • Reproductive Toxicity • Respiratory Sensitizer • Target Organ Toxicity • Aspiration Toxicity	**Environment**  • Aquatic Toxicity	**Exclamation mark**  • Irritant • Skin Sensitizer • Acute Toxicity (harmful) • Narcotic effects • Respiratory Tract Irritation • Hazardous to Ozone Layer

Transport Pictograms

When must label information be updated?

- Chemical manufacturers, importers, distributors, or employers who become newly aware of any significant information regarding the hazards of a chemical shall revise the labels for the chemical within six months of becoming aware of the new information, and shall ensure that labels on containers of hazardous chemicals shipped after that time contain the new information.

- If the chemical is not currently produced or imported, the chemical manufacturer, importer, distributor, or employer shall add the information to the label before the chemical is shipped or introduced into the workplace again.

Will workplace labeling provisions change under the revised HCS?

- The current standard provides employers with flexibility regarding the type of system to be used in their workplaces and OSHA has retained that flexibility in the revised HCS.
- Employers may choose to label workplace containers either with the same label that would be on shipped containers for the chemical under the revised rule, or with label alternatives that meet the requirements for the standard.
- Alternative labeling systems such as the National Fire Protection Association 704 Hazard Rating and the Hazardous Material Information System (HMIS) are permitted for workplace containers. However, the information supplied on these labels must be consistent with the revised HCS, e.g., no conflicting hazard warnings or pictograms.

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Safety Data Sheets (SDS)

- The SDS should provide comprehensive information about a chemical substance or mixture.
- Primary Use: The Workplace
- Employers and workers use the SDS as a source of information about hazards and to obtain advice on safety precautions.

SDS Format

- Format of 16 sections SDS include the following:

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 control/personal protection

SDS Format

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

Phase-in Period for Revised HCS

Effective Compliance Date	Requirements	Who
December 1, 2013	Train employees on new SDS labels	Employers
June 1, 2015 December 1, 2015	Compliance with all modified provisions of final rule, except Distributor shall not ship containers labeled by chemical manufacturer or importer unless it is a GHS label	Chemical manufacturers, importers, distributors & importers
June 1, 2016	Update alternative workplace labeling & 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 (final standard), or the current standard, or both	Chemical manufacturers, importers, distributors & importers

What about Cal/OSHA?

Cal/OSHA's Consultation Service said last week that Cal/OSHA is required to update their regulations within six (6) months of the promulgation of the federal OSHA requirements.

This is part of the State Agreement with Federal OSHA. So watch for the changes that Cal/OSHA may make.

Proactive Steps to OSHA GHS Hazcom Compliance

- **Develop a comprehensive written Hazard Communication Plan.**

  This written plan outlines all of the sections of your organization's hazard communication program.

- **Inventory all chemicals.**

  Develop a process to identify and log all hazardous chemicals in a central site, including record keeping and updates.

Proactive Steps to OSHA GHS Hazcom Compliance

- **Establish & maintain a comprehensive Safety Data Sheet (SDS) program.**

  All SDS's (previously known as Material Safety Data Sheets, or MSDS's) need to be collected and readily accessible to employees at all times on site.

- **Label all containers, pipes and tanks.**

  Primary containers, secondary containers and pipe and storage pipes containing hazardous chemicals must be labeled according to the applicable hazard communication regulations and company-established programs.

Proactive Steps to OSHA GHS Hazcom Compliance

- **Train and communicate with your workforce.**

  All potentially affected employees must be fully trained according to the pertinent OSHA or Cal-OSHA regulations and your written hazard communication program.

- **Review and Update Your Hazard Communication Program**

  At least annually you need to review and update your written Hazard Communication Plan to reflect any changes in chemicals at the facility and prior to the training of your employees.

Information Resources

Contact: Bob Kuykendall –e-mail: denaligp@ix.netcom.com
925-602-2333

- http://www.osha.gov/dsg/hazcom/hazcom-faq.html
- http://www.osha.gov/dsg/hazcom/index.html