

The Globally Harmonized System (GHS) for Hazard Classification and Labeling



Development of a Worldwide System for Hazard Communication



What is the GHS?

- A common and coherent approach to defining and classifying hazards, and communicating information on labels and safety data sheets.
- Provides the underlying infrastructure for establishment of national, comprehensive chemical safety programs.



International Mandate

- An international mandate to harmonize was adopted at the United Nations Conference on the Environment and Development (UNCED) in 1992 in Brazil:
 - *A globally-harmonized hazard classification and compatible labelling system, including material safety data sheets and easily understandable symbols, should be available, if feasible, by the year 2000.*



Principles Of Harmonization

- Protections will not be reduced; comprehensibility will be key.
- All types of chemicals will be covered; will be based on intrinsic properties (hazards) of chemicals.
- All systems will have to be changed.



The Scope of the GHS

- Covers all hazardous chemical substances, dilute solutions, and mixtures.
- Pharmaceuticals, food additives, cosmetics 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 transport.



The GHS Elements

Classification Criteria

- Health and Environmental Hazards
- Physical Hazards
- Mixtures

Hazard Communication

- Labels
- Safety Data Sheets



Health & Environmental Hazards

Acute Toxicity

Skin Corrosion/Irritation

Serious Eye Damage/Eye Irritation

Respiratory or Skin Sensitization

Germ Cell Mutagenicity

Carcinogenicity

Reproductive Toxicity

Target Organ Systemic Toxicity – Single and Repeated Dose

Hazardous to the Aquatic Environment



Physical Hazards

Explosives

Flammability – gases, aerosols, liquids, solids

Oxidizers – liquid, solid, gases

Self-Reactive

Pyrophoric – liquids, solids

Self-Heating

Organic Peroxides

Corrosive to Metals

Gases Under Pressure

Water-Activated Flammable Gases



Labels

- The Working Group identified about 35 different types of information that are currently required on labels by different systems.
- To harmonize, key information elements needed to be identified.
- Additional harmonization may occur on other elements in time, in particular for precautionary statements.



Key Label Elements

Product identifier

Supplier identifier

Chemical identity

Hazard pictograms*

Signal words*

Hazard statements*

Precautionary information

***Standardized**



Pictogram Shape and Colour

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

GHS Pictograms



Explosive or self-reactive substance



Flammable or self-reactive



Oxidizer



Acutely Toxic



Corrosive to skin or eyes



Carcinogen, mutagen, or reproductive toxin



Irritant to skin, eyes or respiratory track



Environmental Hazard



Signal Words

“Danger” or “Warning”

- Used to emphasize hazard and discriminate between levels of hazard.
- GHS has also codified 82 specific, unique hazard statements



Hazard Statements

- A single harmonized hazard statement for each level of hazard within each hazard class
 - Example: Flammable liquids
 - Category 1: Extremely flammable liquid and vapour
 - Category 2: Highly flammable liquid and vapour
 - Category 3: Flammable liquid and vapour
 - Category 4: Combustible liquid



Precautionary Information

- GHS label should include appropriate precautionary information.
- The GHS document includes examples of precautionary statements which can be used.
- The intent is to harmonize precautionary statements in the future.



Role of the SDS in the GHS

- The SDS (safety data sheet) 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: 16 headings

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



Format: 16 headings (cont.)

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



Information Sources

- OSHA has a web page on the GHS:

[http://www.osha.gov/SLTC/
hazardcommunications/global.html](http://www.osha.gov/SLTC/hazardcommunications/global.html)

- Link for other pictograms
- <http://www.safetec.net/ghs/ghs-pictograms/>



■ Reference

The powerpoint was adapted from the PowerSource.com

<http://www.powershow.com/view/aba10->

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