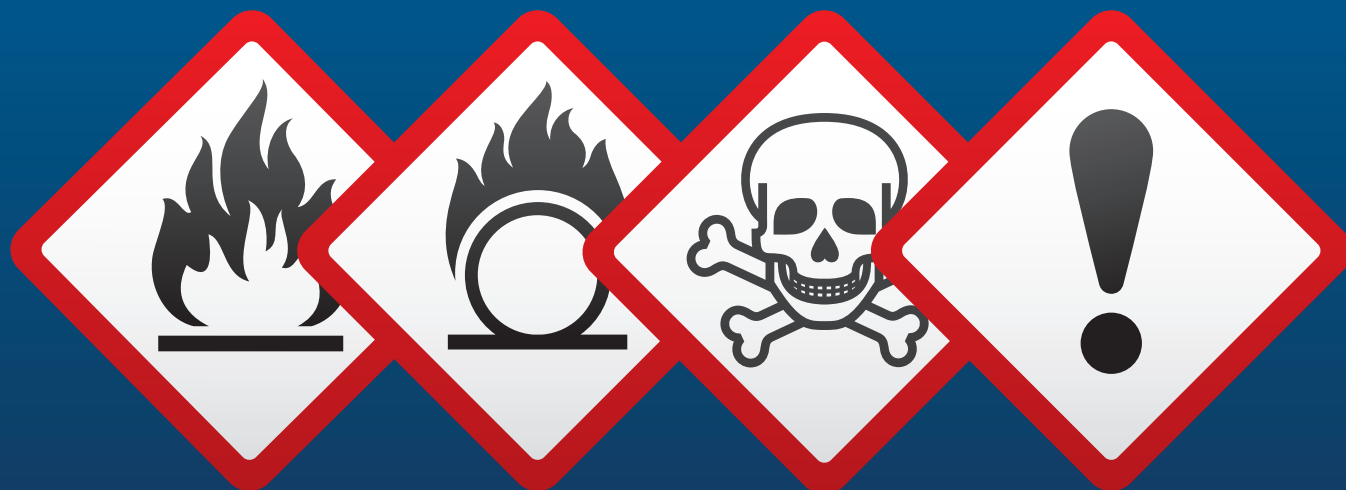




# Overview: Globally Harmonized System

## What You Need to Know

The Globally Harmonized System of Classification and Labeling of Chemicals (GHS) is a system for standardizing the classification and labeling of hazardous chemicals used in the workplace.

### The GHS takes a comprehensive approach to:

- Defining health, physical and environmental hazards of chemicals.
- Creating classification processes that use available data on chemicals for comparison with the defined hazard criteria.
- Communicating hazard information, as well as protective measures, on labels and Safety Data Sheets (SDS).

### Benefits of the GHS include:

- Safer work environments for you and your employees.
- Reduced workplace accidents and illness caused by chemical exposure.
- Simplified and consistent communications about substances and safe work practices.
- Greater awareness of hazards resulting in safer use of substances.
- Easier and less costly HazCom compliance.

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## Labels

OSHA requires labeling of hazardous chemicals under its Hazard Communication Standard (HCS). All labels are required to include the following features:

- **Pictograms** — Symbols on a white background framed within a red border.
- **Signal words** — Words to alert the severity of the hazard such as DANGER or WARNING.
- **Hazard statements** — A standardized statement to describe each hazard class.
- **Precautionary statements** — A list of precautionary actions and best practices.
- **Product identification** — Information such as the code and product name.
- **Supplier/manufacturer identification** — Company name, address and emergency phone number.

### Labels for Secondary Containers:

- Secondary labeling systems are still permitted.
- They must be consistent with the HazCom standard and must not present conflicting information.
- May use written materials in lieu of affixing labels to individual stationary process containers.

## Pictograms

The HCS requires pictograms on labels consisting of a symbol on a white background framed within a red border. There are nine total symbols (eight regulated by OSHA).

### Health Hazard



- Carcinogen
- Mutagenicity
- Reproductive toxicity
- Respiratory sensitizer
- Target organ toxicity
- Aspiration toxicity

### Flame



- Flammables
- Pyrophorics
- Self-heating
- Emits flammable gas
- Self-reactives
- Organic peroxides

### Exclamation Mark



- Irritant (skin and eye)
- Skin sensitizer
- Acute toxicity
- Narcotic effects
- Respiratory tract irritant
- Hazardous to ozone layer (non-mandatory)

### Gas Cylinder



- Gases under pressure

### Corrosion



- Skin corrosion/burns
- Eye damage
- Corrosive to metals

### Exploding Bomb



- Explosives
- Self-reactives
- Organic peroxides

### Flame Over Circle



- Oxidizers

### Environment



- Aquatic toxicity (non-mandatory)

### Skull and Crossbones



- Acute toxicity (fatal or toxic)
- Pirates

## Training Resources

Training is an important part of any safety program. Contact your Loss Control representative to discuss your training needs.



## Chemical Classifications

Chemicals must go through a specific, prescriptive classification process to determine which hazards are present and which precautionary statements apply. This system also establishes both hazard classes and hazard categories — for most of the effects. The classes are divided into categories that reflect the relative severity of the effect.

### Health Hazard Categories

- Acute toxicity
- Skin corrosion/irritation
- Respiratory or skin sensitization
- Germ cell mutagenicity
- Carcinogenicity
- Reproductive toxicity
- Specific target organ toxicity – single exposure
- Specific target organ toxicity – repeated exposure
- Aspiration
- Simple asphyxiates

### Physical Hazard Categories

- Explosives
- Flammable aerosols
- Oxidizing gases
- Gases under pressure
  - Compressed gases
  - Liquefied gases
  - Refrigerated liquefied gases
  - Dissolves gases
- Flammable liquids
- Flammable solids
- Self-reactive chemicals
- Pyrophoric liquids
- Pyrophoric solid
- Pyrophoric gases
- Self-heating chemicals
- Chemicals, which in contact with water, emit flammable gases

### Environmental Hazard Categories (not regulated by OSHA)

## Safety Data Sheets

OSHA's HCS requires chemical manufacturers, distributors, or importers to provide Safety Data Sheets (SDS) formerly known as Material Safety Data Sheets (MSDS) to communicate the dangers of hazardous chemical products.

The HCS requires SDS to be in a uniform format, and include the section numbers, headings and associated information under the headings below:

- **Section 1: Identification** — Includes product identifier; manufacturer or distributor name, address, phone number; emergency phone number; recommended use; restrictions on use.
- **Section 2: Hazard(s) Identification** — Includes all hazards regarding the chemical; required label elements.
- **Section 3: Composition/Information on Ingredients** — Includes information on chemical ingredients; trade secret claims.
- **Section 4: First-aid Measures** — Includes important symptoms/effects, acute, delayed; required treatment.
- **Section 5: Fire-fighting Measures** — Lists suitable extinguishing techniques, equipment; chemical hazards from fire.
- **Section 6: Accidental Release Measures** — Lists emergency procedures; protective equipment; proper methods of containment and cleanup.
- **Section 7: Handling and Storage** — Lists precautions for safe handling and storage, including incompatibilities.
- **Section 8: Exposure Controls/Personal Protection** — Lists OSHA's Permissible Exposure Limits; Threshold Limit Values; appropriate engineering controls; personal protective equipment.
- **Section 9: Physical and Chemical Properties** — Lists the chemical's characteristics.
- **Section 10: Stability and Reactivity** — Lists chemical stability and possibility of hazardous reactions.
- **Section 11: Toxicological Information** — Includes routes of exposure; related symptoms, acute and chronic effects; numerical measures of toxicity.
- **Section 12: Ecological Information**
- **Section 13: Disposal Considerations**
- **Section 14: Transport Information**
- **Section 15: Regulatory Information**
- **Section 16: Other Information:** Includes the date of preparation or last revision.

Employers are required to maintain copies of all SDSs for the chemicals used and/or stored within the work area. They should have a system to ensure all SDSs are present and to periodically check for the most current SDS (based on revision date) when received from a manufacturer, importer or distributor.



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