



Hazard Communication

GLOBALY HARMONIZED SYSTEM-GHS

Purpose

Ensure chemical safety in the workplace

OSHA's Hazard Communication Standard requires the development and dissemination of information about the identities and hazards of the chemicals must be available and understandable to workers.

WORKER RIGHTS UNDER OSH ACT

- ▶ *Workers are entitled to safe and healthful conditions. The OSH ACT provides workers with the right to:*
 - ▶ *Ask OSHA to inspect their workplace;*
 - ▶ *Review employers' records of work-related injuries and illnesses*
 - ▶ *Get copies of their medical records; and*
 - ▶ *Receive information and training about hazards and their prevention, using applicable OSHA standards.*

RIGHT-TO-KNOW

Federal Hazard Communication Standard, Title 29, Part 1910.1200 of the Code of Federal Regulations (29 CFR 1910.1200) mandates that “Workers have the right to know and understand the hazardous chemicals they use and how to work with them safely.”



- ▶ *This regulation is designed to make information about hazardous chemicals that are present in work places available to exposed employees.*
- ▶ *The hazard communication standard applies to any business, including manufacturers that use hazardous chemicals, regardless of the number of individuals employed.*

The Standard Responsibilities

- ❖ **Chemical Manufacturers**- Must determine the physical and health hazards of the products they make and provide that information to users.
- ❖ **Employers**- Must determine which workplace materials are hazardous and provide employees with the information, training, and equipment they need to protect themselves and others. Must determine which workplace materials are hazardous and provide employees with the information, training, and equipment they need to protect themselves and others.
- ❖ **Employees**-Must use their Right-to-Know knowledge to stay safe and healthy on the job. Must use their Right-to-Know knowledge to stay safe and healthy on the job.



What do you know?

- ❖ Chemicals have many valuable uses and are used often.
- ❖ Many chemicals also have hazards that can present risks to health and safety when they are used on the job.



Chemical Hazards

❖ Health Hazards

- **Acute Toxicity**
- **Skin corrosion/irritation**
- **Carcinogenicity**

ROUTES OF ENTRY

- Inhalation
- Ingestion
- Injection
- Skin Contact or Absorption



Physical Hazards

- ❖ Sudden release of pressure (explosion)
- ❖ Flammable (catches fire easily)
- ❖ Reactive (unstable chemicals)

What is GHS?

- ▶ The Globally Harmonized System (GHS) is an international approach to **chemical labels and safety data sheets** (SDS).
- ▶
- ▶ OSHA's Hazard Communication standard has adopted the GHS to improve safety and health of workers through more effective communications on chemical hazards.

Labeling

- ❖ Every container of hazardous chemicals is labeled by the manufacturer.
- ❖ Labels make it easy to find at a glance the chemical's possible hazards and basic steps to take to protect yourself against those risks.

Labels must have:

1. Product identifier
2. Symbols (Hazard pictograms)
3. Signal word
4. Hazard statement(s)
5. Precautionary statement(s)
6. Name, address, phone number of manufacturer, importer or responsible party



Requirements of a GHS Label

The Basic Parts of A GHS-Compliant Label

1 → **n-Propyl Alcohol**

UN No. 1274
CAS No. 71-23-8

2 → **DANGER**

3 → Highly flammable liquid and vapor. Causes serious eye damage.
May cause drowsiness and dizziness.

4 → Keep away from heat/sparks/open flames/hot surfaces. No smoking. Avoid breathing fumes/mist/vapours/spray. Wear protective gloves/protective clothing/eye protection/face protection. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present. Continue rinsing.

Fill Weight: 18.65 lbs. Lot Number: B56754434
Gross Weight: 20 lbs. Fill Date: 6/21/2013
Expiration Date: 6/21/2020

5 → Acme Chemical Company • 711 Roadrunner St. • Chicago, IL 60601 USA • www.acmechem.com • 123-444-5567

See SDS for further information.

6 → 

1. **Product Identifier** - Should match the product identifier on the Safety Data Sheet.
2. **Signal Word** - Either use "Danger" (severe) or "Warning" (less severe)
3. **Hazard Statements** - A phrase assigned to a hazard class that describes the nature of the product's hazards
4. **Precautionary Statements** - Describes recommended measures to minimize or prevent adverse effects resulting from exposure.
5. **Supplier Identification** - The name, address and telephone number of the manufacturer or supplier.
6. **Pictograms** - Graphical symbols intended to convey specific hazard information visually.

Pictograms

- ▶ A symbol plus a red diamond border intended to convey specific information about the hazards of a chemical.
- ▶ 4 Health Hazard Pictograms
- ▶ 5 Physical Hazard Pictograms



Health Hazard Pictogram- Corrosion



- ▶ Skin Corrosion/Burns
- ▶ Eye Damage



Health Hazard Pictogram- Exclamation Mark



- ▶ Irritant (skin and eye)
- ▶ Skin Sensitizer
- ▶ Acute Toxicity
- ▶ Narcotic Effects
- ▶ Respiratory Tract Irritant
- ▶ Hazardous to Ozone Layer (non-mandatory)

Health Hazard Pictogram- Health Hazard



- ▶ Carcinogen
- ▶ Mutagen
- ▶ Reproductive Toxicity
- ▶ Respiratory Sensitizer
- ▶ Target Organ Toxicity
- ▶ Aspiration Toxicity

Health Hazard Pictogram- Skull & Crossbones



- ▶ Acute Toxicity (fatal or toxic)

Physical Hazard Pictogram- Flame



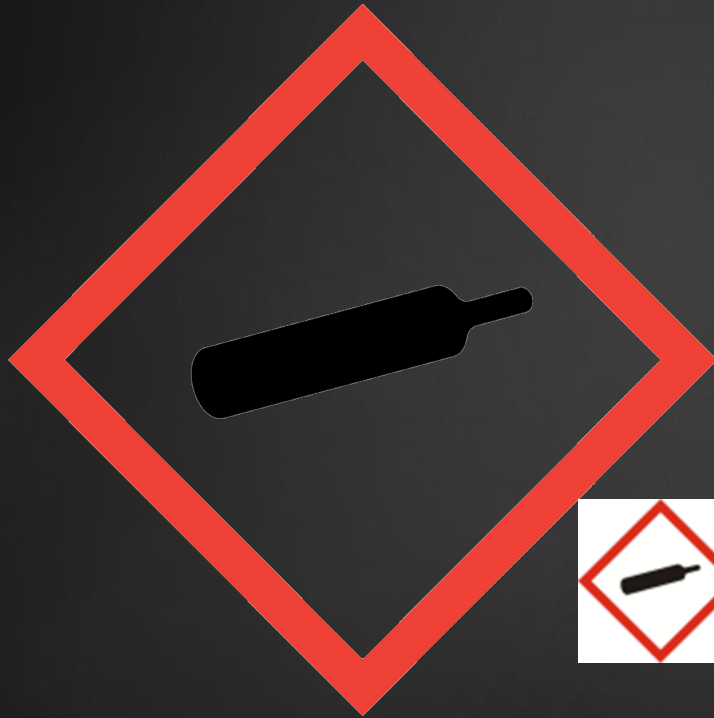
- ▶ Flammables
- ▶ Pyrophorics
- ▶ Self-Heating
- ▶ Emits Flammable Gas
- ▶ Self-Reactives
- ▶ Organic Peroxides

Physical Hazard Pictogram- Flame Over Circle



- ▶ Oxidizer –
a substance that is not necessarily combustible, but may, generally by yielding oxygen, cause or contribute to the combustion of other material

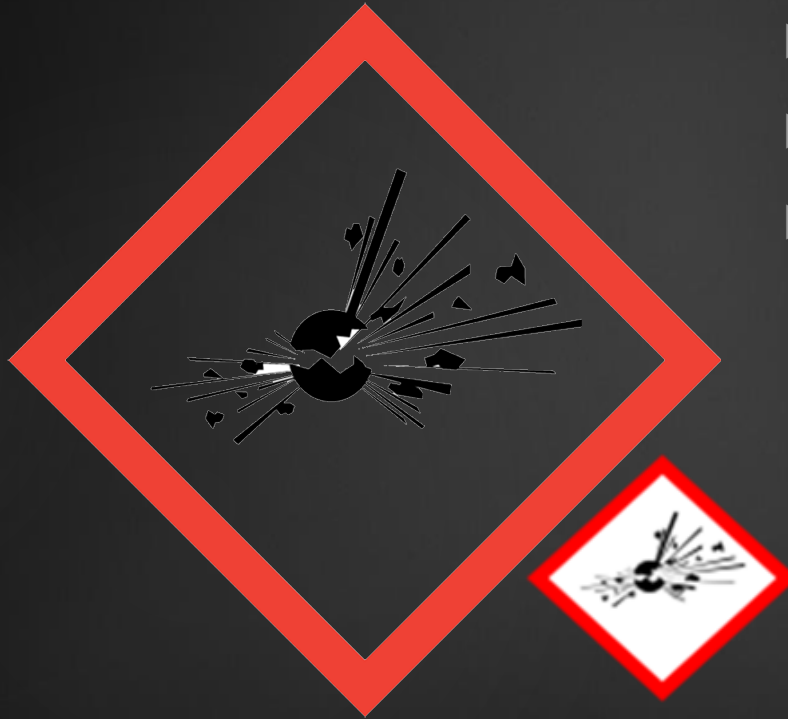
Physical Hazard Pictogram- Gas Cylinder



► Gases under pressure



Physical Hazard Pictogram- Exploding Bomb



- ▶ Explosives
- ▶ Self-Reactives
- ▶ Organic Peroxides

Physical Hazard Pictogram- Corrosion

► Corrosive to Metals



Non-mandatory Pictogram- Environment

► Aquatic Toxicity



Signal Words

- “Danger” – more severe hazards



- “Warning” – less severe hazards



HMIS/NFPA Labeling Systems

- ❖ **Blue** - Health
 - ❖ **Red** – Flammability
 - ❖ **Yellow** – Reactivity
 - ❖ **White** – Protective Equipment and Other
-
- ❖ Scale 0-4
 - 0 = no danger
 - 4 = highest danger



Safety Data Sheets (SDS)

- ▶ SDS are multi-page documents that contain more detailed information about a chemical than the container label.
- ▶ The revised HazCom standard requires that the information on the SDS is presented using consistent headings in a specific order.

Safety Data Sheets



1. Detailed information sheet prepared by manufacturer or importer
2. Available for every hazardous chemical or substance
3. Contains information that:
 - ❖ Enables you to prepare for safe day-to-day use
 - ❖ Enables you to respond in emergencies

16-Section SDS Format

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 Controls/Personal Protection
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

Location of SDS

- ❖ Specified work area

Your supervisor will inform you of the specific location

- ❖ GSU Office of Environmental Safety and Health

Conclusion

- ▶ Workers have the right to *know* and *understand* the hazardous chemicals they use and how to work with them safely.
- ▶ Always read the chemical label and make sure you understand the information before working with a chemical in the workplace.
- ▶ For more information, refer to the Safety Data Sheet.