

ESH196A - HAZARD COMMUNICATION (E-LEARNING)

Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

INTRODUCTION

This program was prepared to tell you about the Occupational Safety and Health Administration (OSHA) Hazard Communication Standard (HazCom).

In this presentation, we will:

- Discuss elements of the Standard
- Identify the label elements
- Outline the Safety Data Sheet format

Why am I required to take this course?

For people who work with chemicals every day, it is obvious that this training is necessary.

However, even if you work in an office and don't really use chemicals, you need the training.

Many offices are close to laboratories, workshops or other facilities where hazardous chemicals are used. Chemicals may be moved through the corridor outside of your office for example.

Being aware of the new labeling and safety data sheet system will help you understand the hazards of the chemicals where you work.

OSHA HAZARD COMMUNICATION STANDARD

The OSHA Hazard Communication Standard requires employers to provide information to their employees about the hazardous chemicals to which they are exposed. This is done using a hazard communication program, chemical container labels and other forms of warning, safety data sheets, and information and training.

In addition, this Standard requires chemical manufacturers, distributors or importers to evaluate the hazards of chemicals that are produced.

GHS BENEFITS

OSHA revised the HazCom Standard to align with the United Nations' Globally Harmonized System of Classification and Labeling of Chemicals (GHS) on March 26, 2012.

The revision changes this performance-based Standard to one with more structured requirements for labeling of chemicals.

The Globally Harmonized System is recognized internationally, which means:

- More standardized labels and safety data sheets
- Increased efficiency and reduced costs
- Increased worker understanding of hazards
- Increased safety



GHS ELEMENTS OF THE HAZCOM STANDARD

1. Standardized GHS hazard classification requirements

- Manufacturers, distributors and importers of hazardous chemicals will use the objective GHS hazard classification system.
- The hazard classification will address health and physical hazards of chemicals and chemical mixtures.

If you would like to learn more about hazard classification, click [here](#).

2. Chemical container labels

Container label requirements are based on how the container is used. Labels used on **shipped** containers have the most information, **workplace** containers have less, and portable **containers** have none.

The **shipped** container (also known as the manufacturer, primary, or original container) is the container from the distributor, manufacturer or importer, shipped to the end user.

The **shipped** container label includes:

- Product name or identifier
- signal word, either "danger" or "warning"
- pictogram(s)
- hazard statement(s)
- precautionary statement(s)

The **workplace** container (also known as the second container) is the container into which a chemical is transferred and for use only by workers in the workplace. It can be a closed container in a hood or on a benchtop in a multi-occupant area. An example is a squeeze bottle of solvent on a workbench or lab bench filled from a stock container.

The **workplace** container label can be a shipped container label, or include:

- Product name or identifier - Common names are acceptable. Chemical structures, obscure initials or codes are generally not adequate unless they can be identified by the user from hazard information sources or an SDS.
- Hazard information - Labels can include hazard warnings, such as "toxic", "[carcinogenic](#)", and other health, reactivity and flammability information. Use of the HMIS rating (Hazardous Materials Identification System) and NFPA 704 diamond (Standard System for the Identification of the Hazards or Materials for Emergency Response), is acceptable.

The **portable** container (also known as the immediate use container) is the container into which chemical is transferred and only for immediate use (i.e., within a work shift) of employee who performs the transfer. An example is an open tray of paint.

The portable container label has no labeling requirements, though labeling with at least the product identifier is a best practice.

3. Safety Data Sheets (SDS)

- 16 section format.

Click here to see [SDS example](#).

PICTOGRAMS










Shipped chemical container labels include pictograms.

Pictograms contain the hazard symbols plus text.

A pictogram may represent more than one hazard. More than one pictogram may appear on a label or SDS.

Downloadable PDF of the "Pictograms and Hazards" chart is available [here](#).

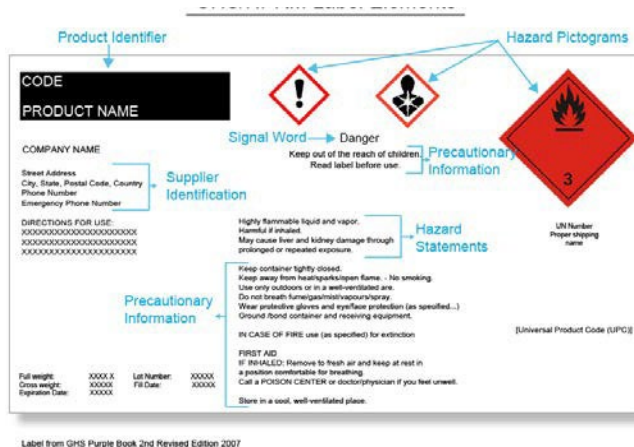
HCS Pictograms and Hazards

Health Hazard	Flame	Exclamation Mark
 <ul style="list-style-type: none">CarcinogenMutagenicityReproductive ToxicityRespiratory SensitizerTarget Organ ToxicityAspiration Toxicity	 <ul style="list-style-type: none">FlammablesPyrophoricsSelf-HeatingEmits Flammable GasSelf-ReactivesOrganic Peroxides	 <ul style="list-style-type: none">Irritant (skin and eye)Skin SensitizerAcute ToxicityNarcotic EffectsRespiratory Tract IrritantHazardous to Ozone Layer (Non-Mandatory)
Gas Cylinder	Corrosion	Exploding Bomb
 <ul style="list-style-type: none">Gases Under Pressure	 <ul style="list-style-type: none">Skin Corrosion/BurnsEye DamageCorrosive to Metals	 <ul style="list-style-type: none">ExplosivesSelf-ReactivesOrganic Peroxides
Flame Over Circle	Environment (Non-Mandatory)	Skull and Crossbones
 <ul style="list-style-type: none">Oxidizers	 <ul style="list-style-type: none">Aquatic Toxicity	 <ul style="list-style-type: none">Acute Toxicity (fatal or toxic)

GHS LABELS ELEMENTS

The HazCom Standard requires chemical manufacturers, importers, or distributors to ensure that each hazardous chemical container leaving the workplace is labeled with the following information:

- **Product Name or Identifier (Chemical Identity)**
- **Signal Word**, either "danger" or "warning"
- **Hazard Statement(s)**
- **Precautionary Statement(s)**
- **Pictogram(s)**
- **Name, Address and Telephone Number (Supplier Identifier)**
- **Supplemental Information (optional)**



See [Label Example](#), [Label Elements](#), and [Workplace Labels](#) for more details.

SAFETY DATA SHEET ELEMENTS

Safety Data Sheets (SDSs) provide information about chemical hazards and safety precautions.

The SDS contains 16 headings:

1. Identification
2. Hazards Identification
3. Composition/ingredients
4. First Aid Measures
5. Firefighting Measures
6. Accidental Release Measures
7. Handling /Storage
8. Exposure Control/Personal Protection (PPE)
9. Physical and Chemical Properties
10. Stability and Reactivity
11. Toxicology Information
12. Ecological Information (optional)
13. Disposal (optional)
14. Transport Information (optional)
15. Regulatory Information (optional)
16. Other (revision information)

For an example, [click here](#)

HAZARD EVALUATION

When a newly synthesized chemical or mixture (NSCOM) is produced at Argonne and will be used by or shipped to others, an evaluation of the health and physical hazards is required. Research samples are not exempt from the need to perform a hazard evaluation.

- Hazard evaluation identifies the health and physical hazards, so it can be communicated to those who use, handle, transport, ship, receive, and dispose of the material.
- Hazard evaluation supports selection of a health and physical hazard classification. Hazard classification is used to meet on-site transportation and off-site shipping requirements, to prepare SDSs and chemical container labels, and support work planning.
- Hazard evaluation determines a hazard class and a hazard category, or substantiates the lack of hazard. The evaluation is based on the objective criteria in the OSHA Haz Com Standard.
- The hazard evaluation process is automated using sink form ANL-1078, Chemical Hazard Evaluation.

For more information on GHS
contact Industrial Hygiene (2-2881)
visit the [OSHA website](#)