Hazard Communication and GHS

General
Carl Albert State College

Health hazards

Health hazards cause health effects upon exposure

- Acutely toxic
- Chronically toxic
- Carcinogenic
- Mutagenic
- Teratogenic
- Sensitizing agent
- Corrosive
- Irritant

Physical hazards include any chemical that is:

- Combustible liquid
- Compressed gas
- Explosive
- Flammable
- Organic peroxide
- Oxidizer
- Pyrophoric
- Unstable (reactive)
- Water-reactive

Hazard communication program

- Must comply with Hazard Communication Standard - 29 CFR 1910.1200

Hazard communication program

Written program must include:

- a list of hazardous chemicals present in the workplace

Located in each building on campus

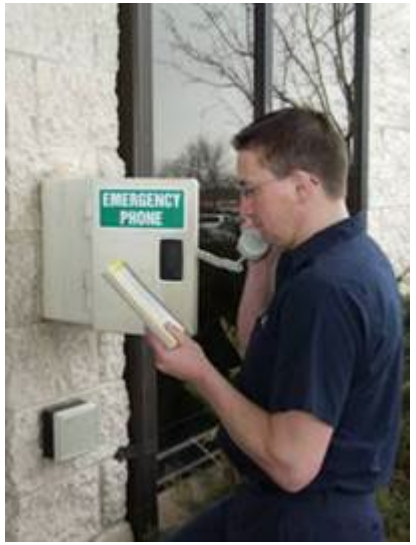
- SDS

- labeling system information

Hazard communication program

Written program must include:

- employee training information
- information regarding non-routine hazards
- methods of informing employers of other workers (contractors)



Hazard communication program

- Written program does not have to be accessible to every work area and every work shift

- Written program is available to workers upon request

Accessing Hazcom documents

- Workers must know how to obtain, and the location of:
  - the written hazard communications program
  - lists of hazardous chemicals
  - MSDSs

Protective measures

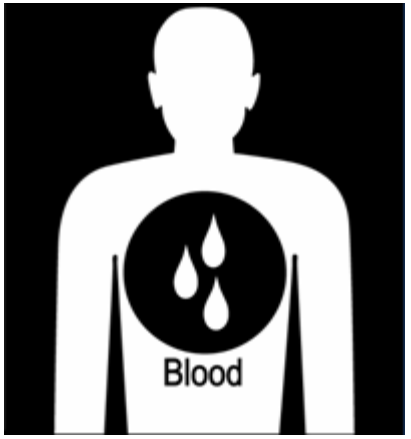
- Work practices
- Engineering controls
- Personal protective equipment

Safety data sheets

- Primary tool for getting detailed chemical information
- Must be readily available

Safety data sheets include

- Chemical identity
- Physical and chemical characteristics
- Physical and health hazards
- Primary routes of entry



Safety data sheets include

- PEL, TLV, other exposure limits
- Whether it is a carcinogen
- Precautions for safe handling/use
- Recommended engineering controls

Safety data sheets include

- Emergency first aid procedures
- Date of preparation
- Name, address, phone number of manufacturer, importer, responsible party

Safety data sheets

- MSDSs may contain recommendations from ANSI
- MSDSs also provide information regarding:
  - signs and symptoms of exposure
  - personal protective equipment
  - spill and leak clean-up
  - labeling information

Each chemical must have an SDS

- SDS must be available to downstream employers from:
  - chemical manufacturers
  - importers
  - distributors

Labeling requirements

- Labels warn of potential dangers
- Labels are not intended to be the sole source of information

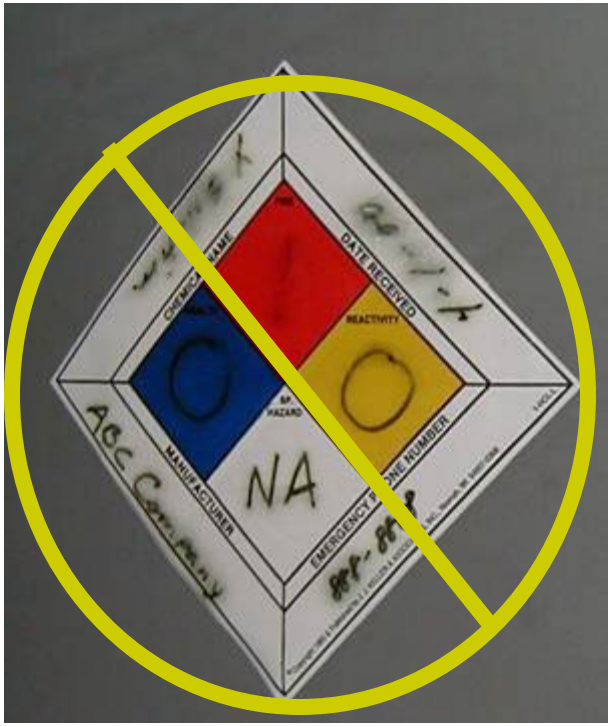
- Labels serve as an immediate warning

Labeling requirements

- Labels must be keyed to MSDSs
- Labels must contain:
  - the identity of the hazardous chemical
  - appropriate hazard warnings
  - the name, address of the chemical manufacturer, importer, other responsible party

Labeling requirements

- Ensure that labels do not come off, become smudged or unreadable



- For hard-to-label containers, use:
  - signs or placards
  - process sheets, or batch tickets

Labeling requirements

- Be able to quickly identify the general hazard of any material:
  - NFPA system identifies:
    - health hazards
    - flammability hazards
    - reactivity hazards
    - special hazards

Labeling requirements

- Be able to quickly identify the general hazard of any material:
  - HMIS system identifies
    - health hazards
    - flammability hazards
    - physical hazards

Hazards of non-routine tasks

- Know what chemicals you work with and their hazards
- Know the contents of pipes

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GHS

- The GHS enhanced worker comprehension resulting in appropriate handling and use of chemicals. The harmonized format of the safety data sheets will enable workers to access the information more efficiently

GHS

- A ‘Health Hazard’ means a chemical which is classified as posing one of the following hazardous effects:
  - Acute Toxicity (any route of exposure)
  - Skin Corrosion or Irritation
  - Serious Eye Damage or Eye Irritation
  - Respiratory or Skin Sensitization
  - Carcinogenicity
  - Reproductive Toxicity

GHS

- A ‘Physical Hazard’ means a chemical that is classified as posing one of the following hazardous effects:
  - Explosive
  - Flammable (gases, aerosols, liquids, or solids)
  - Oxidizer (liquid, solid, or gas)
  - Self-Reactive
  - Self-Heating
  - Organic Peroxide
  - Corrosive To Metal
  - Gas Under Pressure

GHS Labels

- Three standardized HCS label elements:
  - Symbols (Hazard Pictograms) that convey health, physical, and environmental hazard information assigned to a GHS hazard class and category
  - Signal Words "Danger" or "Warning" used to emphasize hazards and relative level of severity of the hazard and assigned to a GHS hazard class and category
  - Hazard Statements which are standard phrases assigned to a hazard class and category that describe the nature of the hazard

Labels

SAMPLE LABEL

CODE _____
Product Name_____

Product Identifier

Company Name_____
Street Address_____
City_____ State_____
Postal Code_____Country_____
Emergency Phone Number_____

Supplier Identification

Hazard Pictograms

Signal Word
Danger

Hazard Statements

Highly flammable liquid and vapor.
May cause liver and kidney damage.

Precautionary Statements

Keep container tightly closed. Store in a cool, well-ventilated place that is locked.
Keep away from heat/sparks/open flame. No smoking.
Only use non-sparking tools.
Use explosion-proof electrical equipment.
Take precautionary measures against static discharge.
Ground and bond container and receiving equipment.
Do not breathe vapors.
Wear protective gloves.
Do not eat, drink or smoke when using this product.
Wash hands thoroughly after handling.
Dispose of in accordance with local, regional, national, international regulations as specified.

In Case of Fire: use dry chemical (BC) or Carbon Dioxide (CO_2) fire extinguisher to extinguish.

First Aid
If exposed call Poison Center.
If on skin (or hair): Take off immediately any contaminated clothing. Rinse skin with water.

Supplemental Information

Directions for Use
_____
_____
_____

Fill weight:_____ Lot Number:_____
Gross weight:_____ Fill Date:_____
Expiration Date:_____

Pictograms

HCS Pictograms and Hazards

Health Hazard	Flame	Exclamation Mark
		
▪ Carcinogen ▪ Mutagenicity ▪ Reproductive Toxicity ▪ Respiratory Sensitizer ▪ Target Organ Toxicity ▪ Aspiration Toxicity	▪ Flammables ▪ Pyrophorics ▪ Self-Heating ▪ Emits Flammable Gas ▪ Self-Reactives ▪ Organic Peroxides	▪ Irritant (skin and eye) ▪ Skin Sensitizer ▪ Acute Toxicity ▪ Narcotic Effects ▪ Respiratory Tract Irritant ▪ Hazardous to Ozone Layer (Non-Mandatory)
Gas Cylinder	**Corrosion**	**Exploding Bomb**
		
▪ Gases Under Pressure	▪ Skin Corrosion/Burns ▪ Eye Damage ▪ Corrosive to Metals	▪ Explosives ▪ Self-Reactives ▪ Organic Peroxides
Flame Over Circle	**Environment** (Non-Mandatory)	**Skull and Crossbones**
		
▪ Oxidizers	▪ Aquatic Toxicity	▪ Acute Toxicity (fatal or toxic)

Transport "Pictograms"		
		
Flammable Liquid Flammable Gas Flammable Aerosol	Flammable solid Self-Reactive Substances	Pyrophorics (Spontaneously Combustible) Self-Heating Substances
		
Substances, which in contact with water, emit flammable gases (Dangerous When Wet)	Oxidizing Gases Oxidizing Liquids Oxidizing Solids	Explosive Divisions 1.1, 1.2, 1.3
		
Explosive Division 1.4	Explosive Division 1.5	Explosive Division 1.6
		
Compressed Gases	Acute Toxicity (Poison): Oral, Dermal, Inhalation	Corrosive
		
Marine Pollutant	Organic Peroxides	

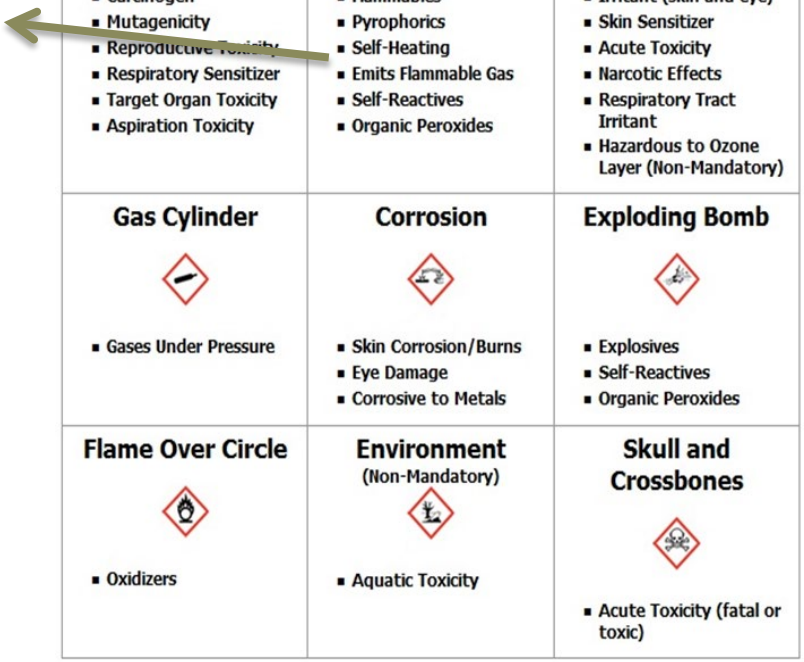
HCS Pictograms

Table 3: GHS Label Elements for Flammable (and Combustible) Liquids

	Category 1	Category 2	Category 3	Category 4
Symbol				No symbol
Signal Word	Danger	Danger	Warning	Warning
Hazard Statement	Extremely flammable liquid and vapor	Highly flammable liquid and vapor	Flammable liquid and vapor	Combustible liquid

Hazard Classes may have 'Categories'

ACUTE ORAL TOXICITY – Annex 1					
	Category 1	Category 2	Category 3	Category 4	Category 5
LD_{50}	≤ 5 mg/kg	> 5 < 50 mg/kg	≥ 50 < 300 mg/kg	≥ 300 < 2000 mg/kg	≥ 2000 < 5000 mg/kg
Pictogram					No symbol
Signal word	Danger	Danger	Danger	Warning	Warning
Hazard statement	Fatal if swallowed	Fatal if swallowed	Toxic if swallowed	Harmful if swallowed	May be harmful if swallowed



Resources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Hazard Communication Safety Data Sheets

The Hazard Communication Standard (HCS) requires chemical manufacturers, distributors, or importers to provide Safety Data Sheets (SDSs) (formerly known as Material Safety Data Sheets or MSDSs) to communicate the hazards of hazardous chemical products. As of June 1, 2015, the HCS will require new SDSs to be in a uniform format, and include the section numbers, the headings, and associated information under the headings below:

Section 1, Identification includes product ide… manufacturer or distributor name, address, … number; emergency phone number; recomm… restrictions on use.

Section 2, Hazard(s) identification includes … regarding the chemical; required label elemen…

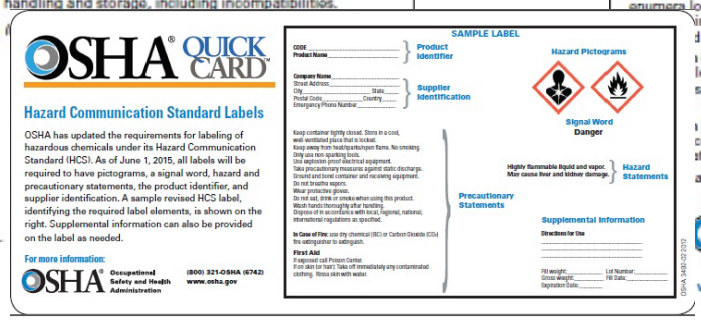
Section 3, Composition/information on ingr… includes information on chemical ingredient… claims.

Section 4, First-aid measures includes impor… toms/effects, acute, delayed; required treatm…

Section 5, Fire-fighting measures lists suitabl… techniques, equipment; chemical hazards from …

Section 6, Accidental release measures lists … procedures; protective equipment; proper m… containment and cleanup.

Section 7, Handling and storage lists precau… handling and storage, including incompatibilities.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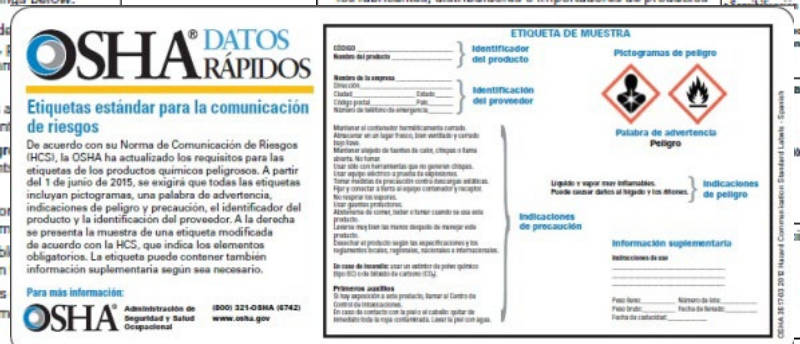
Hazard Communication Standard Labels

OSHA has updated the requirements for labeling of hazardous chemicals under its Hazard Communication Standard (HCS). As of June 1, 2015, all labels will be required to have pictograms, a signal word, hazard and precautionary statements, the product identifier, and supplier identification. A sample revised HCS label, identifying the required label elements, is shown on the right. Supplemental information can also be provided on the label as needed.

For more information:
OSHA Occupational Safety and Health Administration (800) 321-OSHA (6742) www.osha.gov

SAMPLE LABEL

Product Identifier
Supplier Identification
Hazard Pictograms
Signal Word
Danger
Hazard Statements
Precautionary Statements
Supplemental Information


OSHA® DATOS RÁPIDOS

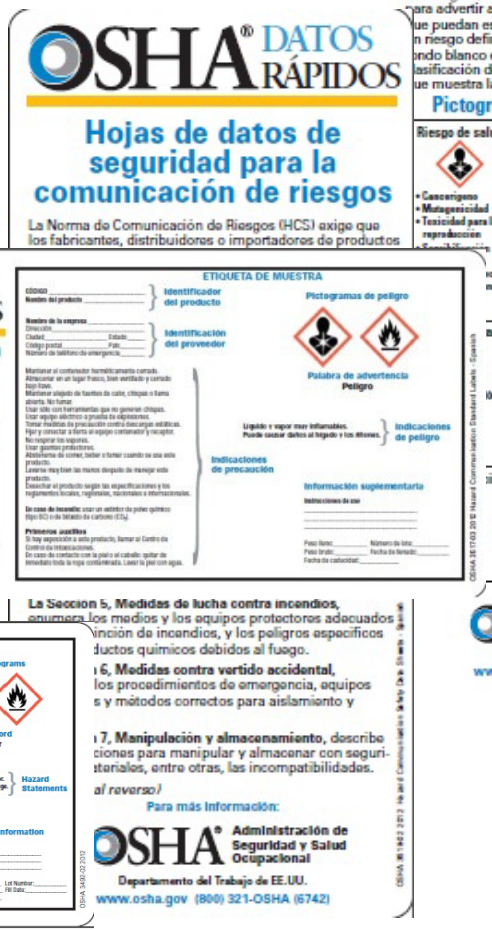
Etiquetas estándar para la comunicación de riesgos

De acuerdo con su Norma de Comunicación de Riesgos (HCS), la OSHA ha actualizado los requisitos para las etiquetas de los productos químicos peligrosos. A partir del 1 de junio de 2015, se exigirá que todas las etiquetas incluyan pictogramas, una palabra de advertencia, indicaciones de peligro y precaución, el identificador del producto y la identificación del proveedor. A la derecha se presenta la muestra de una etiqueta modificada de acuerdo con la HCS, que indica los elementos obligatorios. La etiqueta puede contener también información suplementaria según sea necesario.

Para más información:
OSHA Administración de Seguridad y Salud Ocupacional (800) 321-OSHA (6742) www.osha.gov

ETIQUETA DE MUESTRA

Identificador del producto
Identificación del proveedor
Pictogramas de peligro
Palabra de advertencia
Peligro
Indicaciones de peligro
Indicaciones de precaución
Información suplementaria


OSHA® DATOS RÁPIDOS

Hojas de datos de seguridad para la comunicación de riesgos

La Norma de Comunicación de Riesgos (HCS) exige que los fabricantes, distribuidores o importadores de productos

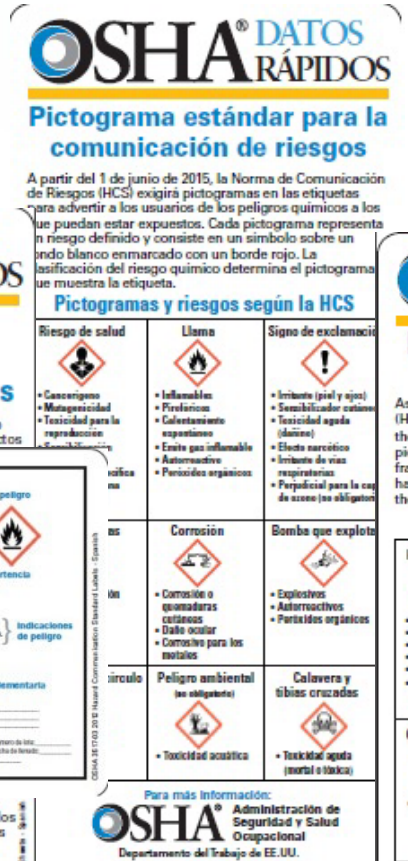
La Sección 5, Medidas de lucha contra incendios, enumera los medios y los equipos protectores adecuados … nición de incendios, y los peligros específicos … ductos químicos debidos al fuego.

… 6, Medidas contra vertido accidental, … los procedimientos de emergencia, equipos … s y métodos correctos para aislamiento y …

… 7, Manipulación y almacenamiento, describe … ciones para manipular y almacenar con seguri… …teriales, entre otras, las incompatibilidades.

… al reverso)

Para más información:
OSHA Administración de Seguridad y Salud Ocupacional
Departamento del Trabajo de EE.UU.
www.osha.gov (800) 321-OSHA (6742)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Pictograma estándar para la comunicación de riesgos

A partir del 1 de junio de 2015, la Norma de Comunicación de Riesgos (HCS) exigirá pictogramas en las etiquetas … para advertir a los usuarios de los peligros químicos a los … ue puedan estar expuestos. Cada pictograma representa … n riesgo definido y consiste en un símbolo sobre un … ndo blanco enmarcado con un borde rojo. La … lasificación del riesgo químico determina el pictograma … ue muestra la etiqueta.

Pictogramas y riesgos según la HCS

Riesgo de salud	Llama	Signo de exclamación
• Cancerígeno • Mutagenicidad • Toxicidad para la reproducción	• Inflamables • Pirofóricos • Calentamiento espontáneo • Emite gas inflamable • Autorreactivo • Peróxidos orgánicos	• Irritante (piel y ojos) • Sensibilizador cutáneo • Toxicidad aguda (dañino) • Efecto narcótico • Irritante de vías respiratorias • Perjudicial para la capa de ozono (no obligatorio)
Corrosión	Bomba que explota	
• Corrosión o quemaduras cutáneas • Daño ocular • Corrosivo para los metales	• Explosivos • Autorreactivos • Peróxidos orgánicos	
Peligro ambiental (no obligatorio)	Calavera y tibias cruzadas	
• Toxicidad acuática	• Toxicidad aguda (mortal o tóxica)	

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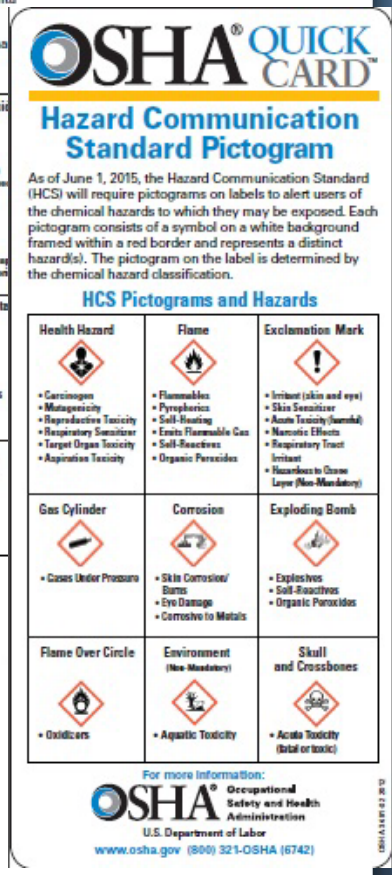
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Hazard Communication Standard Pictogram

As of June 1, 2015, the Hazard Communication Standard (HCS) will require pictograms on labels to alert users of the chemical hazards to which they may be exposed. Each pictogram consists of a symbol on a white background framed within a red border and represents a distinct hazard(s). The pictogram on the label is determined by the chemical hazard classification.

HCS Pictograms and Hazards

Health Hazard	Flame	Exclamation Mark
• Carcinogen • Mutagenicity • Reproductive Toxicity • Respiratory Sensitizer • Target Organ Toxicity • Aspiration Toxicity	• Flammables • Pyrophorics • Self-Heating • Emits Flammable Gas • Self-Reactives • Organic Peroxides	• Irritant (skin and eye) • Skin Sensitizer • Acute Toxicity (harmful) • Narcotic Effects • Respiratory Tract Irritant • Hazardous to Ozone Layer (Non-Mandatory)
Gas Cylinder	Corrosion	Exploding Bomb
• Gases Under Pressure	• Skin Corrosion/ Burns • Eye Damage • Corrosive to Metals	• Explosives • Self-Reactives • Organic Peroxides
Flame Over Circle	Environment (Non-Mandatory)	Skull and Crossbones
• Oxidizers	• Aquatic Toxicity	• Acute Toxicity (fatal or toxic)

For more information:
OSHA Occupational Safety and Health Administration
U.S. Department of Labor
www.osha.gov (800) 321-OSHA (6742)