METRA

Metropolitan Environmental TRaining Alliance

GHS

Globally Harmonized System of Classification and Labeling of Chemicals

Occupational Safety and Health Act of 1970

- Established the Occupational Safety and Health Administration
- Purpose:
  - Assure safe and healthful workplaces
  - Set and enforce standards
  - Provide training, outreach, education and assistance

OSHA Says Employers Need To:

Provide a safe and healthful workplace

Comply with all applicable OSHA standards

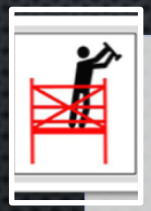
Comply with the General Duty Clause—keep your employees' workplace free of serious recognized hazards

At one point in history, mules were more valued than workers.

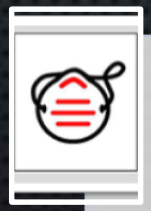
OSHA's 2017 Top 10 Most Cited Violations

1. Fall protection

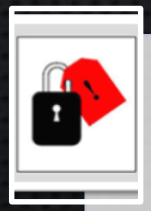
2. Hazard communication standard



3. Scaffolding



4. Respiratory protection

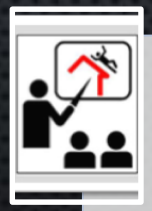


5. Lockout/Tagout

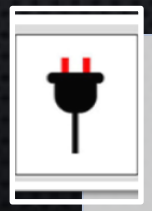
6. Ladders

7. Powered industrial trucks

8. Machinery and Machine Guarding



9. Fall Protection–Training



10. Electrical

Fatality Reporting

Employer must report to OSHA within 8 hours

Reports of fatalities for CY17-18. (The information is not comprehensive. We continue to update it as data becomes available).

Fatality summaries are listed in descending order from newest to oldest.

www.osha.gov/dep/fatcat/dep_fatcat.html

Date of Incident	City	Select State	Hazard Description	Inspection Number	Federal or State Plan	Citation Issued Related to Fatality
Date	City	FL	Keyword	Number	Select Category	Select Yes or No
06/06/2018	O Brien	FL	Worker fatally injured from gas cylinder explosion.	1321482	Federal	No
05/01/2018	Orange City	FL	Worker fatally struck by paver.	1313929	Federal	Yes
04/27/2018	Cape Coral	FL	Worker fatally crushed by truck being towed.	1313813	Federal	No
04/06/2018	Century			)7217	Federal	No
04/04/2018	Palm Coas			)6504	Federal	Yes
04/04/2018	Palm Coast	FL	Worker fatally struck by vehicle.	1306693	Federal	No
03/15/2018	Miami	FL	Worker died in structure collapse.	1303015	Federal	No
03/11/2018	Alva	FL	Worker electrocuted when metal ladder contacted power line.	1301193	Federal	Yes
03/08/2018	Orlando	FL	Worker fatally crushed between a rebar cage and rack stand.	1300348	Federal	Yes
03/05/2018	South Bay	FL	Worker fatally struck by tractor trailer.	1299289	Federal	No

Click on Inspection Number

Ownership:	Private			
Safety/Health:	Safety	Close Conference:		
		Close Case:		
Related Activity:	Type	ID	Safety	Health
	Accident	1316651		

Case Status: PENDING PENALTY PAYMENT

Violation Summary

	Serious	Willful	Repeat	Other	Unclass	Total
Initial Violations	1					1
Current Violations	1					1
Initial Penalty	$12,934	$0	$0	$0	$0	$12,934
Current Penalty	$11,641	$0	$0	$0	$0	$11,641
FTA Amount	$0	$0	$0	$0	$0	$0

Violation Items

#	ID	Type	Standard	Issuance	Abate	Curr$	Init$	Fta$	Contest	LastEvent
1.	01001	Serious	5A0001	09/06/2018		$11,641	$12,934	$0		I - Informal Settlement

Accident Investigation Summary

Summary Nr: 103704.015	Event: 03/08/2018	Employee Is Killed When Crushed By Steel Cage

At 10:30 a.m. on March 8, 2018, Employee #1 was shimming a piece of 2 inch by 4 inch lumber underneath a rack stand while a coworker was hitting a stand, loaded by a rebar cage, with a sledgehammer. The rebar cage shifted, causing the rack stand to fall over and trap Employee #1 between the rebar cage and the horizontal beam of the rack stand. Employee #1's torso was crushed, resulting in his death.

Keywords: rebar, crushed, struck by

	Inspection			Degree	Nature	Occupation
1	1300348.015			Fatality	Other	Construction trades, n.e.c.

Company name

Penalty and Seriousness of Violation

Summary of the accident investigation

Right To Know vs Right to Understand

The original Hazard Communication Standard approached worker safety from the standpoint all employees had a right to know about hazards in their workplace.

GHS says employees have a right to understand the hazards in their workplace.

The GHS Approach

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

Why Do We Need GHS?

- GHS aligns the U.S. with the rest of the world—uses the United Nations global chemical labeling system
- Prevents an estimated 43 deaths per year
- Enhances productivity in the U.S. by $475 million

http://www.osha.gov/dsg/hazcom/ghs-final-rule.html

UNITED STATES DEPARTMENT OF LABOR

Find it in OSHA

A TO Z INDEX

Occupational Safety and Health Administration

English | Spanish

ABOUT OSHA | WORKERS | EMPLOYERS | REGULATIONS | ENFORCEMENT | TOPICS | NEWS & PUBLICATIONS | DATA | TRAINING

Hazard Communication / HCS/HazCom 2012 Final Rule & Appendices

HCS/HazCom 2012 Final Rule & Appendices

HCS/HazCom 2012 Final Rule & Appendices

Hazard Communication/HazCom 2012 Final Rule [PDF* 52 MB]

HCS/HazCom 2012 Regulatory Text | [PDF* 92 KB]

Appendix A [PDF* 422 KB]

Appendix B [PDF* 170 KB]

Appendix C [PDF* 570 KB]

Appendix D [PDF* 91 KB]

Appendix E [PDF* 33 KB]

Appendix F [PDF* 150 KB]

Comparison of Existing (HazCom 1994) and Revised HCS (HazCom 2012)

Side-by-side

Redline Strikeout of the Regulatory Text

Appendices
A: Health Hazard Criteria
B: Physical Hazard Criteria
C: Label Elements
D: Safety Data Sheets
E: Trade Secrets
F: Carcinogenicity

www.osha.gov/dsg/hazcom

ABOUT OSHA | WORKERS | EMPLOYERS | REGULATIONS | ENFORCEMENT | TOPICS | NEWS & PUBLICATIONS | DATA | TRAINING

Hazard Communication

The standard that gave workers the right to know, now gives them the right to understand.

Safety Data Sheets | Labeling | Pictograms | Interpretations | Standards | Guidance | International | FAQ's | Additional Information

The Hazard Communication Standard (HCS) is now aligned with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS). This update to the Hazard Communication Standard (HCS) will provide a common and coherent approach to classifying chemicals and communicating hazard information on labels and safety data sheets. This update will also help reduce trade barriers and result in productivity improvements for American businesses that regularly handle, store, and use hazardous chemicals while providing cost savings for American businesses that periodically update safety data sheets and labels for chemicals covered under the hazard communication standard.

Hazard Communication Standard

In order to ensure chemical safety in the workplace, information about the identities and hazards of the chemicals must be available and understandable to workers. OSHA's Hazard Communication Standard (HCS) requires the development and dissemination of such information:

- Chemical manufacturers and importers are required to evaluate the hazards of the chemicals they produce or import, and prepare labels and safety data sheets to convey the hazard information to their downstream customers;
- All employers with hazardous chemicals in their workplaces must have labels and safety data sheets for their exposed workers, and train them to handle the chemicals appropriately.

Major changes to the Hazard Communication Standard

- **Hazard classification**: Provides specific criteria for classification of health and physical hazards, as well as classification of mixtures.
- **Labels**: Chemical manufacturers and importers will be required to provide a label that includes a harmonized signal word, pictogram, and hazard statement for each hazard class and category. Precautionary statements must also be provided.
- **Safety Data Sheets**: Will now have a specified 16-section format.
- **Information and training**: Employers are required to train workers by December 1, 2013 on the new labels elements

Highlights

- NEW Information on the June 12, 2018 DOT/OSHA Joint Public Meeting in Preparation for the UN Sub-Committee meeting in Geneva
- Clarifications to CPL 02-02-079, Inspection Procedures for the Hazard Communication Standard (HCS 2012)
- Joint PHMSA OSHA Memorandum on Labeling of Hazardous Chemicals for Bulk Shipments [PDF]
- Use of concentration ranges on SDSs FAQ
- Hazard Communication: Hazard Classification Guidance for Manufacturers, Importers, and Employers
- Hazard Communication Directive (HCS 2012)
- Effective Dates
- Hazard Communication: Small Entity Compliance Guide for Employers That Use Hazardous Chemicals
- Hazard Communication: Steps to an Effective Hazard Communication Program for Employers That Use Hazardous Chemicals Fact Sheet
- Comparison of NFPA 704 & HCS 2012 Labels QuickCard [PDF]
- OSHA/SCHC Alliance Webinar: Hazard Communications 2012 Presentation [August 2012]
- Hazard Communication: One Year of Implementation 2013 Hazard Communication Presentation

Employer Obligations

- Provide information to employees about the hazardous chemicals to which they are exposed
- Have a written hazard communication program
- Use labels and other forms of warning
- Keep safety data sheets for all hazardous chemicals
- Maintain current information and training

Employers Must Train Employees

- At the time of their initial assignment
- Whenever a new chemical hazard is introduced into their work area

Training Is Specific

- Categories of hazards (e.g., flammability, carcinogenicity) or specific chemicals
- Chemical-specific information through labels and safety data sheets
- How to detect the presence or release of a hazardous chemical in the work area
- The physical, health, simple asphyxiation, combustible dust, and pyrophoric gas hazards, as well as hazards not otherwise classified, of the chemicals in the work area
- The measures employees can take to protect themselves from these hazards, including specific procedures the employer has implemented to protect employees from exposure to hazardous chemicals, such as appropriate work practices, emergency procedures, and personal protective equipment

Information to Provide

Inform employees of the following:

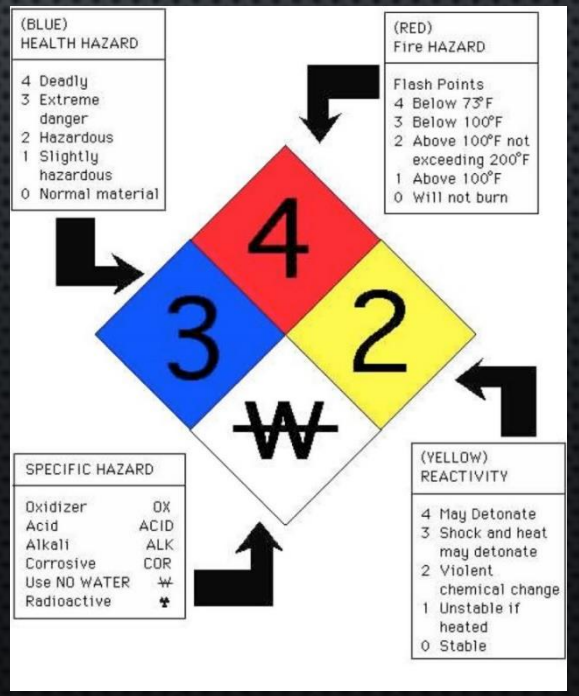
- GHS requirements
- Operations in their work area where hazardous chemicals are present
- Location and availability of
  - The written hazard communication program
  - Required list(s) of hazardous chemicals
  - Safety data sheets

Specific Laboratory Requirements

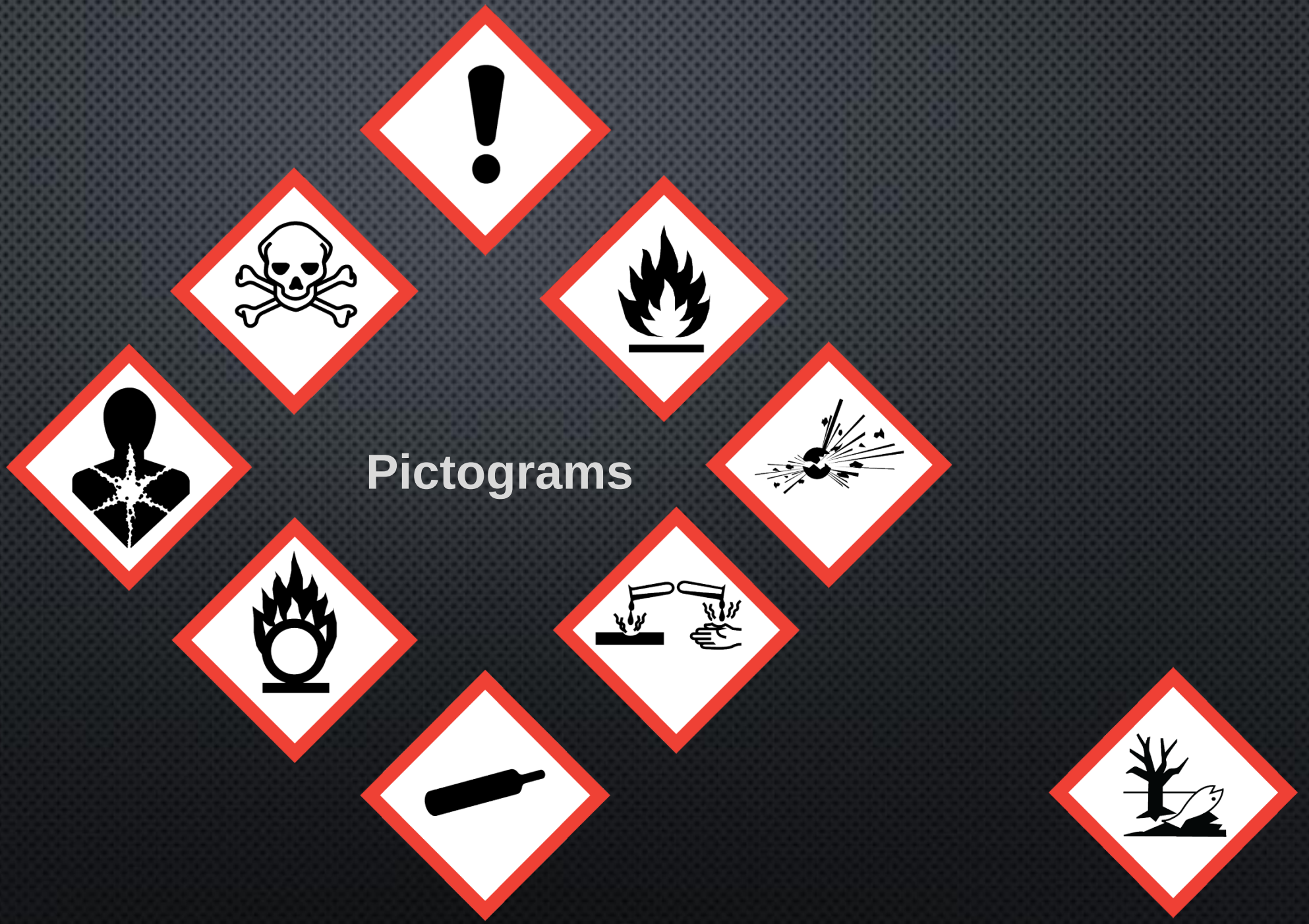
- Ensure labels on incoming containers are not removed or defaced
- Maintain safety data sheets that are received with incoming chemicals, and keep them readily accessible to employees
- Provide information and training
- Follow GHS protocols if preparing new chemicals for shipment

Workplace Labeling

- NFPA/HMIS Systems can still be used.
- As long as employees understand, OSHA will allow



Pictograms



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	**Skull and Crossbones**	**Environment**
Oxidizers	Acute Toxicity (fatal or toxic)	Aquatic Toxicity (non-mandatory)

Hazard Classifications

- 29 CFR 1910.1200
- Appendix A: Health Hazards
- Appendix B: Physical Hazards
- Indicates the intrinsic hazardous properties of chemicals

Intrinsic: *belonging to the essential nature or constitution of a thing*

Hazard Classification

- Each physical or health hazard is a “hazard class” (e.g., Carcinogenicity is a hazard class).
- A “hazard class” may be sub-divided in the criteria into several “hazard categories” based on the degree of severity of the hazard.
- Placing a chemical into a “hazard class” , and where necessary, a “hazard category”, is the concept of classification—determining not only the hazard, but also the severity of the effect.

Classification Requirements

- Chemical manufacturers and importers -- shall evaluate chemicals produced in their workplaces or imported by them:
  - Determine the hazard classes for each chemical
  - Determine the category of each class that applies to the chemical

- Employers – only required to classify chemicals if they don't use the classification supplied by the manufacturer or importer

3 Steps to Hazard Classification

1) Identify relevant data regarding the hazards of a substance or mixture;
2) Review the data to determine the hazards associated with the substance or mixture; and
3) Decide the classification and the degree of hazard, by comparing the data with hazard classification criteria.

Hazard Classifications

- 29 CFR 1910.1200
- Appendix A: Health Hazards
- Appendix B: Physical Hazards
- Indicates the intrinsic hazardous properties of chemicals

Intrinsic: *belonging to the essential nature or constitution of a thing*

Definition of Health Hazard

Appendix A, §1910.1200—Health Hazard Criteria

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; germ cell mutagenicity; carcinogenicity; reproductive toxicity; specific target organ toxicity (single or repeated exposure); or aspiration hazard.

GHS Health Hazards

1) Acute Toxicity
2) Skin corrosion or irritation
3) Serious eye damage or eye irritation
4) Respiratory or skin sensitization
5) Germ cell mutagenicity
6) Carcinogenicity
7) Reproductive Toxicity
8) Specific target organ toxicity
9) Aspiration hazard
10) Aquatic Toxicity

Health Hazards

Table courtesy of OSHA

Hazard Class	Hazard Category			
Acute Toxicity	1	2	3	4
Skin Corrosion/ Irritation	1A	1B	1C	2
Serious Eye Damage/ Eye Irritation	1	2A	2B	
Respiratory or Skin Sensitization	1			
Germ Cell Mutagenicity	1A	1B	2	
Carcinogenicity	1A	1B	2	
Reproductive Toxicity	1A	1B	2	Lactation
STOT – Single Exposure	1	2	3	
STOT – Repeated Exposure	1	2		
Aspiration	1			
Simple Asphyxiants	Single Category			

Example: Acute Toxicity

- Adverse effects occurring following oral or dermal administration of a single dose of a substance

or

- multiple doses given within 24 hours

or

- an inhalation exposure of 4 hours

Example: Acute Toxicity

Table A.1.1: Acute toxicity hazard categories and acute toxicity estimate (ATE) values defining the respective categories

Exposure route	Category 1	Category 2	Category 3	Category 4
Oral (mg/kg bodyweight) *see:* *Note (a)* *Note (b)*	≤ 5	>5 and ≤ 50	>50 and ≤ 300	>300 and ≤ 2000
Dermal (mg/kg bodyweight) *see:* *Note (a)* *Note (b)*	≤ 5	>50 and ≤ 200	>200 and ≤ 1000	>1000 and ≤ 2000
Inhalation - Gases (ppmV) *see:* *Note (a)* *Note (b)* *Note (c)*	≤ 100	>100 and ≤ 500	>500 and ≤ 2500	>2500 and ≤ 20000
Inhalation - Vapors (mg/l) *see:* *Note (a)* *Note (b)* *Note (c)* *Note (d)*	≤ 0.5	>0.5 and ≤ 2.0	>2.0 and ≤ 10.0	>10.0 and ≤ 20.0
Inhalation – Dusts and Mists (mg/l) *see:* *Note (a)* *Note (b)* *Note (c)*	≤ 0.05	>0.05 and ≤ 0.5	>0.5 and ≤ 1.0	>1.0 and ≤ 5.0

Note: Gas concentrations are expressed in parts per million per volume (ppmV).

Notes to Table A.1.1:

(a) The acute toxicity estimate (ATE) for the classification of a substance is derived using the LD_{50}/LC_{50} where available;

(b) The acute toxicity estimate (ATE) for the classification of a substance or ingredient in a mixture is derived using:

(i) the LD_{50}/LC_{50} where available. Otherwise,

Cat 1 -3

Cat 4

Hazard Classifications

- 29 CFR 1910.1200
- Appendix A: Health Hazards
- Appendix B: Physical Hazards
- Indicates the intrinsic hazardous properties of chemicals

Intrinsic: *belonging to the essential nature or constitution of a thing*

Definition of Physical Hazard

Appendix B, §1910.1200

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; pyrophoric (liquid or solid); self-heating; organic peroxide; corrosive to metal; gas under pressure; or in contact with water emits flammable gas.

Photo courtesy U.S. EPA Documerica Project

GHS Physical Hazards

Explosives
Flammable Gases
Flammable Aerosols
Oxidizing Gases
Gases Under Pressure
Flammable Liquids
Flammable Solids
Self-Reactive Substances
Pyrophoric Liquids
Pyrophoric Solids

Self-Heating Substances
Substances which, in contact with water emit flammable gases
Oxidizing Liquids
Oxidizing Solids
Organic Peroxides
Corrosive to Metals

Physical Hazards

Table courtesy of OSHA

Hazard Class	Hazard Category						
Explosives	**Unstable Explosives**	**Div 1.1**	**Div 1.2**	**Div 1.3**	**Div 1.4**	**Div 1.5**	**Div 1.6**
Flammable Gases	**1**	**2**					
Flammable Aerosols	**1**	**2**					
Oxidizing Gases	**1**						
Gases under Pressure Compressed Gases Liquefied Gases Refrigerated Liquefied Gases Dissolved Gases	**1**						
Flammable Liquids	**1**	**2**	**3**	**4**			
Flammable Solids	**1**	**2**					
Self-Reactive Chemicals	**Type A**	**Type B**	**Type C**	**Type D**	**Type E**	**Type F**	**Type G**
Pyrophoric Liquids	**1**						
Pyrophoric Solid	**1**						
Pyrophoric Gases	**Single category**						
Self-heating Chemicals	**1**	**2**					
Chemicals, which in contact with water, emit flammable gases	**1**	**2**	**3**				
Oxidizing Liquids	**1**	**2**	**3**				
Oxidizing Solids	**1**	**2**	**3**				
Organic Peroxides	**Type A**	**Type B**	**Type C**	**Type D**	**Type E**	**Type F**	**Type G**
Corrosive to Metals	**1**						
Combustible Dusts	**Single category**						

Labeling

GHS Mandates and Examples

Allocation of Label Elements

- 29 CFR 1910.1200
- Appendix C
- Mandatory
- 6 main parts

Label Elements:

1. Product Identifier
2. Contact Information
3. Signal Word
4. Hazard Statement
5. Pictogram
6. Precautionary Statement

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

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.

Precautionary Statements

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

Hazard Statements

Supplemental Information

Directions for Use

_____
_____
_____

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

OSHA 3492-02 2012

Recalling the Acute Toxicity Example:

C.4 REQUIREMENTS FOR SIGNAL WORDS, HAZARD STATEMENTS, PICTOGRAMS, AND PRECAUTIONARY STATEMENTS

C.4.1 ACUTE TOXICITY – ORAL
(Classified in Accordance with Appendix A.1)

Hazard category	Signal word	Hazard statement
1	Danger	Fatal if swallowed
2	Danger	Fatal if swallowed

Pictogram

Skull and crossbones

Precautionary statements

Prevention	Response	Storage	Disposal
Wash …thoroughly after handling. … Chemical manufacturer, importer, or distributor to specify parts of the body to be washed after handling. **Do not eat, drink or smoke when using this product.**	**If swallowed: Immediately call a poison center/doctor/…** … Chemical manufacturer, importer, or distributor to specify the appropriate source of emergency medical advice. **Specific treatment (see … on this label)** … Reference to supplemental first aid instruction. - *if immediate administration of antidote is required.* **Rinse mouth.**	**Store locked up.**	**Dispose of contents/container to…** … in accordance with local/regional/national/international regulations (to be specified).

Safety Data Sheets

Safety Data Sheet Elements

- 29 CFR 1910.1200, Appendix D
- Mandatory
- Standardizes information provided
- 16 sections

Minimum Information on an SDS

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

1. Physical and chemical properties
2. Stability and reactivity
3. Toxicological information
4. Ecological information *
5. Disposal considerations *
6. Transport information *
7. Regulatory information *
8. Other information, including date of preparation or last revision

*Non-mandatory requirements

Resource: Webpages

- HazCom 2012 Webpage
  - www.osha.gov/dsg/hazcom/index.html
- Safety & Health Topics Webpage
  - www.osha.gov/dsg/hazcom/index2.html

Resource: Frequently Asked Questions

Labeling of Pipes

Q: Can employers still use color coding to identify chemicals in pipes in the workplace or will pipes and piping have to be labeled with Hazard Communication 2012 labels?

Q: If an employer uses colored pipes to identify chemicals in the workplace, what training is required?

Labeling of Small Packages

Q: When packaging falls below a certain container size, it may be difficult to display all HCS pictograms and text in such a limited space according to the labeling requirements for small packaging under the revised Hazard Communications Standard (HCS), 29 CFR 1910.1200. Does OSHA allow any reduction to the number of required label elements for small packaging?

Q. What pictograms are required in the revised Hazard Communication Standard? What hazard does each identify?

Precautionary Statements on Labels

Q: Does OSHA limit the number of precautionary statements that should appear on the label?

Blank Pictograms

Q: Can you have a blank or blacked-out pictogram on a label?

Q. Can I use a black border on pictograms for domestic shipment?

www.osha.gov/dsg/hazcom/hazcom-faq.html

Resource: Quick Cards and Fact Sheets

OSHA® QUICK CARD™

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.

OSHA® QUICK CARD™

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:

OSHA® QUICK CARD™

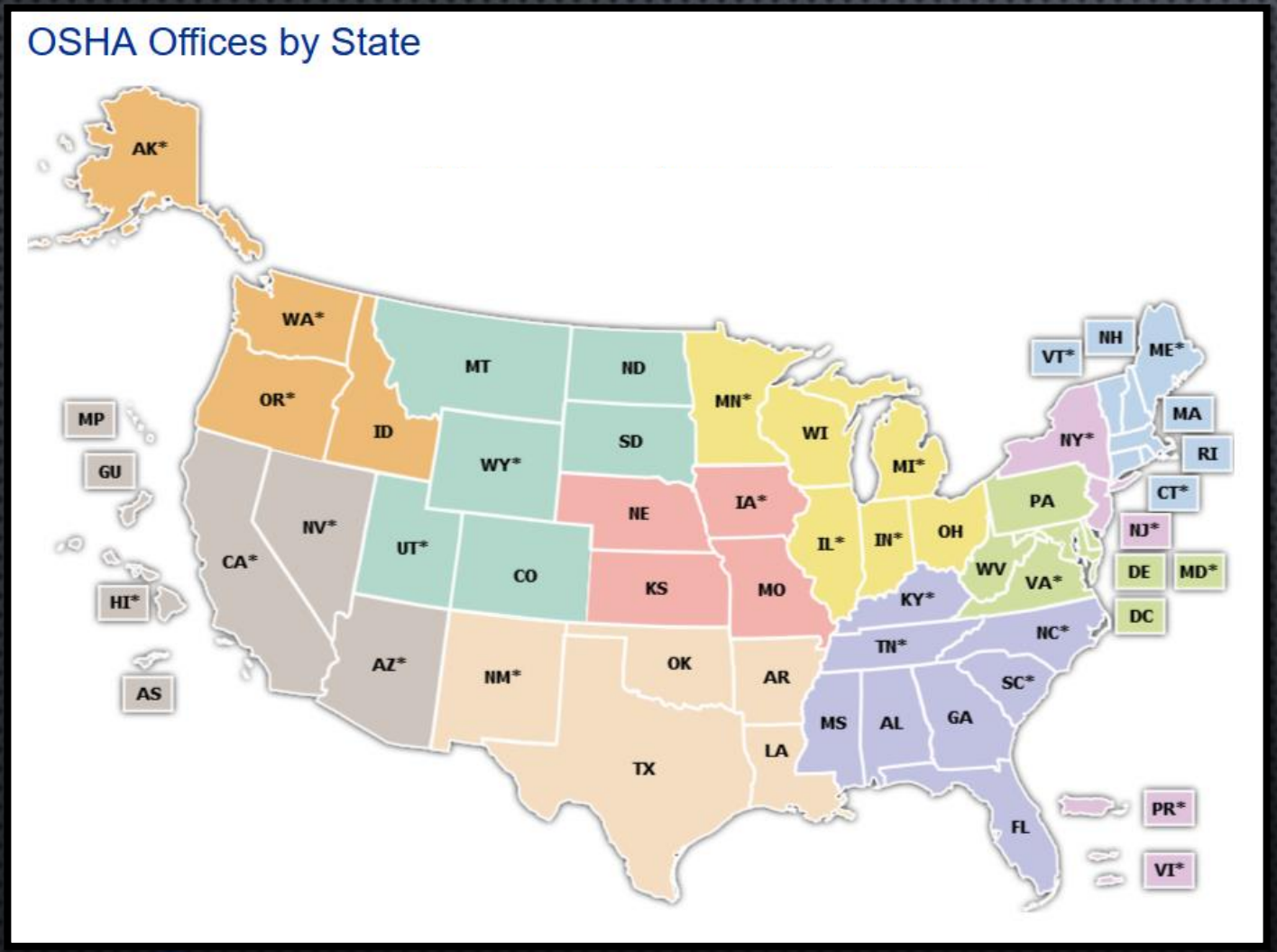
Hazard Communication Standard Pictogram

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)

Available in English and in Spanish



Onsite Help

USF Safety Florida Consultation Program

University of South Florida

13201 Bruce B. Downs Boulevard, MDC 56

Tampa, Florida 33612

(866) 273-1105

(813) 994-1173

Thank you very much!

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