HazCom 2012 / GHS: What Does It Mean?

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WHAT IS GHS?

- Globally Harmonized System of Classification and Labeling of Chemicals
- It is a way to improve the communication of chemical hazards by standardizing warning labels and Safety Data Sheets (MSDSs)
- Under original HazCom the same substance or mixture could have different content in MSDS and on label.

From HazCom…To HazCom 2012

HazCom	**HC 2012**
HazCom: chemicals were evaluated for their hazards	HC 2012: chemicals are classified as to their hazards
Risk Based	*Inherent Property* Based
Right to Know	*Right to Understand*

WHAT'S NEW? WHAT'S NOT?

WHAT HAS CHANGED?

How chemical hazards are classified, labeled and what MSDSs (now SDSs) look like.

WHAT HASN'T CHANGED? Everything else. Still have the same:

SCOPE

EXEMPTIONS

IN-HOUSE LABELING. If you want to continue current system, you can.

SDS DISTRIBUTION & ACCESS

NEED FOR A WRITTEN PROGRAM

TIME LINE of HAZCOM 2012 DEVELOPMENT

1983	OSHA passes 1st HazCom Standard
June 1992	UN begins development of GHS at Rio Summit
Dec 2002	UN adopts first version of GHS
May 2005	OSHA announces plans to revise HC Standard
March 2012	OSHA releases final standard
May 26, 2012	OSHA standard becomes effective

UPCOMING COMPLIANCE DEADLINES

Dec 1, 2013	Employees must be trained in the new label elements and SDS format
June 1, 2015	Employers, manufacturers and importers must be in compliance with HC 2012. Chemicals must be classified. New SDSs must be available. Chemicals must have new label.
Dec 1, 2015	Distributors can only ship containers that have GHS-compliant labels
June 1, 2016	Employers must provide training on new hazards resulting from new SDS and update their written programs. Signs required by substance-specific standards must be GHS-compliant (e.g., asbestos, methylene chloride, chromium)

CLASSFICATION of CHEMICALS (SUBSTANCES & MIXUTRES)

- HazCom has always required manufacturers and importers to determine if their chemicals were hazardous. HC 2012 now makes that process highly prescriptive and date driven.
  - Determine the CLASS of Hazard
  - Determine the CATEGORY (DEGREE) of Hazard

  Unless you manufacture or import chemicals, you will not need to know how to classify chemical hazards, but you must know the terminology for training employees.

3 HAZARD TYPES

- **Health** (10 classes): Appendix A of HC 2012
- **Physical** (18 classes): Appendix B; similar to DOT classification
- **Environmental**: not adopted by OSHA (no authority to require this information)

  Can be on SDS and label, but OSHA will not enforce accuracy of info.

HAZARD TYPES (cont'd)

- Non GHS Hazards adopted in HC 2012
  - Simple asphyxiants
  - Pyrophoric gases
  - Combustible dust
  - HNOC (Hazards Not Otherwise Classified)
    - Applies to hazards discovered during classification process that don't fit into existing GHS hazard classes
    - Info must be on SDS but not on labels

PHYSICAL HAZARD CLASSES

- Explosives
- Flammable Gases
- Flammable Liquids
- Flammable Solids
- Flammable Aerosols
- Gases under Pressure
- Pyrophoric Liquids
- Pyrophoric Solids
- Pyrophoric Gases (OSHA only)
- Self-Reactive Substances & Mixtures
- Self-Heating Substances & Mixtures
- Oxidizing Gases
- Oxidizing Liquids
- Oxidizing Solids
- Organic Peroxides
- Corrosive to Metal
- Combustible Dusts (OSHA only)
- Substances & Mixtures which, in contact with water, emit flammable gases

HEALTH HAZARD CLASSES

- Acute Toxicity
- Skin Corrosion / Irritation
- Serious Eye Damage / Eye Irritation
- Respiratory or Skin Sensitization
- Germ Cell Mutagenicity
- Carcinogenicity
- Reproductive Toxicity
- Specific Target Organ Toxicity
- Aspiration Hazard
- Simple Asphyxiants (OSHA only)

ENVIRONMENTAL HAZARDS

- Aquatic Toxicity
- Hazardous to the Ozone Layer

Permitted by HC 2012, but not required.

EXAMPLE of CLASSIFYING FLAMMABLE LIQUIDS UNDER HC 2012

Category	Criteria
1	Flash point <23 deg C and initial boiling point 35 deg C or less
2	Flash point <23 deg C and initial boiling point >35 deg C
3	Flash point 23 deg C or greater and 60 deg C or less
4	Flash point >60 deg C and 93 deg C or less

The old definitions have been replaced. No more Class 1, 2 or 3 Flammable Liquids.

The old Combustible Liquid is now a Flammable Liquid Class 4

Notice that

Category 1: highest hazard

Category 4: lowest hazard

HC 2012 VOCABULARY SUMMARY

- **Hazard Type** Ex. Health

  Kind of hazard

- **Hazard Class** Ex. STOT Single Exposure

  Nature of the hazard

- **Hazard Category** Ex. Category 3 (respiratory tract irritant)

  Severity of the hazard

LABELING in HazCom

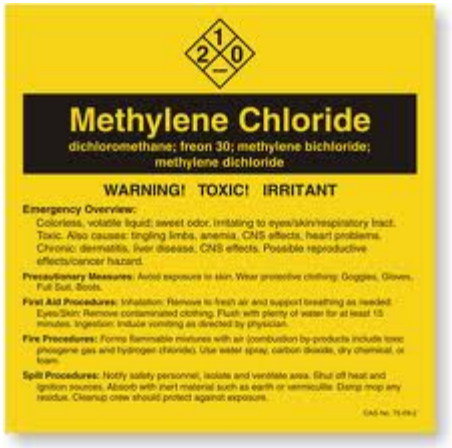
PRODUCT IDENTIFIER

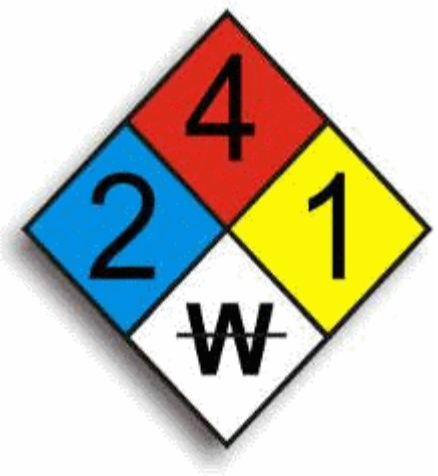
SUPPLIER IDENTIFICATION

APPROPRIATE HAZARD WARNING

CURRENT LABELS

- Examples of current labels





LABELING IN HC 2012

PRODUCT IDENTIFIER

SUPPLIER IDENTIFICATION

SIGNAL WORD MUST BE USED

- WARNING
- DANGER

CAUTION is not a HC 2012 signal word

PICTOGRAMS (pictures to convey standard warning)

STANDARDIZED HAZARD STATEMENT(S)

STANDARDIZED PRECAUTIONARY STATEMENT(S)

Driven by Hazard Class and Hazard Category

THE FULL LABEL INFORMATION MUST APPEAR IN SECTION 2 OF THE SDS.

LABELING IN-HOUSE CHEMICALS

- INCLUDES: IN-PROCESS CHEMICALS
  SECONDARY CONTAINERS
  PIPING

- You can use either the HC 2012 labels or your current label system (product ID and suitable hazard warning).

PHYSICAL HAZARD PICTOGRAMS

Flame

Flammable: Solids, Liquids (Categories 1, 2 & 3) and Gases

Flammable Aerosols

Self Reactive: Type B, C, D, E & F

Pyrophoric Liquids, Solids & Gases

Self-heating Substances

Emits Flammable Gas upon Water Contact

Organic Peroxide: Type B, C, D & F

PHYSICAL HAZARDS (cont'd)

Exploding Bomb

Explosive: Unstable, Divisions 1.1, 1.2, 1.3 and 1.4

Self Reactive: Type A and B

Organic Peroxide: Type A & B

Flame Over Circle

Oxidizer

Gas Cylinder

Gas under pressure

HEALTH HAZARD PICTOGRAMS

Chronic Health Hazard

Carcinogen (Categories 1A, 1B & 2)

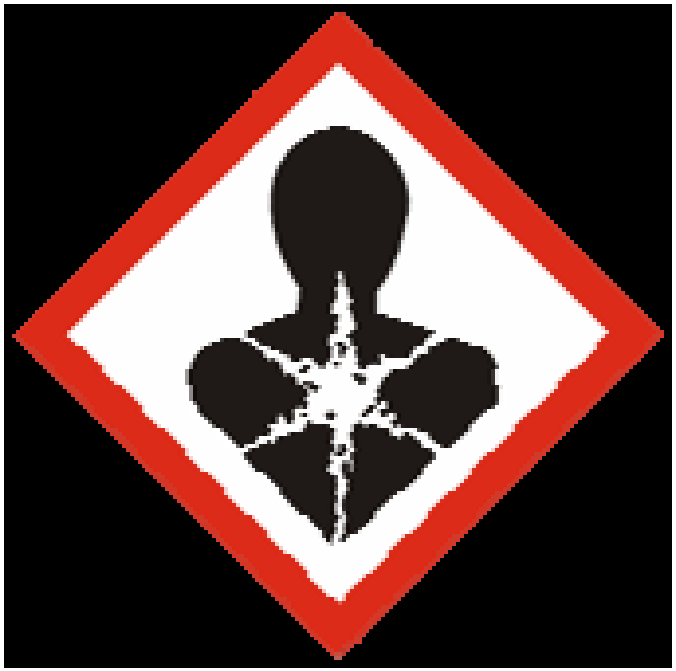
Respiratory Sensitizer (Category 1)

Reproductive Toxicity (Categories 1A, 1B, & 2)

Target Organ Toxicity/STOT (Cat. 1 & 2)

Mutagenicity (Categories 1A, 1B and 2)

Aspiration Toxicity (Categories 1 and 2)



HEALTH HAZARD PICTOGRAMS (continued)

Corrosive

Skin Corrosion: Categories

1A, 1B and 1C

Eye Corrosion /Irritation: Category 1

Corrosive to metals

Exclamation Mark

Skin Corrosion: Category 2

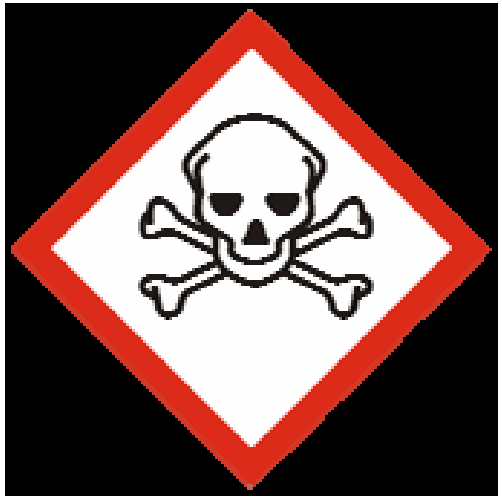
Eye Corrosion / Irritation: Category 2A

Skin Sensitizer: Category 1

Acute Toxicity: Category 4

- Target Organ Toxicity: Category 3
- Damages Ozone Layer (nonmandatory)

HEALTH HAZARD PICTOGRAMS



Skull & Crossbones

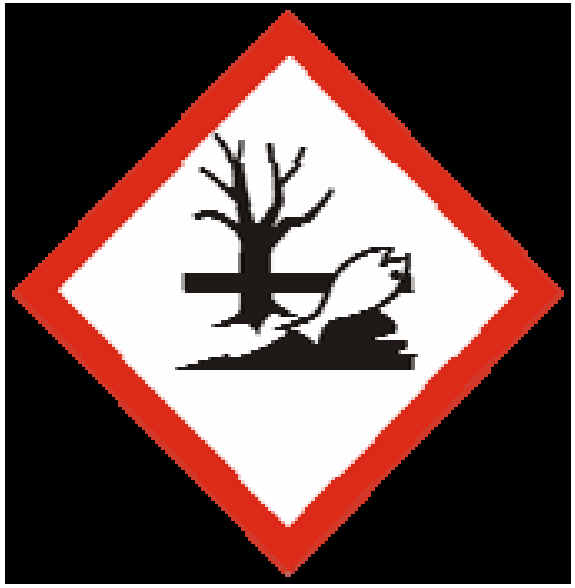
Acute toxicity: Categories 1, 2, and 3 (oral, skin or inhalation)

ENVIRONMENTAL HAZARDS

Dead Fish / Dead Tree

Acute Aquatic Toxicity: Category 1

Chronic Aquatic Toxicity; Categories 1and 2



EXAMPLE of NEW LABEL

GHS-compliant label

Chemical Identity

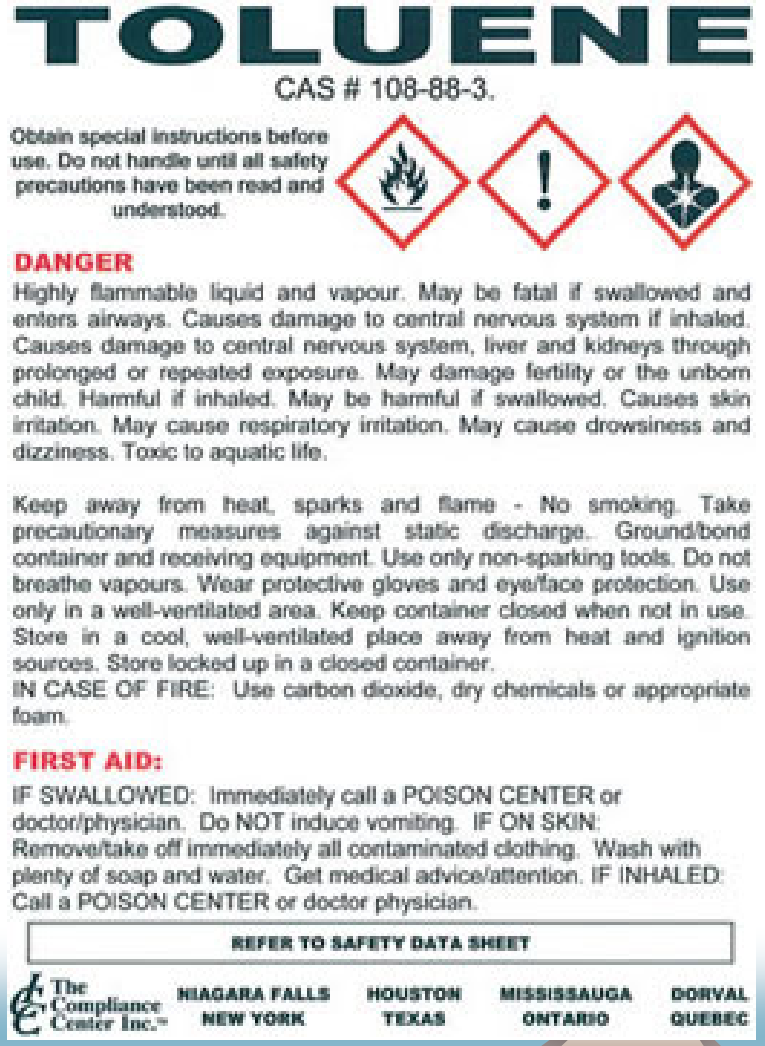
Supplier Identity

Pictogram

Signal Word

Hazard Statement

Precautionary Statements



SAFETY DATA SHEETS (SDSs)

- 16 SECTIONS IN A **SPECIFIC** FORMAT (similar to ANSI Z400.1-2010 MSDS)
- APPENDIX D of HC 2012 SPECIFIES FORMAT TO USE
- OSHA WON'T ENFORCE REQUIREMENTS IN SEC. 12-15
  - Environmental hazards, disposal, transport classification, regulatory info

SAFETY DATA SHEETS (SDSs)

- EXACT % OF MIXTURE CONSTITUENTS MUST BE SHOWN UNLESS CLAIMED AS TRADE SECRET
- TLV, PEL, MANUFACTURE EXPOSURE GUIDELINES MUST BE SHOWN
- CARCINOCENICITY CLASSIFICATION BY IARC, NTP or OSHA MUST BE SHOWN

RESOURCES

- **OSHA**
- Final HazCom 2012 Standard

  http://www.osha.gov/dsg/hazcom/ghs-final-rule.html
- Side-by-Side Comparison: HazCom and HazCom 2012

  http://www.osha.gov/dsg/hazcom/side-by-side.html

- **Society for Chemical Hazard Communication (SCHC)**

  www.schc.org
- **The GHS (UN Standard)**

  http: //www.unece.org/trans/danger/publi/ghs/ghs_rev01/01files e_html

Panel Questions

1. What will be your approach to meeting the training requirements for **labels and SDSs**? Develop in-house training package? Purchase an off-the-shelf product? Use class room, computer-based or combination delivery mode?

2. How will your SDS data base or system change? Will you have one for HC 2012 SDSs and another for MSDSs? What will you do with your old MSDSs?

Panel Questions

3. How will you meet the labeling requirements for in-house containers? Stay with your current label system? Convert to new GHS labels?

4. Will you include environmental hazards in your training even though OSHA does not require it?

5. Are you starting to see GHS-compliant labels or SDSs? Have they created questions or concerns from your workers?

Panel Questions

6. What, if any, concerns do you have about implementing the changes required by HC 2012?

    Ex. NFPA / HMIS issues?

    Written program?

    "New" Hazard training (diesel exhaust, sulfuric acid in batteries)?