

*Prepared for: The University of Tampa
November 2013*

HAZCOM 2012 – Update

Global Harmonization
System [GHS]

What is GHS

- Harmonized criteria for the classification of substances and mixtures according to their health, environmental and physical hazards.
- Harmonized hazard communication system including requirements for labeling and safety data sheets.
- Target Audience - workers, employers, consumers, transport workers, emergency responders

Hazcom 2012 Standard

Published March 26, 2012 in the Federal Register

- Conform to the Globally Harmonized System for the Classification and Labeling of Chemicals (GHS) Rev 3
- Specifies Changes to
 - Classification
 - Label Content
 - Safety Data Sheet Content (mandatory 16 section SDS, % required)
- No Changes to
 - Scope and Exemptions
 - Written Hazcom Program
 - Labeling requirement
 - MSDS Distribution and Availability in the Workplace
 - Employee Information and Training (other than training on new labels and MSDS within 2 years)
 - Trade Secrets (except to include percentage)

GHS Links

- GHS website:

http://www.unece.org/trans/danger/publi/ghs/ghs_rev04/04files_e.html

- GHS - Based on Existing Major Systems
- US - OSHA, CPSC (consumer), EPA pesticides
- Canada - WHMIS, CCCCR (consumer), pesticides
- EU classification and labeling system
- UN Recommendations on Transport of Dangerous Goods

GHS Scope

Covers all Hazardous chemicals

- substances
- mixtures

In all types of use situations

- research/development
- production
- storage
- transport
- workplace use
- consumer use
- presence in the environment

Exemptions

● Hazardous waste

- Hazardous substances at a CERCLA remediation site
- Tobacco
- Wood and wood products which will not be processed and only present a fire hazard
- Articles
- Food and alcoholic beverages sold, used or prepared in retail establishments or intended for personal consumption

- Drugs, in solid, final form for direct administration to patient, or packaged for sale, or for consumption by employees
- Cosmetics packaged for sale or for use by employees
- Consumer products if used only in consumer manner
- Nuisance particulates
- Radiation (ionizing and non-ionizing)
- Biological hazards

Label Exemptions

- Pesticides
- Toxic Substances Control Act (TSCA) regulated chemicals
- Food, food additives, color additives, drugs, cosmetics, medical/veterinary devices, alcoholic beverages
- Consumer products when labeled in accordance with the Consumer Product Safety Commission (CPSC)
- Seeds treated with pesticides if labeled under US Department of Agriculture (USDA)

Mandatory Label Content on Shipped Containers:

- Product Identifier
- Ingredients not required but are part of GHS label
- Signal word (danger or warning)
- Hazard statements
- Pictograms
- Precautionary statements
- Name, address and telephone number of the chemical manufacturer, importer or other responsible party
- Unknown acute toxicity statement if applicable

Label Signal Word

- A word used to indicate the relative level of severity of hazard and alert the reader to a potential hazard on the label
- The signal words used in this section are
 - “Danger” and “Warning”
 - **“Danger”** – used for the more severe hazards
 - **“Warning”** – used for the less severe

Label Hazard Statement

- A single harmonized hazard statement for each level of hazard (category) within each hazard class
- Hazard statements were numbered in the amendment to Rev 1.

Example: Flammable liquids

Category 1: H224 Extremely flammable liquid and vapor

Category 2: H225 Highly flammable liquid and vapor

Category 3: H226 Flammable liquid and vapor

Category 4: H227 Combustible liquid

Label Pictogram

- A composition that may include a symbol plus other graphic elements such as a border, background pattern, or color, that is intended to convey specific information about the hazards of a chemical
- • Nine pictograms are designated under the GHS
- • Eight pictograms are adopted in Hazcom 2012
 - **Red border, black symbol**, white background
 - Blank red diamonds are not permitted on shipped container labels

Exploding Bomb Symbol



GHS Pictograms:

- ❑ Unstable Explosives
- ❑ Explosives (Divisions 1.1-1.4)
- ❑ Self-reactives (Type A and Type B with Flame)
- ❑ Organic Peroxides (Type A and Type B with Flame)

Flame Symbol



GHS Pictograms:

- ❑ Flammable Gases
- ❑ Flammable Aerosols
- ❑ Flammable Liquids (Categories 1-3)
- ❑ Flammable Solids
- ❑ Self-Reactives (Type B with bomb, Types C-F)
- ❑ Pyrophoric liquids and solids
- ❑ Self-heating substances
- ❑ Substances which in contact with water emit flammable gases
- ❑ Organic Peroxides

Flame over Circle



GHS Pictograms:

- ❑ Oxidizing Gases
- ❑ Oxidizing Liquids
- ❑ Oxidizing Solids

Gas Cylinder Symbol



GHS Pictograms:

- ❑ Compressed Gas
- ❑ Liquefied Gas
- ❑ Refrigerated Liquefied Gas
- ❑ Dissolved Gas

Corrosion Symbol



GHS Pictograms:

- ❑ Corrosive to Metals (steel or aluminum >6.25 mm/year at 55C)
- ❑ Skin corrosion/ irritation – Category 1 (A, B and C)
- ❑ Serious eye damage/ irritation – Category 1

Skull and Crossbones Symbol



GHS Pictograms:

- ❑ Acute Toxicity –
Categories 1-3
(oral, inhalation or
dermal routes)

Exclamation Mark Symbol



GHS Pictograms:

- ❑ Acute Toxicity – Category 4 (oral, inhalation or dermal routes)
- ❑ Skin Irritation/ Corrosion – Category 2
- ❑ Serious Eye damage/irritation – Category 2A
- ❑ Skin Sensitizer
- ❑ STOST (single exposure) – Category 3 (respiratory tract irritation, narcotic effects)
- ❑ Hazardous to the Ozone Layer

Health Hazard Symbol



GHS Pictograms:

- ❑ Respiratory Sensitizer
- ❑ Germ Cell Mutagenicity
- ❑ Carcinogenicity
- ❑ Toxic to Reproduction
- ❑ STOST (single exposure) – Categories 1-2
- ❑ STOST (repeated exposure) – Categories 1-2
- ❑ Aspiration Hazard

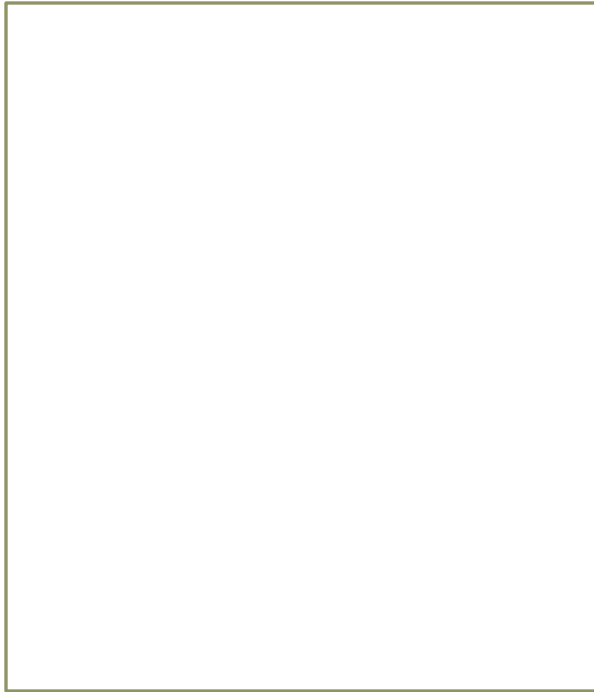
Environment Symbol



GHS Pictograms:

- ❑ **Acute** hazards to the aquatic environment – Category 1
(Categories 2 and 3 no symbol or signal word)
- ❑ **Chronic** hazards to the aquatic environment – Categories 1 and 2
(Categories 3 and 4 no symbol or signal word)

No Symbol



GHS Labeling

Some Hazard Categories have no symbol

- ❑ – Explosives Division 1.5
- ❑ – Flammable Gases Category 2
- ❑ – Flammable Liquid Category 4
- ❑ – Acute Toxicity Category 5
- ❑ – Skin Corrosion/Irritation Category 3
- ❑ – Eye Damage/Irritation Category 2B
- ❑ – Effects on Lactation
- ❑ – Hazardous to the Aquatic Environment – Acute 2 and 3, Chronic 3 and 4

Example GHS Label

2-Methyl Flammaline

Danger
Highly Flammable Liquid and Vapor
May cause cancer

Prevention

- Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking
- Keep containers tightly closed.
- Ground and bond container and receiving equipment.
- Use explosion-proof electrical equipment.
- Use only non-sparking tools.
- Take action to prevent static discharge.
- Obtain special instructions before use.
- Do not handle until all safety precautions have been read and understood.
- Wear protective gloves and eye protection.

Response

- If on skin (or hair): Remove immediately all contaminated clothing. Rinse skin with water.
- If exposed or concerned: Get medical advice.
- In case of fire: Use water fog, foam or dry chemical to extinguish.

Storage

- Store in a well-ventilated place. Keep cool. Store locked up.

Disposal

- Dispose of contents to hazardous waste in accordance with all local, state and national regulations

ABC Chemical Company, 3 Main Street, Hartford, CT 860-123-2222



GHS SDS

Safety Data Sheets –
*formerly known as
Material Safety Data
Sheets [MSDS]*

SDS 16-Sections

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 control/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

SDS Methyl Chloride

<http://www.chemadvisor.com/Matheson/database/msds/MAT14360000220003.PDF>

Standardized Label Formats

OLD Label Example



METHYLENE CHLORIDE
(DICHLOROMETHANE)

UN1888  **DANGER! POISON!**  CAS# 75-09-2

TARGET ORGANS: SKIN, EYES, CENTRAL NERVOUS SYSTEM, CARDIOVASCULAR SYSTEM

PRECAUTIONARY MEASURES: MAY BE FATAL OR HARMFUL IF SWALLOWED, ABSORBED THROUGH SKIN OR INHALED. Keep in tightly closed container. Avoid breathing vapor, dust, mist. Avoid contact with eyes, skin, clothing. Use with adequate ventilation. Wash thoroughly after handling. When heated to decomposition emits very toxic fumes. In case of fire, use water spray, alcohol foam, dry chemical, or carbon dioxide extinguisher. Use appropriate personal protective equipment.

SYMPTOMS OF EXPOSURE: Fatigue, weakness, lightheadedness, numbness or tingling in the limbs, Nausea, Irritation of the eyes and skin, Vertigo, Angina, A SUSPECTED CARCINOGEN.

INSTRUCTIONS FOR IMMEDIATE AID IN CASE OF EXPOSURE: Call a Physician. If swallowed, and if conscious, immediately induce vomiting. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. In case of contact, immediately flush affected area with running water for at least 15 minutes. Medical intervention: treat symptoms of exposure.

SPILL RESPONSE PROCEDURES: Only appropriately trained personnel should respond to spills. Use proper response procedures and maintain appropriate level of fire protection. Dispose of as required by federal, state, and local regulations.

CONTAINER HANDLING and STORAGE: Store in tightly closed container in cool, dry area. Open containers carefully with adequate ventilation. Avoid storage or contact with strong oxidizers, caustics, chemically active metals or any other incompatible materials.

MSDS REFERENCE: Refer to Material Safety Data Sheet for more information about chemical.

MANUFACTURER: _____ PHONE NUMBER: _____

MSDS LOCATION: _____


HC-214


New GHS Label



Methylene Chloride

WARNING

 Causes serious eye irritation. Causes skin irritation. May cause respiratory irritation. May cause drowsiness or dizziness. Suspected of causing cancer. Suspected of damaging fertility or the unborn child. May cause damage to the central nervous system through prolonged or repeated inhalation. May cause damage to the liver or blood through prolonged or repeated ingestion.

 Obtain special instructions before use. Do not handle until all safety precautions have been read and understood.

PREVENTION

Wash hands and any other contaminated skin thoroughly after handling. Wear protective gloves, eye protection, and respirator. Do not eat, drink or smoke when using this product. Do not breathe vapors. Use only outdoors or in a well-ventilated area.

RESPONSE

If inhaled: Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention. If on skin: Take off immediately all contaminated clothing. Wash with plenty of water, and soap if available. Wash contaminated clothing before reuse. If skin irritation occurs: Get medical attention. If exposed or concerned: Get medical advice. Call a poison center or doctor if you feel unwell.

WARNING: This product contains a chemical known to the State of California to cause cancer.

For More Information:

- Society for Chemical Hazard Communication (SCHC) www.schc.org

- SCHC-OSHA Alliance

www.osha.gov/dcsp/alliances/schc/schc.html

- OSHA Hazard Communication Website

<http://www.osha.gov/dsg/hazcom/index.html>

- GHS Website

http://www.unece.org/trans/danger/publi/ghs/ghs_rev04/04files_e.html