Hazard Communication / GHS Update (April 2014)

Prepared By:
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Michigan Department of Licensing and Regulatory Affairs (LARA)
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Agenda
• Overview of changes to the MIOSHA Part 42, 92 and 430: Hazard Communication Standard (Haz Com)
• Labeling requirements
• Safety Data Sheets (SDS)
• Resources
Why the Change to Haz Com?

- To align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS) adopted by 67 nations
- To provide a common and coherent approach to classifying chemicals
  - Reduce confusion and increase understanding of the hazards
  - Facilitate training
  - Help address literacy problems

Who is Affected?

- Manufacturers, Distributors, Importers
  - Change SDS information and format
  - Change container labeling
- Employers
  - Training employees on changes to:
    - SDS (change from MSDS to SDS and 16-section format)
    - Container Labels (including secondary containers)
- Employees
  - Recognize and understand hazards based on:
    - Information in new SDS format
    - Pictograms on container labels
    - Precautionary and hazard statements
Overview of Haz Com Standard

a) **Purpose**
b) Scope and Application
c) **Definitions**
d) **Hazard Classification**
e) Written Hazard Communication Program
f) **Labels and Other Forms of Warning**
   **Bold text** = Changes in 2012 revised rule
g) Safety Data Sheets
h) Employee Information and Training
i) Trade Secrets
j) Effective Dates

Appendices

- Appendix A, Health Hazard Criteria (Mandatory) – NEW
- Appendix B, Physical Hazard Criteria (Mandatory) – NEW
- Appendix C, Allocation of Label Elements (Mandatory) – NEW
- Appendix D, Safety Data Sheets (Mandatory) – NEW
- Appendix E Definition of “Trade Secret” (Mandatory)
- Appendix F, Guidance for Hazard Classifications Re: Carcinogenicity (Non-Mandatory) – NEW
Other Standards Affected – Health (signage requirements)

- Asbestos
- Carcinogens
- Vinyl Chloride
- Inorganic Arsenic
- Lead
- Cadmium
- Benzene
- Coke Oven Emissions
- Acrylonitrile
- Ethylene Oxide
- Formaldehyde
- Methyleneedianiline

DANGER
LEAD MAY DAMAGE FERTILITY OR THE UNBORN CHILD
CAUSES DAMAGE TO THE CENTRAL NERVOUS SYSTEM
DO NOT EAT, DRINK OR SMOKE IN THIS AREA

WARNING
LEAD WORK AREA
POISON
NO SMOKING OR EATING

New Sign “LEAD”

Other Standards Affected

- Flammable and Combustible Liquids
- Spray Finishing using Flammable and Combustible Materials
- Process Safety Management of Highly Hazardous Chemicals (PSM)
- Hazardous Waste Operations and Emergency Response (HAZWOPER)
- Hazardous Work In Laboratories
- Dipping and Coating Operations
- Welding, Cutting and Brazing
- Employee Medical Records and Trade Secrets
### Effective Dates and Requirements

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Chemical Classifications

Chemicals will be classified using a harmonized system that provides standardized language for:

- Health Hazard Categories
- Physical Hazard Categories
- Environmental Hazard Categories*

*Not regulated by MIOSHA.

Chemical Classifications: Health Hazards

- Acute Toxicity
- Skin Corrosion/Irritation
- Respiratory or Skin Sensitization
- Germ Cell Mutagenicity
- Carcinogenicity
- Reproductive Toxicity
- Specific Target Organ Toxicity – Single Exposure
- Specific Target Organ Toxicity – Repeated Exposure
- Aspiration
- Simple Asphyxiants
## Chemical Classifications: Health Hazards

<table>
<thead>
<tr>
<th>Hazard Class</th>
<th>Hazard Category</th>
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</thead>
<tbody>
<tr>
<td>Acute toxicity</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td>Skin Corrosion/Irritation</td>
<td>1A 1B 1C 2</td>
</tr>
<tr>
<td>Serious Eye Damage/Eye Irritation</td>
<td>1 2A 2B</td>
</tr>
<tr>
<td>Respiratory or Skin Sensitization</td>
<td>1</td>
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<tr>
<td>Germ Cell Mutagenicity</td>
<td>1A 1B 2</td>
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<tr>
<td>Carcinogenicity</td>
<td>1A 1B 2</td>
</tr>
<tr>
<td>Reproductive Toxicity</td>
<td>1A 1B 2</td>
</tr>
<tr>
<td>Specific Target Organ Toxicity – Single Exposure</td>
<td>1 2 3</td>
</tr>
<tr>
<td>Specific Target Organ Toxicity – Repeated Exposure</td>
<td>1 2</td>
</tr>
<tr>
<td>Aspiration</td>
<td>1</td>
</tr>
<tr>
<td>Simple Asphyxiants</td>
<td>Single Category</td>
</tr>
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## Chemical Classifications: Physical Hazards

- Explosives
- Flammable Aerosols
- Oxidizing Gases
- Gases under Pressure
  - Compressed Gases
  - Liquefied Gases
  - Refrigerated Liquefied Gases
  - Dissolves Gases
Chemical Classifications: Physical Hazards (continued)

- Flammable Liquids
- Flammable Solids
- Self-Reactive Chemicals
- Pyrophoric Liquids
- Pyrophoric Solid
- Pyrophoric Gases
- Self-heating Chemicals
- Chemicals, which in contact with water, emit flammable gases

Chemical Classifications: Physical Hazards (continued)

- Oxidizing Liquids
- Oxidizing Solid
- Organic Peroxides
- Corrosive to Metals
- Combustible Dusts
Chemical Classifications:

### Physical Hazards

<table>
<thead>
<tr>
<th>Hazard Class</th>
<th>Unstable Explosives</th>
<th>Div 1.1</th>
<th>Div 1.2</th>
<th>Div 1.3</th>
<th>Div 1.4</th>
<th>Div 1.5</th>
<th>Div 1.6</th>
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<td>Oxidizing Gases</td>
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<td>Gases under Pressure</td>
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<td>Compressed gases</td>
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<td>Liquefied gases</td>
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<td>Refrigerated liquefied gases</td>
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<td>Self-Reactive Chemicals</td>
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<td>Type C</td>
<td>Type D</td>
<td>Type E</td>
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<td>Pyrophoric Gases</td>
<td>Single Category</td>
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<td></td>
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<td></td>
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<tr>
<td>Chemicals in which contact with water emit flammable gases</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td></td>
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<td></td>
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<td>1</td>
<td>2</td>
<td>3</td>
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<td></td>
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<tr>
<td>Oxidizing Solids</td>
<td>1</td>
<td>2</td>
<td>3</td>
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<td></td>
</tr>
<tr>
<td>Organic Peroxides</td>
<td>Type A</td>
<td>Type B</td>
<td>Type C</td>
<td>Type D</td>
<td>Type E</td>
<td>Type F</td>
<td>Type G</td>
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<tr>
<td>Corrosive to Metals</td>
<td>1</td>
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<td></td>
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<tr>
<td>Combustible Dust</td>
<td>Single Category</td>
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</tr>
</tbody>
</table>

### Labels

There are several new label elements:

- Symbols called “Pictograms”
- Signal Words
- Hazard Statements
- Precautionary Statements
- Product Identification
- Supplier/Manufacturer Identification

www.osha.gov/Publications/HazComm_QuickCard_Labels.html
Labels: Shipping

Effective June 1, 2015 all shipping labels will be required to have all GHS label elements.

DOT Shipping Container Label

(55 gallon/200 liter drum)

**Product Name:**

**Supplier Information:**

**Emergency Phone Number:**

**Pictograms within DOT label**

**D.O.T Shipping**

**Flammable liquids, toxic, n.o.s. (contains XYZ)**

**UN 1992**

**Transport "Pictograms"**

- **Flammable Liquid**
- **Flammable Gas**
- **Flammable Aerosol**
- **Substances, which in contact with water, emit flammable gases (Dangerous When Wet)**
- **Flammable solid**
- **Self-Reactive Substances**
- **Pyrophorics (Spontaneously Combustible)**
- **Self-Heating Substances**
- **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**
- **Toxic Gas**
- **Toxic or Corrosive**
- **Corrosive**
- **Marine Pollutant**
- **Organic Peroxides Division 5.2**
DOT and MIOSHA Labels

- DOT labels may take precedence over similar GHS pictograms for shipping containers.
- DOT does not have labels that correspond to the “Health Hazard” or the “Acute Toxicity” (less severe = exclamation mark).

Labels: Pictograms

- There are 9 pictograms. Only 8 are regulated by MIOSHA
  - Health Hazards
  - Physical Hazards
  - Environmental Hazards (Regulated by DEQ)
Labels: Pictograms – Health Hazards

Acute toxicity (Severe)

Acute toxicity (Less Severe):
- Irritant
- Dermal sensitizer
- Acute toxicity (harmful)
- Narcotic effects
- Respiratory tract irritation
- Hazardous to Ozone Layer (Non-Mandatory)

Acute = short-term effect

Labels: Pictograms – Health Hazards (continued)

Skin corrosion
Serious eye damage/
Eye irritation

Carcinogen
Respiratory sensitizer
Reproductive toxicity
Target organ toxicity
Mutagenicity
Aspiration Hazard
Labels: Pictograms – Physical Hazards

- Explosives
- Self reactives
- Organic peroxides
- Flammables
- Self reactives
- Pyrophorics
- Self heating
- Emits flammable gas
- Organic peroxides

Labels: Pictograms – Physical Hazards (continued)

- Corrosive to Metals
- Oxidizer
- Gases under Pressure
Labels: Signal Word

These are words used to indicate the severity of the hazard and alert employees to the potential hazard.

Only 2 signal words will appear:
- “DANGER” (more severe hazard)
- “WARNING” (less severe hazard)

Not all labels will have a signal word. Some chemicals are not hazardous enough to require that a signal word appear on the label.

Labels: Hazard Statement

There are specific hazard statements that must appear on the label based on the chemical hazard classification.

Examples:
- Flammable liquid and vapor
- Causes skin irritation
- May cause cancer
Labels and other forms of warning – Precautionary Statements

- Recommended measures related to:
  - Prevention
  - Response
  - Storage
  - Disposal

- Examples:
  - Wear respiratory protection
  - Wash with soap and water
  - Store in a well ventilated place
  - Not a mandate for employers/employees to follow.

Label: Identification

- Product identification (i.e. name of product)
- Supplier identification:
  - Address
  - Telephone number
Label: Other information

Other information that may be included on the label:
- Physical state
- Color
- Hazards not otherwise classified
- Route of exposure
- Storage and disposal
- Hazard prevention and emergency response instructions

Label: Sample

Can you identify each label component?

Signal Word: Danger

Hazard Statements:
Toxic If Swallowed, Flammable Liquid and Vapor
Flammable and Acute Toxicity – Severe

Product Identifier:
ToxiFlam (Contains: XYZ)

Precautionary Statements:
Do not eat, drink or use tobacco when using this product. Wash hands thoroughly after handling. Keep container tightly closed. Keep away from heat/sparks/open flame. - No smoking. Wear protective gloves and eye/face protection. Ground container and receiving equipment. Use explosion-proof electrical equipment. Take precautionary measures against static discharge. Use only non-sparking tools. Store in cool/well-ventilated place.

IF SWALLOWED: Immediately call a POISON CONTROL CENTER or doctor/physician. Rinse mouth.

Supplemental Information:
See Safety Data Sheet for further details regarding safe use of this product.

MyCompany, MyStreet, MyTown NJ 00000, Tel: 444 966 6666 Supplier Identification
Secondary Container Labels

Excerpt from the Hazard Communication Standard (f):

- **(6) Workplace labeling.** Except as provided in paragraphs (7) and (8) of this section, the employer shall ensure that each container of hazardous chemicals in the workplace is labeled, tagged or marked with either:
  - (i) The information specified under paragraphs (1)(i) through (v) of this section for labels on shipped containers [GHS Label]; or,
  - (ii) Product identifier **and** words, pictures, symbols, or combination thereof, which provide at least general information regarding the hazards of the chemicals, and which, in conjunction with the other information immediately available to employees under the hazard communication program, will provide employees with the specific information regarding the physical and health hazards of the hazardous chemical [e.g. HMIS, NFPA or other label system].

Labels: Secondary containers

- Must be consistent with the revised Haz Com standard
- No conflicting hazard warnings or pictograms.
- May use written materials (e.g., signs, placards, etc.) in lieu of affixing labels to individual stationary process containers.
- Employer can use GHS compliant labels (same as shipping).

<table>
<thead>
<tr>
<th>HMIS Label</th>
<th>NFPA Label</th>
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<tr>
<td><img src="image" alt="HMIS Label" /></td>
<td><img src="image" alt="NFPA Label" /></td>
</tr>
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</table>

Must include notation of chronic health effects
Safety Data Sheets

- Material Safety Data Sheets (MSDS) are now called Safety Data Sheets (SDS).
- All SDSs will have a consistent 16-section format.
- Employers must provide training on SDSs, including the order of information and how employees can obtain and use the appropriate hazard information.

Safety Data Sheets (SDSs)

**New 16-section standardized SDS format required (ANSI Z400.1)**

- Section 1 – Identification
- Section 2 – Hazard(s) identification
- Section 3 – Composition / Information on Ingredients
- Section 4 – First-aid Measures
- Section 5 – Fire-fighting Measures
- Section 6 – Accidental Release Measures
- Section 7 – Handling and Storage
- Section 8 – Exposure Controls / Personal Protection
- Section 9 – Physical and Chemical Properties
- Section 10 – Stability and Reactivity
- Section 11 – Toxicological Information
- Section 12 – Ecological Information*
- Section 13 – Disposal Consideration*
- Section 14 – Transport Information*
- Section 15 – Regulatory Information*
- Section 16 – Other information including date of preparation of last revision

*Sections outside of MIOSHA jurisdiction but inclusion of these sections is necessary for a GHS compliant SDS
Methanol SDS (Sigma Aldrich)

Secondary Container Labeling (Section 2 continued)

HMIS Classification
Health hazard: 2
Chronic Health Hazard: *
Flammability: 3
Physical hazards: 0

NFPA Rating
Health hazard: 2
Fire: 3
Reactivity Hazard: 0

Revised Posters – MSDS to SDS
Have I completed the training?

• Maybe............

Has the following been provided by the employer?

Employers must provide employees with the details of the facility specific hazard communication program:

• Location and availability of written program and SDSs
• Specific information related to chemicals in the facility:
  • Physical Hazards;
  • Health Hazards;
  • Hazards not otherwise classified.
Has the following been provided by the employer? (continued)

- Chemical list, location and use of hazardous chemicals
- Secondary container labeling system
- Specific procedures to follow to protect employees from the chemical hazard
- Methods used to detect the presence or release of hazardous chemicals (sensor alarms, odors, visual other monitoring devices)

Federal OSHA Resources
Haz Com Web Page - www.osha.gov/dsg/hazcom/index.html

- Regulatory
  - Haz Com 2012 Final Rule
  - Haz Com Comparison: Haz Com 1994 and 2012
    - Side-by-side
    - Redline Strikeout of the Regulatory Text
  - FAQs

- Guidance
  - OSHA Briefs
  - Fact Sheet
  - Quick Cards
    - Labeling
    - Safety Data Sheets
  - Pictograms (downloadable too)
  - Effective Dates
  - OSHA Guide to GHS
    - www.osha.gov/dsg/hazcom/ghs.html
  - GHS documents (links to purple book)
MIOSHA Resources
Hazcom/GHS Webpage on MIOSHA’s Website
www.michigan.gov/ghs

Hazard Communication Employee Training Options - Use one of these to meet the 12/01/13 training deadline in the revised standard.

- MTHazCom & Right To Know Training Calendar
- Hazard Communication Employee Training Program 2013 - PPT modifiable version with speaker notes
  (Recorded webinar version of Hazard Communication Employee Training presentation)
- NEW Hazard Communication Employee Training - Narrated PowerPoint Modules
  NOTE: This Hazard Communication Employee Training program has been divided into three modules for use as “toolbox” talks and to reduce download file size. The modules are best viewed using Mozilla Firefox or Google Chrome. If the narrated presentation of the module does not automatically start the slide show, select the slide show button in the lower right of the PowerPoint program to automate the program.
  Module 1: Overview and Classification – 10 mins - (Recorded voice over PowerPoint)
  Module 2: Labels – 14 mins - (Recorded voice over PowerPoint)
  Module 3: Safety Data Sheets (SDSs) – 13 mins - (Recorded voice over PowerPoint)
- LESS DVD/Video Lending Library currently has two DVDs on GHS that you can request on loan: GHS Globalize Your Communication #1072 & HazCom And The Global Harmonizing System: Employee Training #1068

MIOSHA Resources (cont.)

Additional Resources:

- Hazard Communication Sample Plan (CET-0530) (pdf / doc)
- Hazard Communication - Aligning with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS) (CET-0531)
- MIOSHA Standards Affected by the New GHS/Hazard Communication Standard (CET-0532)
- MIOSHA Regulated Area Signs Affected by the New GHS/Hazard Communication Standard (CET-0533)
- Revised 2012 Hazard Communication Standard FAQ’s (CET-0186)
- Right To Know Hazard Communication Compliance Guide (SP-22)
- Safety Data Sheet (SDS) Location Poster (CET-2105)
- Near Revised Safety Data Sheet (SDS) Poster (CET-2106)
Resources (cont.)

OSHA Tools:
- Safety & Health Topics Page: Hazard Communication
- Labelling
- Safety Data Sheets
- Pictograms
- Quick Cards
- OSHA Wallet Card
- OSHA Fact Sheet: Training Requirements for the Revised Hazard Communication Standard (December 1, 2013)
- United Nations Globally Harmonized System of Classification and Labelling of Chemicals (GHS) Publications (past and current versions)

Note: OSHA and MOSHA Hazard Communication Standards are based on GHS Revision 3.

Enforcement Status?

access the information effectively. The Office of Health Enforcement is developing a revised Compliance Directive to outline procedures and policies for the new standard. This memo provides interim guidance to Compliance Safety and Health Officers (CSHOs) on the December 1, 2013, implementation date. Beginning December 2, 2013, if an employer has not provided the training required by the HCS, citations shall be issued for training deficiencies under 1910.1200(b) of HCS 2012. The following is a brief outline of the expectations on or after December 1, 2013, for all employers covered by the standard:

- Employers must train all potentially exposed employees on the new label elements (e.g., pictograms and signal words) and the new SDS format (i.e., the section order and the type of information contained within each section) by this date.
- This compliance date does not change or increase the existing HCS requirement that employees be trained on the hazards of the chemicals in their work area.
- Prior to December 1, 2013, no citation will be issued to a company for not conducting training on the new information even if the company has received new labels and SDSs prior to the December 1, 2013 deadline.
- After December 1, 2013, employers that have not provided the updated training on SDSs and labels may be cited under 1910.1200(b)(3)(iv) of HCS 2012.
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### Questions

Contact MIOSHA for information or assistance:

**MIOSHA Consultation Education and Training**

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