GHS for Classification & Labeling of Chemicals

Part 3: Implementing Your New HazCom Program

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Before we begin…

- To listen to the broadcast through your computer speakers, please ensure your "Audio Mode" is set to "Use Mic & Speakers" and that your volume is unmuted and turned up.

- If you’re listening through the phone, please make sure your "Audio Mode" says "Use Telephone"
Before we begin…

- Everyone is muted. If you have a question or comment, use the “Questions” box in the control panel.
- A recording of this webinar will be available at www.bradyid.com/ghs by January 20th.
GHS for Classification & Labeling of Chemicals

Part 3: Implementing Your New HazCom Program
Implementing Your New Hazard Communication Program

- Latest Updates
- GHS Basics
- Updating Your Program
- Labeling Secondary Containers
- Transportation Pictograms
- Training Your Workforce
- Tools Available
- What Next
10/25/11: OSHA submits revised HazCom rule to OMB (OIRA).

The OIRA may ordinarily take 90 days to formally review the rule, before it is either;

a) Published in the Federal Register
b) Changed before publication
c) Withdrawn before a review is completed
d) Returned to OSHA for modification

View Executive Order submissions currently under review at: http://www.reginfo.gov/public/do/eoReviewSearch
United States – In development:
- As of Oct. 25, 2011, with then OMB, then Federal Register
- 30 – 60 days from Jan. 12th, 2012, by several estimates

Canada – Reviewing for development:
- Health Canada reviewing GHS for incorporation into WHMIS

Mexico – Voluntary standard proclaimed:
- The first NAFTA member to adopt
- However, NOM-018-STPS-2000 remains in force.
- ANIQ national industrial association requested authorization for an alternate procedure to comply with NOM 2000 through the GHS NMX-R

Brazil – Implemented for substances:
- Pure substances (GHS classification, labeling & SDS) mandatory as of Feb, 2011.
- Mixtures mandatory as of June 1, 2015
GHS provides criteria for classifying substances and mixtures according to their health, physical and environmental hazards, then effectively communicating this.
1) Improve human & environmental health
2) Common framework for all countries
3) Lessen need to test chemicals
4) Facilitate international trade

UNECE GHS 3rd Revised Edition 1.1.1.4
10 Health Hazards
Acute toxicity
Skin corrosion/irritation
Serious eye damage/ eye irritation
Respiratory or skin sensitization
Germ cell mutagenicity
Carcinogenicity
Reproductive toxicity
Specific target organ toxicity – single exposure
– repeated exposure
Aspiration hazard

16 Physical Hazards
Explosives
Flammable gases
Aerosols
Oxidizing gases
Gases under pressure
Flammable liquids
Flammable solids
Oxidizing liquids
Oxidizing solids
plus 7 more

2 Environmental Hazards*
Aquatic environment haz.
Ozone layer hazards

* Not considered by OSHA
GHS LABEL ELEMENTS

Product Name or Identifier

Pictogram(s)

“Danger” or “Warning”

Signal Word

Hazard Statements

e.g. Fatal if swallowed

Precautionary Statements

Do not breath dust/fume/gas/mist/vapor/spray

First Aid Statements

Get medical attention if you feel unwell

Name and Address of Company

Telephone Number

Federal Register 9_30_09

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LABEL ELEMENTS - PICTOGRAMS

Chemical Risks

Health Risks

Environmental Risks

Pictograms 01 – 05 in order

Pictogram 09 – likely EPA

Pictograms 06 – 08 in order

Federal Register 9_30_09
**EU SUBSTANCE INFORMATION REFERENCE DOCUMENTS:**
2. ESIS - European Chemical Substances Information System
5 MAIN REQUIREMENTS OF HAZCOM

1. Written Hazard Communication Plan
2. Chemical Inventory
3. Labels & Warnings
4. Safety Data Sheet Documents
5. Employee Training
GHS IMPACTS ON HAZCOM REQUIREMENTS

1. Written Hazard Communication Plan
2. Chemical Inventory
3. Labels & Warnings
4. Safety Data Sheet Documents
5. Employee Training
1. Written Hazard Communication Plan

The starting point; your current plan:
- Blueprint for implementation
- Written plan that identifies how all requirements will be met, including:
  - labels and other forms of warning
  - safety data sheets (SDS)
  - employee information and training
- Review your current plan with the revised, published rule in-hand.

OSHA Model Hazard Communication Plan
Model Hazard Communication Program

1. Company Policy
To ensure that information about the dangers of all hazardous chemicals used by (Name of Company) is known by all affected employees, the following hazardous information program has been established...

2. Container Labeling
3. Material Safety Data Sheets (MSDSs)
4. Employee Training and Information
5. Hazardous Non-routine Tasks
6. Informing Other Employers/Contractors
7. List of Hazardous Chemicals
8. Chemicals in Unlabeled Pipes
9. Program Availability

A copy of this program will be made available, upon request, to employees and their representatives.

OSHA Model Hazard Communication Plan
1. Written Hazard Communication Plan

Model Hazard Communication Program

1. Company Policy
To ensure that information about the dangers of all hazardous chemicals used by (Name of Company) is known by all affected employees, the following hazardous information program has been established...

2. Container Labeling – Revise & Train


4. Employee Training and Information – Update

5. Hazardous Non-routine Tasks

6. Informing Other Employers/Contractors

7. List of Hazardous Chemicals – Update Your Inventory

8. Chemicals in Unlabeled Pipes

9. Program Availability
A copy of this program will be made available, upon request, to employees and their representatives.

OSHA Model Hazard Communication Plan
2. Chemical Inventory

Review your chemical inventory:
- Prepare list of chemicals
- Survey the workplace for chemicals:
  - solids/liquids/gases/fumes
- Check both the hazardous nature and potential for exposure
- Check for updated SDS’s (see #4)
- Have procedures to record:
  - new chemical receipts
  - chemical purging
  - SDS management for both.
- Attach chemical list to written program
3. Labels & Warnings

- Update the labels and warnings section:
  - Process and execution for container labeling
  - Worn, missing and unreadable labels replaced as needed
- Check secondary container labels for consistency with the:
  - revised HazCom regulation
  - revised labels on containers being received
- Label identities should link to the SDS & chemical inventories
- Check warning signs & labels for OSHA Subpart Z-Toxic & Hazardous Substances. Many may be revised; eg § 1910.1027 Cadmium:
  
  **DANGER**
  CONTAINS CADMIUM
  MAY CAUSE CANCER
  CAUSES DAMAGE TO LUNGS
  AND KIDNEYS
  AVOID CREATING DUST
4. Safety Data Sheet Documents

- Check your safety data sheets (SDSs) against your chemical inventory.
  - Do you have an (M)SDS for each chemical in your inventory?
  - Do you have SDSs for other chemicals?
  - Have duplicates and obsolete SDSs been removed?

- Contact chemical suppliers to receive or learn when they will begin supplying SDS’s according to the new format.

- Are the SDSs readily accessible to employees?
5. Employee Training

- Audit your training records—is your HazCom training current? **NO**
- Per the HCS, all employees must be provided information and be trained prior to initial assignment and whenever the hazard changes.
- The most important training aspects are to ensure that employees:
  - know when they’re exposed
  - know how to read and use labels and SDS’s
  - Follow the appropriate protective measures

- Employees must be trained on all of the changes introduced with the revised HCS standard.
POLL QUESTION
SECONDARY CONTAINERS

- GHS labels or other label elements may be allowed for workplace containers
  - e.g. storage tanks

- Alternative labeling may be acceptable if the Competent Authority allows them

- It may be acceptable for label information on secondary containers to be displayed in the work area
ECOSOC
United Nations Economic and Social Council
Sub-Committee of Experts on the Transportation of Dangerous Goods

The U.N. Recommendations on the Transport of Dangerous Goods

- This regulation has been internationally harmonized for some time now.

GHS and DOT Markings

- Regulations for transport of dangerous goods reflect the 16th revised edition of the UN Model Regulations, with very few exceptions.

DOT PHMSA
Department of Transportation,
Pipeline and Hazardous Material Safety Administration

- PHMSA has adopted elements of GHS already that directly affect the transport sector. (i.e. hazard classification for toxic material and flammable liquids)


- For transport, pictograms will have the background and symbol colors currently used.
GHS and DOT Markings

Class 1

Class 2

Class 3

Class 4

Class 5

Class 6

Class 7

Class 8

Class 9
- Refresher training if warranted
  - Items that employees are unable to identify, understand, and relay back to employer should be retrained
    - ... but primarily ...
  - GHS-related changes introduced & emphasized
    - Extensive container labeling changes
    - Reading & interpreting Safety Data Sheets
    - Following appropriate protective measures
KEY TARGET AUDIENCES

- Key Target Audiences:
  - Workers
  - Emergency Responders
  - Those involved with preparation of labels/SDS/hazcom strategies

- Other Secondary:
  - Those involved in transporting
  - Those involved in supplying hazardous chemicals
General Elements of HazCom/GHS Training – Part 1

A. Understanding the new Hazard Communication Standard
B. Understanding the Safety Data Sheet
C. Understanding Labels
  ➢ Pictograms
  ➢ Signal Words
  ➢ Hazard Statements
  ➢ Precautionary Statements
D. Understanding Relationship of SDS and Label
E. Understanding Health Information

OSHA Draft Model for HazCom Training
TRAINING TIPS – Safety Data Sheets

- UN GHS 3rd edition; Annex 4
  - Guidance on the preparation of SDS
- Provide an in-depth information reference for chemicals and mixtures.
- Further SDS Advantages:
  - Improves comprehensibility
  - Provides a standardized template
  - Follows industry consensus standards
  - ANSI Z400.1 similarities
1. Identification
2. **Hazard(s) identification** *(includes label elements)*
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
TRAINING TIPS – Label Standardization

From divergent HazCom systems …

**NFPA RTK - US**

![NFPA RTK Image]

**WHMIS Std – Canadian RTK**

![WHMIS Std Image]

**HSID Std - Europe**

![HSID Std Image]

Globally-Standardized GHS Std

![Globally-Standardized GHS Std Image]
TRAINING TIPS – GHS Label Elements

Product Name or Identifier

Pictogram(s)

“Danger” or “Warning”

Signal Word

Hazard Statements

e.g. Fatal if swallowed

Precautionary Statements

Do not breath dust/fume/gas/mist/vapor/spray

First Aid Statements

Get medical attention if you feel unwell

Name and Address of Company

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- Respiratory or skin sensitization
- Germ cell mutagenicity
- Carcinogenicity
- Reproductive toxicity
- Specific target organ toxicity
  - single exposure
  - repeated exposure
- Aspiration hazard

16 Physical Hazards
- Explosives
- Flammable gases
- Aerosols
- Oxidizing gases
- Gases under pressure
- Flammable liquids
- Flammable solids
- Oxidizing solids
  - Etc.

2 Environmental Hazards*
- Aquatic environment haz.
- Ozone layer hazards

* Not considered by OSHA
Hazard Statements

- Physical (H200 series codification) – Appendix B
  - H200 Unstable explosive
  - H221 Flammable gas
- Health (H300) – Appendix A
  - H300 Fatal if swallowed
  - H301 Toxic if swallowed
- Environmental (H400) – EPA
  - H400 Very toxic to aquatic life

Precautionary Statements

- General (P100) – P102 Keep out of reach of children
- Prevention (P200) – P235 Keep cool
- Response (P300) – P380 Evacuate area
- Storage (P400)
- Disposal (P500)
### Hazard & Precautionary Statements

<table>
<thead>
<tr>
<th>Hazard category</th>
<th>Signal word</th>
<th>Hazard statement</th>
<th>Symbol</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unstable explosive</td>
<td>Danger</td>
<td>H200 Unstable explosive</td>
<td>Exploding bomb</td>
</tr>
</tbody>
</table>

#### Recommended Precautionary statements

<table>
<thead>
<tr>
<th>Prevention</th>
<th>Response</th>
<th>Storage</th>
<th>Disposal</th>
</tr>
</thead>
<tbody>
<tr>
<td>P201</td>
<td>P372</td>
<td>P401</td>
<td>P501</td>
</tr>
<tr>
<td>Obtain special instructions before use.</td>
<td>Explosion risk in case of fire.</td>
<td>Store ...</td>
<td>Dispose of contents/container to ...</td>
</tr>
<tr>
<td>P202</td>
<td>P373</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do not handle until all safety precautions have been read and understood.</td>
<td>DO NOT fight fire when fire reaches explosives.</td>
<td>...in accordance with local/regional/ national/international regulations (to be specified).</td>
<td>...in accordance with local/regional/ national/international regulations (to be specified).</td>
</tr>
<tr>
<td>P281</td>
<td></td>
<td>P380</td>
<td></td>
</tr>
<tr>
<td>Use personal protective equipment as required.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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**GHS Globally Harmonized System**

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**BRADY**

**WHEN PERFORMANCE MATTERS MOST**
Use of visual GHS pictograms is the new method of identifying chemical hazards.

Pictograms need to be interpreted through SDS and will be linked to the various risks involved with the type of chemicals.

Divided into three hazard classes:
1. Chemical/Physical Risks
2. Health Risks
3. Environmental Risks**
TRAINING TIPS – Chemical Information

➢ Chemical/Physical Risks
  1. Explosives
  2. Flammables
  3. Oxidizers
  4. Gases Under Pressure
  5. Corrosives

Chemical Risks Pictograms

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Health Risks

1. Severe Toxics
2. Acute Toxics
3. Health Dangers
4. Corrosives
Example 1: Combination packaging for a Category 2 flammable liquid

Outer Packaging: Box with a flammable liquid transport label*

Inner Packaging: Plastic bottle with GHS hazard warning label**

From GHS Purple Book.
* Only the UN transport markings and labels are required for outer packagings.
Example 2: Combination packaging for a Category 1 specific target organ toxicant and Category 2 flammable liquid

Outer Packaging: Box with a flammable liquid transport label*

Inner Packaging: Plastic bottle with GHS hazard warning label**

From GHS Purple Book.
Example 5: Single packaging for a Category 1 specific target organ toxicant and Category 2 flammable liquid

From GHS Purple Book.
1. Define the resources
2. Define the size of the group
3. Define population characteristics
4. Define task characteristics
5. List the learning objectives
6. Arrange the objectives in the desired sequence
7. List the methods/media options
8. Make final methods/media choices
9. Write guidelines to the instructor
10. Write brief guidelines for the students

OSHA-Recommended Training Methods
SOLUTIONS SUPPORTING GHS

Brady DIY Labels for Production & In-Plant Use
- GlobalMark Printer
- MiniMark Printer
- BBP31 Printer
- All with Markware 3.8.1 Software

Custom Label Ordering

Pre-Printed Red Diamond Pictograms
- Apply to mono-color Hazcom labels
- Apply to tanks, vessels & Pipemarkers

SDS Binders
GETTING READY FOR GHS

- Keep informed on regulation guidelines and publication dates
- Choose a specific timeframe to begin implementing GHS
- Chemical manufacturers / importers should begin preparing for / authoring GHS-compliant SDS’s and labeling
- Train your employees on GHS
- Stay alert for newly formatted SDS’s. Capture and file them.
- Update your chemical inventory
- Talk to your chemical suppliers about their transition plans
- Confirm that your secondary labeling system is GHS compliant. Use updated (GHS) labeling software to create and produce your labels
Questions
The New HazCom Standard – Understanding & Applying the Final Rules

tbd in March or April following rule finalization

Current GHS-related content can be found at BradyID.com/ghs

Questions and Comments are welcome: 
Tom at Tom_Campbell@bradycorp.com