

# OSHA Hazard Communication Standard

## 29 CFR 1910.1200

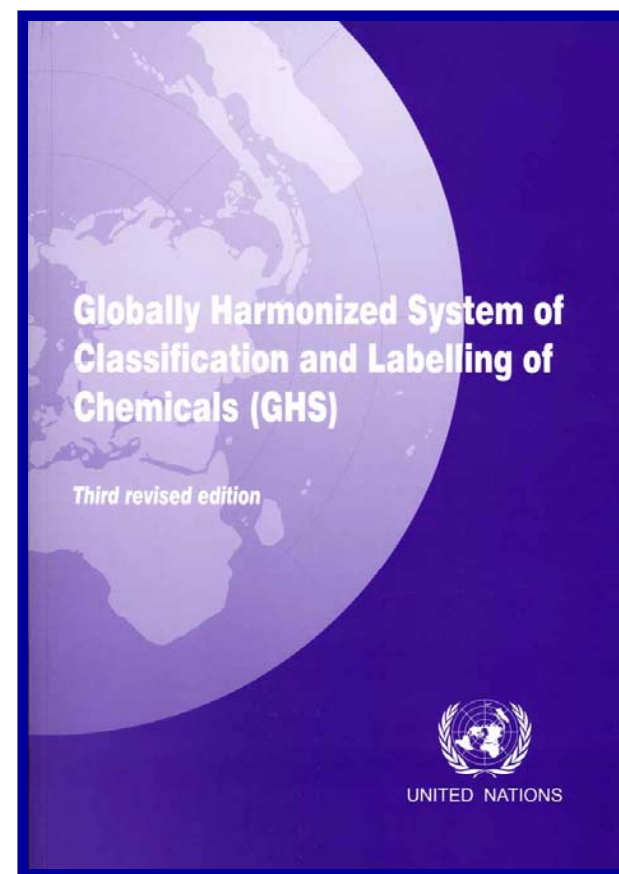
New Globally Harmonized System of  
Classification and Labelling of  
Chemicals (GHS)



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# Hazard Communication Standard

- Initially developed in 1983, giving employees a “right to know”
- Requires a comprehensive hazard evaluation and communication process;
  - Ensuring hazards of all chemicals are evaluated
  - Creating awareness of chemical hazards along with necessary protective measure to employees
- Chemical manufacturers and importers must develop and provide a container label and a Safety Data Sheet (SDS).
- Employers with employees exposed to hazardous chemicals must develop a hazard communication program including:**
  - Labels
  - Access to SDSs
  - Training on the workplace hazardous chemicals

*The current HCS establishes requirements for minimum information that must be included on labels and SDSs, but **does not provide specific language to convey the information or a format in which to provide it.***



# 5 MAIN REQUIREMENTS OF HAZCOM

*Written Hazard Communication Plan*

*Chemical Inventory*

*Labels & Warnings*

*Employee Training*

*Safety Data Sheet Documents*

## Background of GHS

- United Nations Conference on Environment and Development (1992) mandated a globally harmonized chemical classification and labeling system
  - Many different countries were labeling hazardous chemicals, however formats and labels were grossly different, causing confusion
- GHS was formally adopted in 2002
  - United Nations Committee of Experts on the Transport of Dangerous Goods
  - Globally Harmonized System of Classification and Labeling of Chemicals.
- Four existing national workplace safety systems serve as the basis for GHS
  - United States
  - Canada
  - European Union
  - United Nations



# What is GHS?

## NFPA RTK - US

**Methanol**  
67-56-1

**WARNING**  
HEALTH HAZARD: Lead  
ORGAN HAZARD: Kidney  
DANGER  
HEALTH HAZARDS: Poison  
ORGAN HAZARDS: Nervous System, Kidney, Blood, Reproductive System

0 Health Hazard  
0 Fire Hazard  
0 Instability

CONSULT MATERIAL SAFETY DATA SHEET FOR FURTHER INFORMATION ON HAZARDS

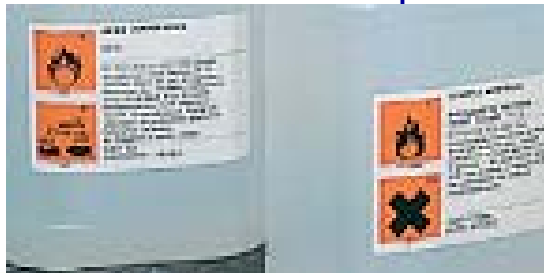
## WHMIS Std - Canada

**Acetone 1128-89**

Be sure to handle this substance safely!!  
Target health hazards include corrosive hazard and vapor hazard. always wear proper PPE and consult Material Safety Data Sheet

REFER TO MATERIAL SAFETY DATA SHEET FOR FURTHER INFORMATION  
POUR PLUS D'INFORMATION, CONSULTEZ LA FICHE SIGNALÉTIQUE

## HSID Std - Europe



## Globally-Standardized GHS Std

**Acetone**  
ACETONE

Internal Ref. # 250L

**ENGLISH:** H200: Unstable explosives. - H221: Flammable gas. - H260: In contact with water releases flammable gases which may ignite spontaneously.  
P101: If medical advice is needed, have product container or label at hand. - P220: Keep away from combustible materials. - P223: Keep away from any possible contact with water, because of violent reaction and possible flash fire.

**FRANCAIS:** H200: Explosif instable. - H221: Gaz inflammable. - H260: Dégage au contact de l'eau des gaz inflammables qui peuvent s'enflammer spontanément.  
P101: En cas de consultation d'un médecin, garder à disposition le récipient ou l'étiquette. - P220: Tenir à l'écart des matières combustibles. - P223: Éviter tout contact avec l'eau, à cause du risque de réaction violente et d'inflammation spontanée.

<b>DANGER</b>	222222-22-2	333-333-33-3
<b>DANGER</b>	111-111-1	Reach Authorization #

Brady Corporation  
6555 West Good Hope Road  
Milwaukee, WI 53223  
414-444-4444

Insert Comment here: ...

# OSHA's Final Ruling on GHS

- OSHA has updated its Hazard Communication Standard (HCS) to align with the United Nations' *Globally Harmonized System of Classification and Labeling of Chemicals* (GHS).
- Modifications will **reduce costs** and **burdens** while protecting employers and employees.

## Modifications include:

- Revised *criteria for classification* of chemical hazards
- Revised and standardized *labeling requirements*
- A specified format for *safety data sheets*
- Requirements for *employee training* on labels and safety data sheets



# Impact of GHS for U.S. Businesses

- **880,000 hazardous chemicals** are currently used in the U.S.
- Hazard Communication affects **43 million American workers** in over 5 million workplaces.
- GHS will prevent 500 injuries/illnesses and 43 lives per year, equaling a total of **\$250 million in reduced health and safety risks.**
- Costs per year will total **\$201 million dollars** to comply with revisions to the HCS.
- Future net benefits are estimated at **\$556 million dollars per year.**



U.S. Dept. of Labor, OSHA, Directorate of Evaluation and Analysis, Office of Regulatory Analysis, 2011.

# Changes Affecting U.S. Businesses

- With the new revised HCS that uses GHS formats, the following changes will affect U.S. businesses that handle hazardous chemicals:
  - Reclassification of Chemical Hazards
  - Revision of SDSs and Labels
  - Management Familiarization and Employee Training
  - Label Printing Costs
- The revised HCS primarily affects manufacturers and importers of hazardous chemicals.

## Breakdown of Annual GHS Implementation Costs

Reclassification of Chemical Hazards and Revision of SDSs and Labels ..	<b>\$22.5 million</b>
Employee Training .....	<b>\$95.4 million</b>
Management Familiarization and Other Costs .....	<b>\$59.0 million</b>
Additional Label Printing Costs .....	<b>\$24.1 million</b>

U.S. Dept. of Labor, OSHA, Directorate of Evaluation and Analysis, Office of Regulatory Analysis, 2011.



## 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](#)

## 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**

#### 3. Safety Data Sheets (SDSs) – **Revisions. Obtain & 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**

Labels will relate directly to what information is listed in SDSs from chemical manufacturers. All information on the label will also be found in the SDS.

## ■ **Product Identifiers**

- Chemical name, code, quantity, etc.

## ■ **Supplier Information**

- Manufacturer's company name and contact information

## ■ **Hazard Statements**

- Various detailed phrases describing the hazards associated with a chemical.

## ■ **Precautionary Statements**

- Recommended statements measures that should be taken to protect against hazardous exposures, improper storage or handling of a chemical

## ■ **Signal Word**

- One of two signal words for alerting level of hazard on each label:
  - DANGER – more severe hazards possible.
  - WARNING – denotes a less serious hazard.

## ■ **Supplemental Information**

- Any other instructional information that the chemical manufacturer would like to provide.

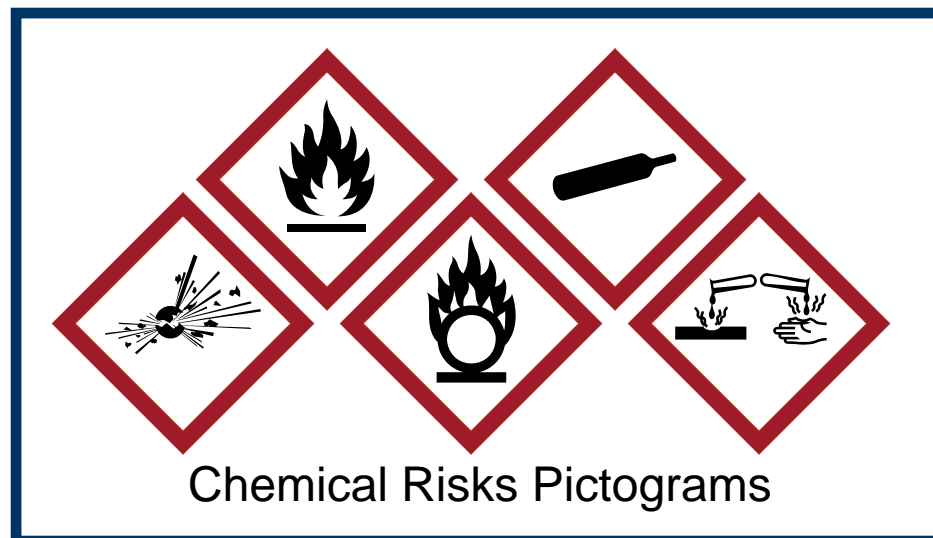
## ■ **Pictograms**

- Eight different black symbols with a diamond shaped red boarder that depict the hazard classification of the given substance.

# TRAINING TIPS – Chemical Information

## Chemical/Physical Risks

1. Explosives
2. Flammables
3. Oxidizers
4. Gases Under Pressure
5. Corrosives



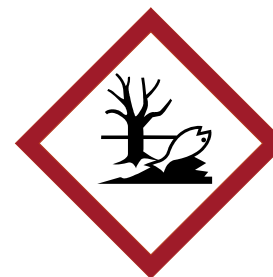
## Health Risks

1. Severe Toxics
2. Acute Toxics
3. Health Dangers
4. Corrosives




## Environmental Hazard Class\*

*\*OSHA does not regulate the Environmental Hazard Class, however the EPA is expected to incorporate this element of GHS into their standards.*




# EXAMPLE GHS HAZCOM LABEL

	<b>PRODUCT NAME</b>	
	HAZARD STATEMENTS	
	PRECAUTIONARY STATEMENTS	
	<b>SIGNAL WORD</b>	
CAPACITY UNITS	Company Name	Chemical Identifiers
	Company Address	CAS # / Reach Authorization #
	Emergency Phone Number	



## Example GHS Label

<p><b>DANGER</b></p> 	<p><b>Carbon Monoxide</b></p> <hr/> <p>H220: Extremely flammable gas. - H331: Toxic if inhaled. - H360D: May damage the unborn child. - H372: Causes damage to organs through prolonged or repeated exposure</p> <p>Keep container tightly closed. Avoid breathing vapours. If inhaled: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a Poison Center or doctor. Store in a well-ventilated place.</p> <hr/> <table border="0"> <tr> <td>3630-08-0</td> <td>006-001-00-2</td> <td>Company ABC</td> </tr> <tr> <td>211-128-3</td> <td>#####</td> <td>1234 Long Road</td> </tr> <tr> <td></td> <td></td> <td>New York, New York</td> </tr> <tr> <td></td> <td></td> <td>555-800-8585</td> </tr> </table>	3630-08-0	006-001-00-2	Company ABC	211-128-3	#####	1234 Long Road			New York, New York			555-800-8585
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		New York, New York											
		555-800-8585											
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- Provides immediate visual reminders of hazards.
- Past labels were inconsistent in terminology and visuals.
- Standardized signal word, visuals, and hazard statements are in place.
- Pictograms reinforce message presented in the text while enhancing communication for low-literacy users.
- Precautionary statements provide useful steps to protect and prevent from chemical related injuries.

# Secondary Container Labels

- Employers may choose to label workplace containers;
  - with the same GHS label that is used to ship containers under the revised rule,
  - or with label alternatives that meet the requirements for the standard.
- National Fire Protection Association (NFPA) 704 Hazard Rating and the Hazardous Material Information System (HMIS) for labeling are considered acceptable for workplace containers.
  - Information supplied on these labels must be consistent with the revised HCS, e.g., no conflicting hazard warnings or pictograms.
- It will be a best practice to label your secondary container chemicals with the **same GHS format** as the way they came into the facility



## 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?

# Safety Data Sheet Changes

## New SDS Order and Elements

- GHS harmonization will standardize the order of SDS information for ease of use for employees along with improved accuracy of the information presented
- Previously known as Material Data Safety Sheets (MSDS), now will be referred to as Safety Data Sheets (SDS).
- The number of sections has been increased from a nine section format to 16 sections.

1. Identification of the substance or mixture and of the supplier
2. Hazards identification
3. Composition/information on ingredients
4. First aid measures
5. Firefighting measures
6. Accidental release measures
7. Handling and storage
8. Exposure controls/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 including information on preparation and revision of the SDS

*\*\*sections are not required in final rule but suggested by original U.N. GHS publication and may be added by employers*

## 5. Employee Training

- OSHA has not proposed to change training provisions under the HCS other than to initially train employees on new GHS elements.
- Minor revisions to the HCS on training:
  - Labels and SDSs must be adequately explained to employees.
  - Employees must understand standardized headings and sequence of SDS information.
  - Training on the standardized label elements must also be given.
- HCS training is meant to explain and reinforce information to the employees on areas of labels, SDSs, protective measures to be taken, and the understanding of chemical hazards in their workplace.

Training is crucial as a study found employees did not understand **1/3 of the safety and health information** with SDSs, while **40%** of persons reading an SDS had difficulty understanding them overall.

# General Elements of HazCom/GHS Training

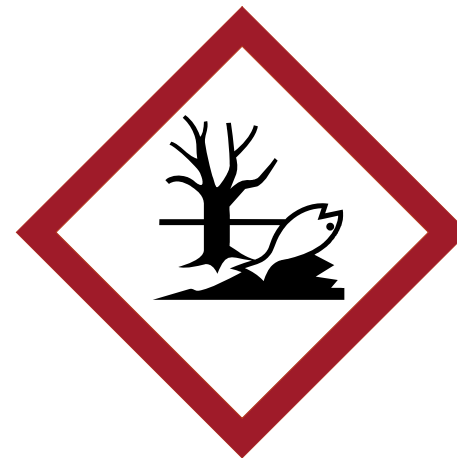
- A. Understanding the new Hazard Communication Standard
- B. Understanding the Safety Data Sheet
- C. Understanding Labels
  - Pictograms
  - Signal Words
  - Hazard Statements
  - Precautionary Statements
- D. Understanding Relationship of SDS and Label
- E. Understanding Health Information



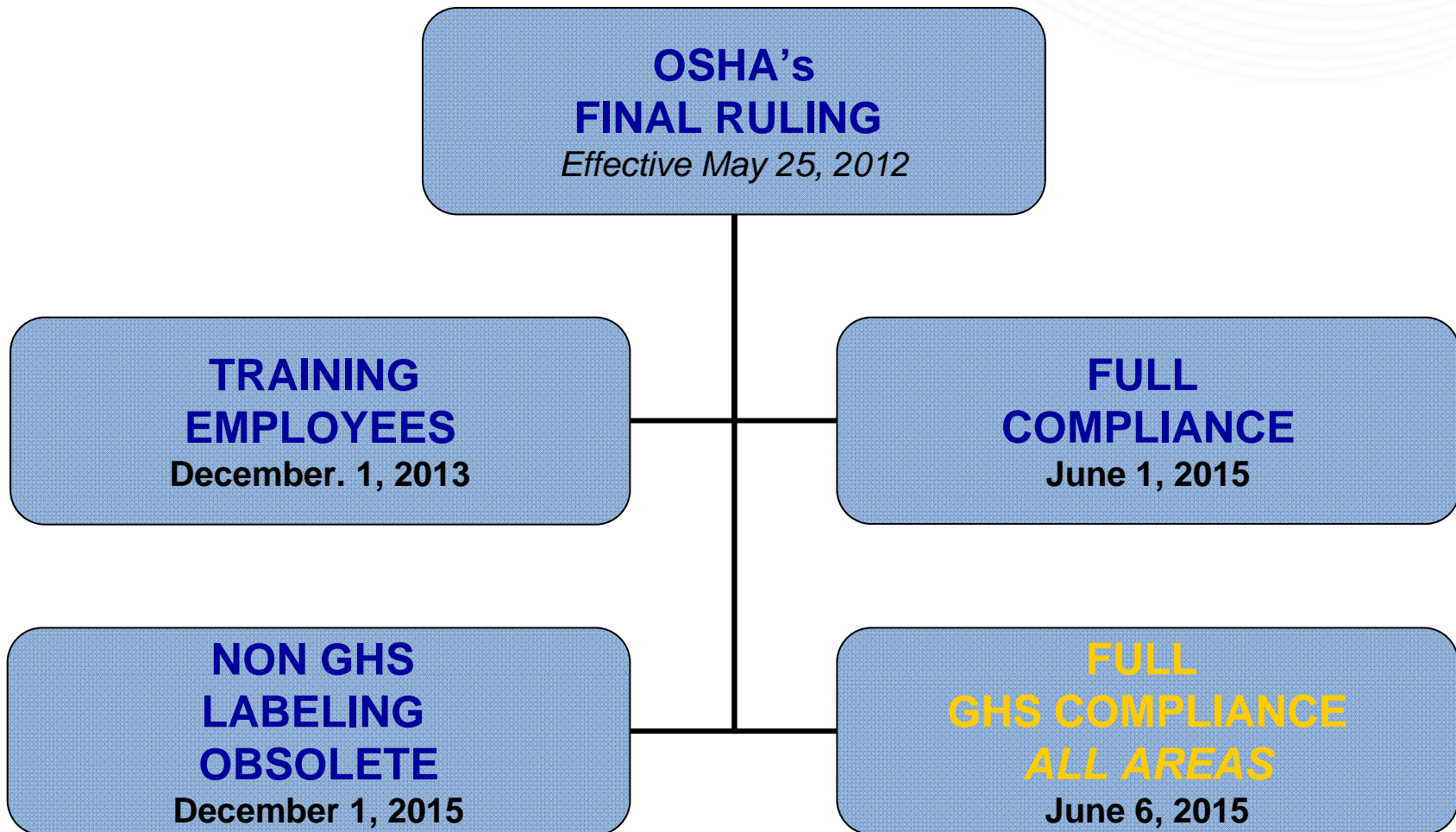
[OSHA Draft Model for HazCom Training](#)

# Chemical Information of HazCom/GHS Training

- 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\*\*



# Time Table of Implementation





# GETTING READY FOR GHS

- Get informed on regulation guidelines in the published regulation
- Begin implementing GHS by the specified timeframe
- 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

# SOLUTIONS SUPPORTING GHS

## Do-It-Yourself Labels for Production & In-Plant Use

Part Number	Description
76800	Brady GlobalMark®2 Multicolor Industrial Label Maker
76801	Brady GlobalMark®2 Color & Cut Industrial Label Maker
20700	Brady MarkWare Software (v3.9.1 or higher)
76763	Black & Red Paneled Ribbon for Globalmark – 8” Panel length
113109	4.0” White Vinyl for Globalmark – B-595, 100 ft. roll
113110	3.0” White Vinyl for Globalmark – B-595, 100 ft. roll
113111	2.25” White Vinyl for Globalmark – B-595, 100 ft. roll



# SOLUTIONS SUPPORTING GHS

- Stock Products
  - Pre-Printed Red Diamond Pictograms
    - Apply to mono-color Hazcom labels
    - Apply to tanks, vessels & Pipemarkers
  - SDS Binders & Centers
    - Multiple sizes & languages

