Hazard Communications

OSHA 10-Hour General Industry Outreach Training

Introduction

Lesson objectives:

1. Identify the employer's responsibilities under the HCS, including training requirements.
2. Identify components of a Hazard Communication program.
3. Describe requirements of the different types of Hazard Communication labels.
4. Locate pertinent information about chemicals on labels, including other forms of hazard communication, to ensure "right to understanding" provisions of GHS requirements.

Introduction

Case study

Source: OSHA

Introduction

HCS/GHS

- Save lives
  - Approximately 43 per year (deaths)
  - Approximately 585 per year injuries/illnesses
- Save $
  - $475.2M in increased productivity
  - $32.2M in cost savings

Introduction

Seven major elements in the GHS-aligned Hazard Communication Standard

Source: OSHA

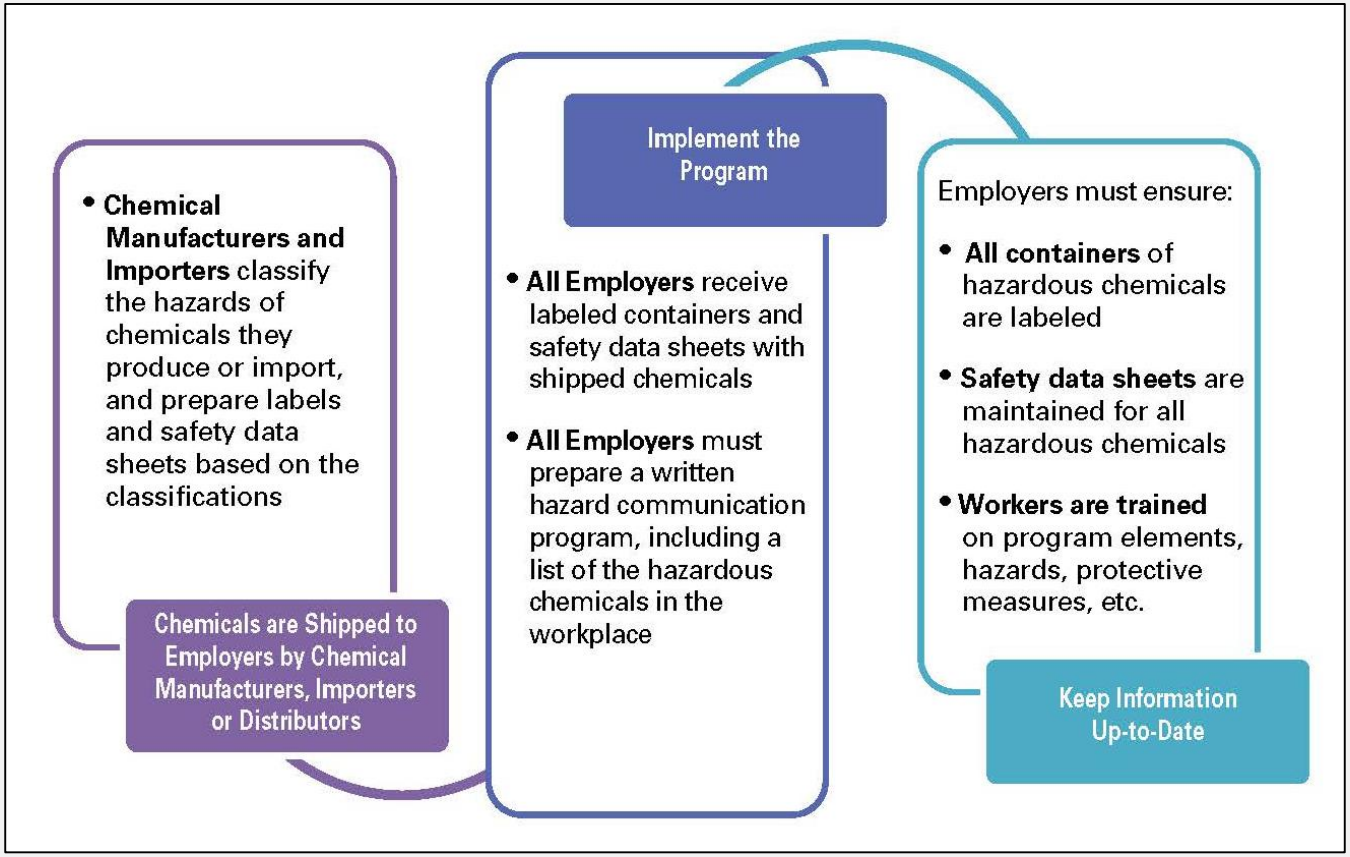
Employer Responsibilities

Employer responsibilities under the HCS:

- Ensure labels are on incoming labels and not defaced
- Maintain SDSs from shipments
- Obtain SDSs if not received
- Ensure SDSs are readily accessible
- Ensure chemicals in workplace are properly labeled, tagged, or marked
- Provide information and training to employees
- Provide information/access for employees in multi-employer workplaces
- Develop, implement, and maintain a written hazard communication program

Employer Responsibilities

How hazard communication works:



Source: OSHA

Hazard Communication Program

Requirements for a written program:

- Develop, implement, and maintain a written hazard communication program
- Main intent is to ensure compliance with standard in a systematic way that coordinates all elements

Hazard Communication Program

Components of written program:

- Lists of hazardous chemicals present at worksite
- Availability of SDSs to employees and downstream employers
- Labeling of chemical containers
- Training programs regarding hazards of chemicals and protective measures

Hazard Communication Program

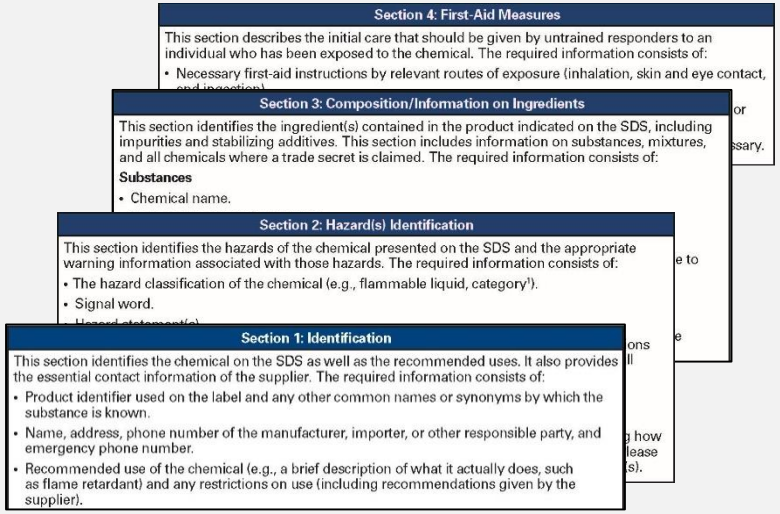
List of hazardous chemicals:

- Use product identifier
  - Product name, common name or chemical name
  - Same as name used on SDS and label
- Inventory of chemicals – employer must have available an SDS for each
- Covers all chemicals in all forms, whether contained or not
- Include chemicals in containers, pipes, and those generated by work operations

Hazard Communication Program

Safety data sheet (SDS):

- Available and accessible to workers
- Required for all hazardous chemical used
- Do not use hazardous chemicals if there is no SDS available
- 16-section format



Source: OSHA

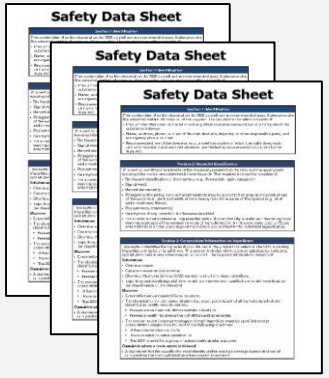
Hazard Communication Program

SDS documentation:

- Designate person(s) responsible for obtaining and maintaining SDSs
- Describe how SDSs are maintained and how employees can access them
- Procedures if SDS is not received with first shipment
- Must have SDS for each chemical; train workers on SDS format and use

Source: OSHA

Hazard Communication Program



Source: OSHA

SDS 16-section format:

- 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 control/personal protection

Hazard Communication Program

- Section 9: Physical and chemical properties
- Section 10: Stability and reactivity
- Section 11: Toxicological information
- ***Section 12: Ecological information***
- ***Section 13: Disposal considerations***
- ***Section 14: Transport information***
- ***Section 15: Regulatory information***
- Section 16: Other information

Not regulated by OSHA

Hazard Communication Program

Example of New Format SDS

GHS System and Labels Down in Section 2

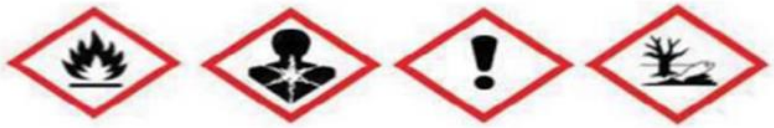
SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name	:	Product XYZ		
Synonyms	:			
SDS Number	:	888100008809	**Version**	: 1.1
Product Use Description	:	Fuel		
Company	:			
			Chemtrec (Emergency Contact)	: (800) 424-9300

SECTION 2. HAZARDS IDENTIFICATION

Classifications :
Flammable Liquid – Category 1 or 2 depending on formulation.
Aspiration Hazard – Category 1
Carcinogenicity – Category 2
Specific Target Organ Toxicity (Repeated Exposure) – Category 2
Specific Target Organ Toxicity (Single Exposure) – Category 3
Skin Irritation – Category 2
Eye Irritation – Category 2B
Chronic Aquatic Toxicity – Category 2

Pictograms :



Signal Word : **Danger**

Source: OSHA

Hazard Communication Program

Labeling:

- All containers of hazardous materials must be labeled
- Immediate warning
- Snapshot of hazards and protective information

Hazard Communication Program

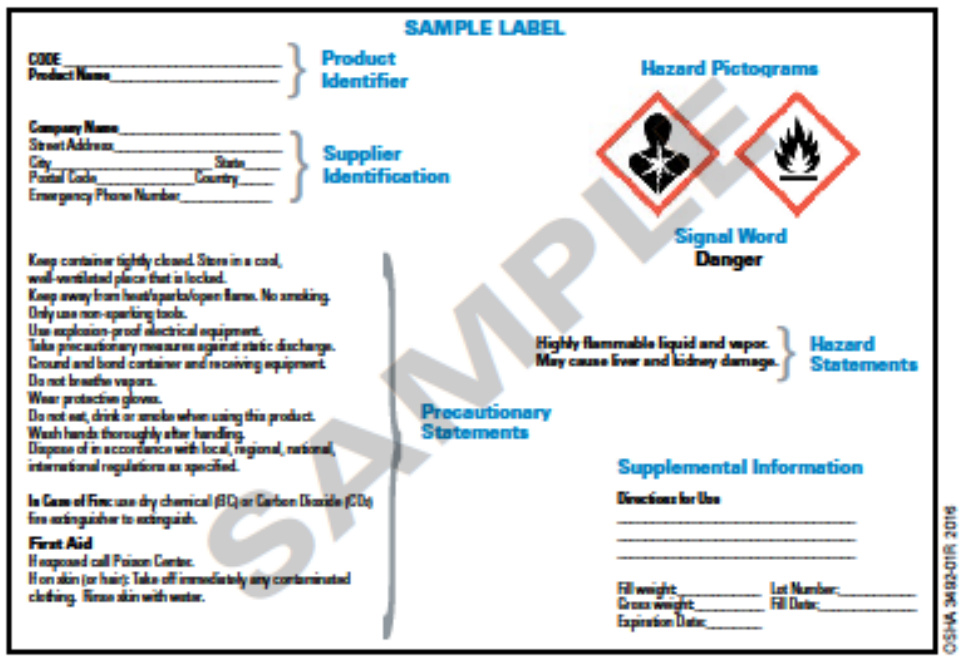
Documentation for labeling:

- Designate person(s) responsible for labeling compliance
- Describe alternatives to labeling of stationary process containers
- Ensure all workplace containers are labeled appropriately
- Labels included in training (shipping and workplace containers)
- Procedures for reviewing/updating workplace label information

Hazard Communication Program

Required elements for **shipping labels:**

- Name, address, telephone number
- Product identifier
- Signal word
- Hazard statement(s)
- Precautionary statement(s)
- Pictogram



This sample illustrates the required elements for shipping labels. Source: OSHA

Hazard Communication Program

Requirements for **workplace labels:**

- Employers can create own labeling system that works for their workplace/employees
- Can choose same label required for shipped containers or alternative labels as long as they provide general information about hazards
- Train employees to understand

Source: OSHA

Hazard Communication Program

Training requirements:

- Train employees on hazardous chemicals in their work area
  - Before initial assignment
  - When new hazards are introduced
  - Nonroutine tasks
- Include in training
  - Methods/observations to determine presence/release of chemical in work area
  - Hazards of chemicals
  - Appropriate protective measures
  - Where and how to obtain additional information

Source: OSHA

Hazard Communication Labels

Types of labels:

- HCS shipping labels
- HCS workplace labels
- NFPA 704 labels
- HMIS labels
- DOT shipping labels, placarding, and markings

Source of graphics: OSHA

Hazard Communication Labels

Required elements for HCS **shipping labels**:

- Product identifier
- Signal word
- Hazard statement(s)
- Precautionary statement(s)
- Pictogram
- Name, address, telephone number

SAMPLE LABEL

PRODUCT IDENTIFIER

CODE
Product Name

SUPPLIER IDENTIFICATION

Company Name
Street Address
City State
Postal Code Country
Emergency Phone Number

PRECAUTIONARY STATEMENTS

Keep container tightly closed. Store in cool, well ventilated place that is locked.
Keep away from heat/sparks/open flame. No smoking.
Only use non-sparking tools.
Use explosion-proof electrical equipment.
Take precautionary measure against static discharge.
Ground and bond container and receiving equipment.
Do not breathe vapors.
Wear Protective gloves.
Do not eat, drink or smoke when using this product.
Wash hands thoroughly after handling.
Dispose of in accordance with local, regional, national, international regulations as specified.

In Case of Fire: use dry chemical (BC) or Carbon dioxide (CO_2) fire extinguisher to extinguish.

First Aid
If exposed call Poison Center.
If on skin (on hair): Take off immediately any contaminated clothing. Rinse skin with water.

HAZARD PICTOGRAMS

SIGNAL WORD
Danger

HAZARD STATEMENT

Highly flammable liquid and vapor.
May cause liver and kidney damage.

SUPPLEMENTAL INFORMATION

Directions for use

Fill weight Lot Number
Gross weight Fill Date
Expiration Date

Source: OSHA

Hazard Communication Labels

Figure 5: Example of Required HCS Label Elements

How the hazardous chemical is identified

Contact information of Responsible Party

Product Identifier

Pictogram *(Symbol in Red Frame)*

Signal Word *(Danger)*

Hazard Statement(s) *(Extremely flammable gas)*

Statement(s) *(Keep away from heat and open flames. No smoking. Do not extinguish, unless leak can be stopped safely. Eliminate all ignition sources if safe to do so. Store in well-ventilated place.)*

Name, Address, and Telephone Number of Manufacturer, Importer, or Other Responsible Party

Source: OSHA

Hazard Communication Labels

Figure 5: Example of Required HCS Label Elements

Indicates the relative level of severity of hazard;

"Danger" is used for more severe hazards and "Warning" for less severe hazards

Pictograms convey specific information about the hazards of a chemical in symbols and other graphic elements

Source: OSHA

Hazard Communication Labels

Figure 3: HazCom 2012 Pictograms

Health Hazard • Carcinogen • Mutagenicity • Reproductive Toxicity • Respiratory Sensitizer • Target Organ Toxicity • Aspiration Toxicity	**Flame** • Flammables • Pyrophorics • Self-Heating • Emits Flammable Gas • Self-Reactives • Organic Peroxides	**Exclamation Mark** • Irritant (skin and eye) • Skin Sensitizer • Acute Toxicity (harmful) • Narcotic Effects • Respiratory Tract Irritant • Hazardous to Ozone Layer (Non-Mandatory)
Gas Cylinder • Gases Under Pressure	**Corrosion** • Skin Corrosion/ Burns • Eye Damage • Corrosive to Metals	**Exploding Bomb** • Explosives • Self-Reactives • Organic Peroxides
Flame Over Circle • Oxidizers	**Environment** (Non-Mandatory) • Aquatic Toxicity	**Skull and Crossbones** • Acute Toxicity (fatal or toxic)

Source: OSHA

Hazard Communication Labels

Exploding Bomb

Figure 3: HazCom 2012 Pictograms

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Source: OSHA

Hazard Communication Labels

Skull and Crossbones

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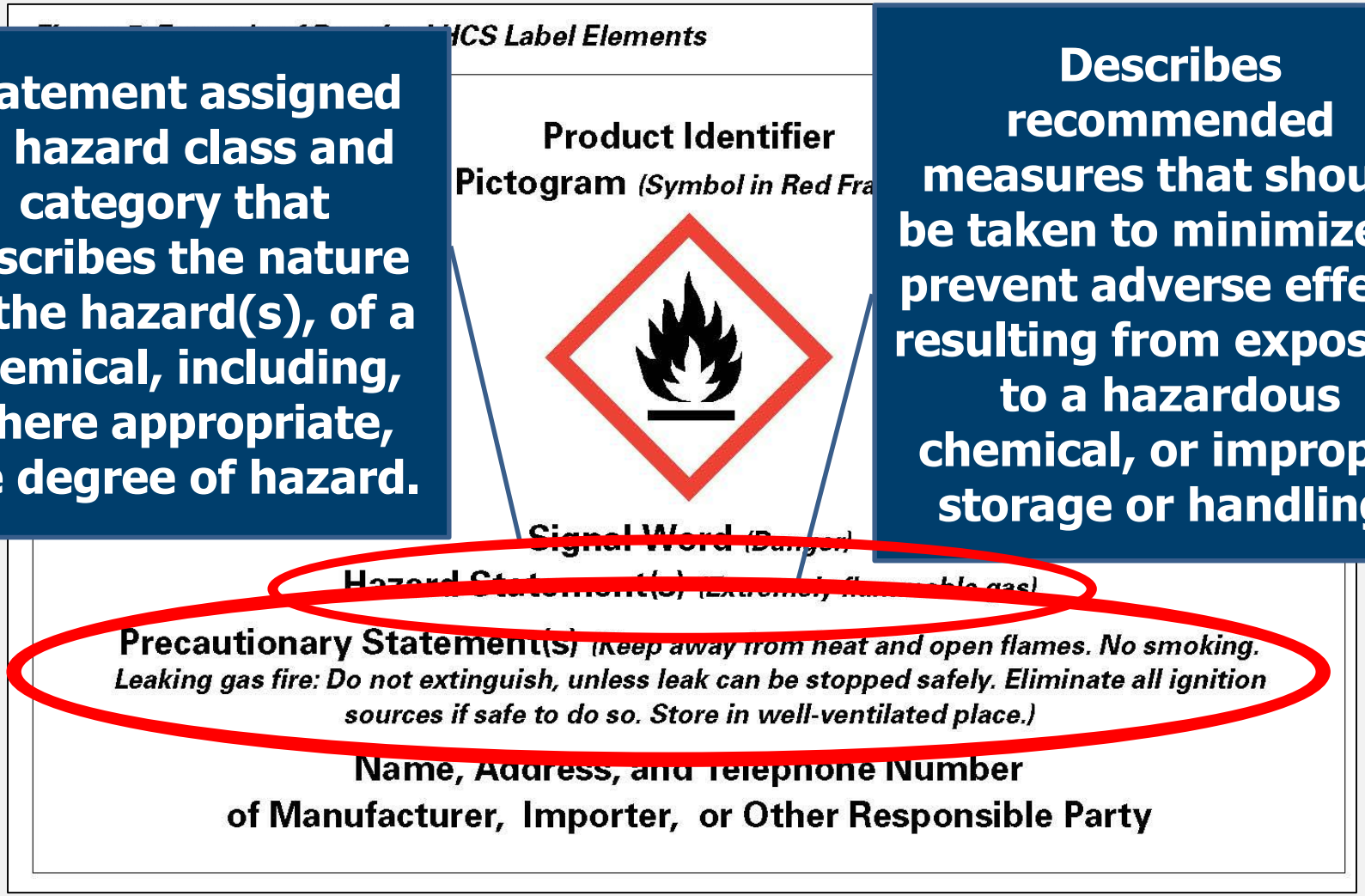
Not regulated by OSHA

Source: OSHA

Hazard Communication Labels

Statement assigned to hazard class and category that describes the nature of the hazard(s), of a chemical, including, where appropriate, the degree of hazard.

Describes recommended measures that should be taken to minimize or prevent adverse effects resulting from exposure to a hazardous chemical, or improper storage or handling.

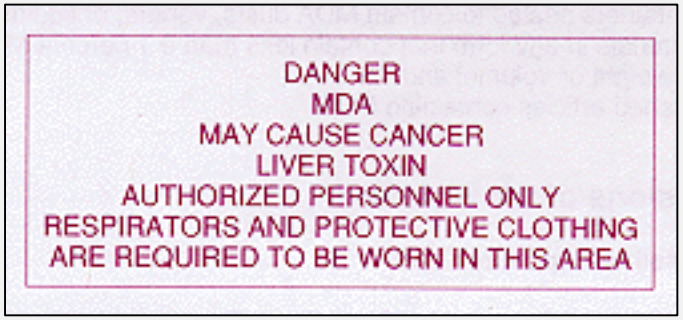


Source: OSHA

Hazard Communication Program

Requirements for **workplace labels**:

- Same information as label from manufacturer or product identifier and words, pictures, symbols or combination thereof
- May include signs, placards, process sheets, batch tickets, operation procedures, other written materials



Source of graphics: OSHA

Hazard Communication Labels

- Alternative workplace labels:
  - Permitted for workplace labels
  - Must provide at least general information regarding hazards of chemicals
  - Hazard warnings or pictograms that conflict with HCS label elements cannot be used
  - Examples: NFPA 704 and HMIS

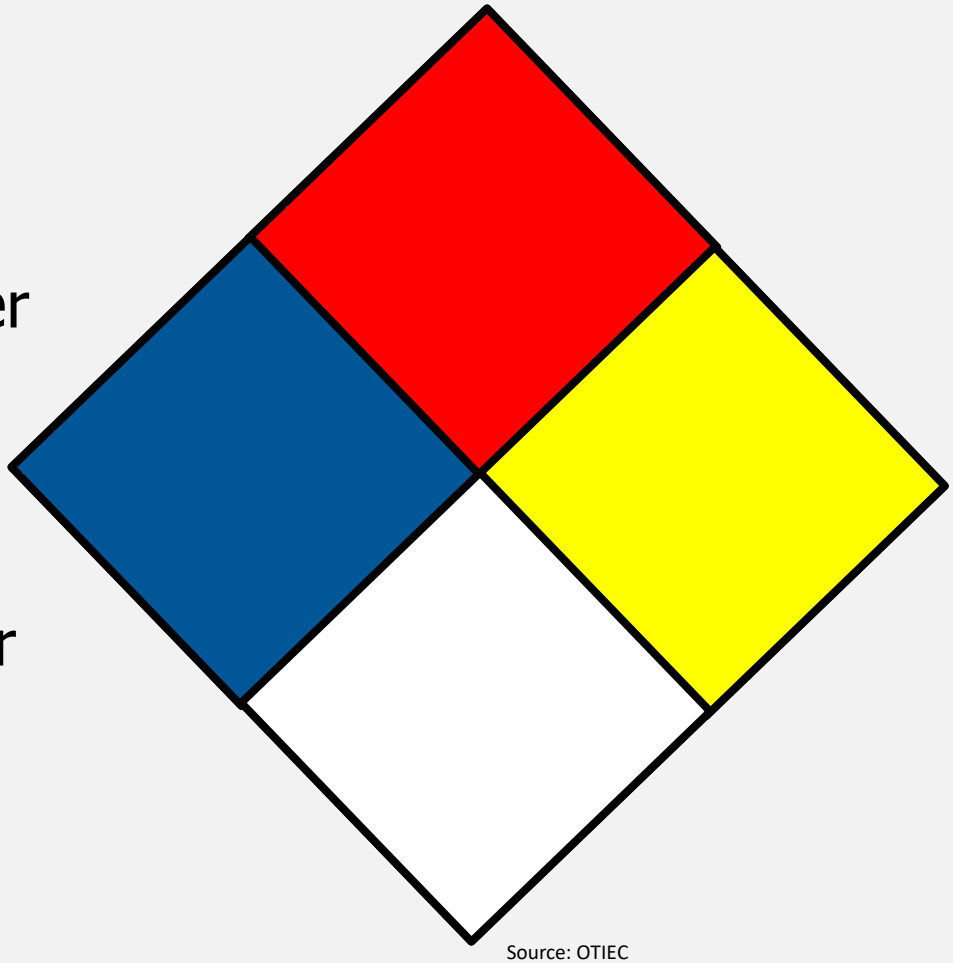
Source: OSHA

Source: TEEX

Hazard Communication Labels

Other labels:

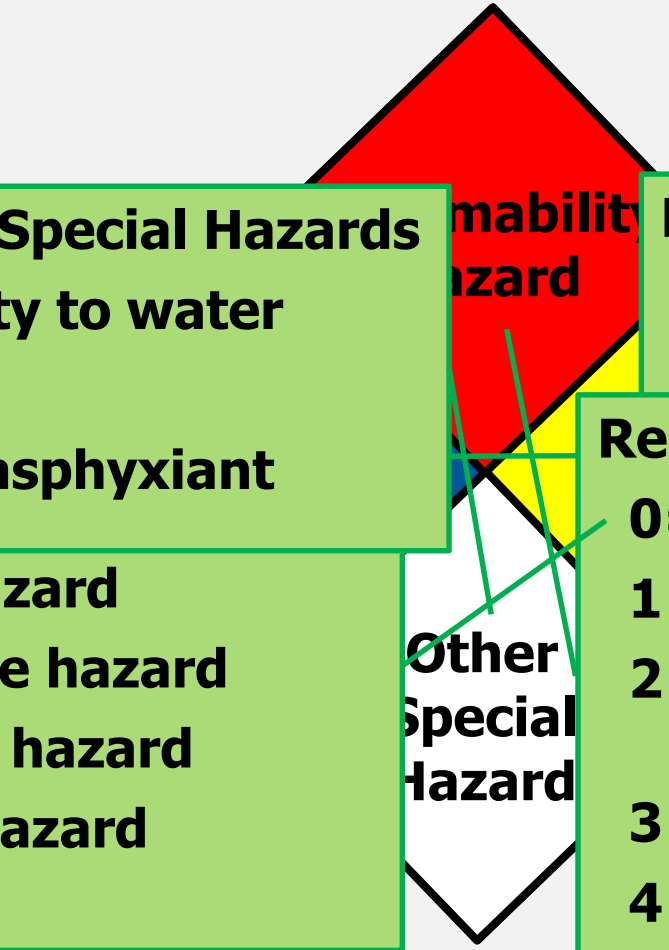
- NFPA 704
  - Overall diamond shape made up of four smaller diamonds
  - Each smaller diamond is a different color
  - Numbers within smaller diamonds represent severity of hazard



Source: OTIEC

Hazard Communication Labels

– NFPA 704 – hazards and severity ratings



White = Other Special Hazards

W= reactivity to water

OX = oxidizer

SA = simple asphyxiant

Blue = Health Hazards

0= normal material that poses no health

Red = Flammability Hazards

0= will not burn

1 = flashpoint above 200°F

2 = flashpoint between 100 – 200°F

3 = flashpoint below 100°F

4 = flashpoint less than 73°F

1 = slight hazard

2 = moderate hazard

3 = extreme hazard

4 = deadly hazard

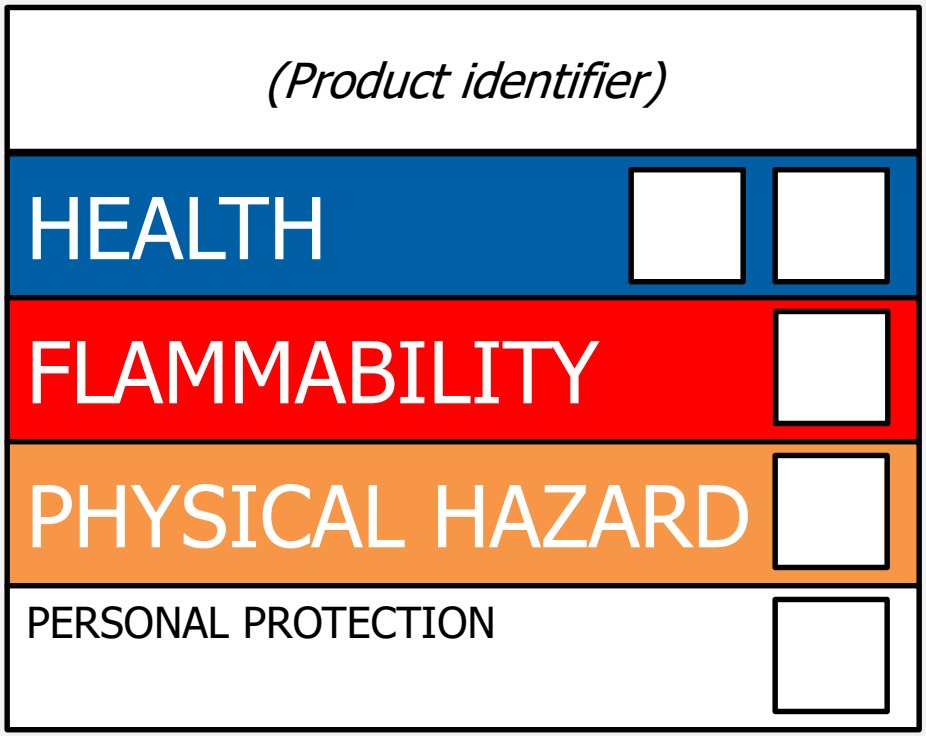
Source: OTIEC

Hazard Communication Labels

Source: OSHA

Hazard Communication Labels

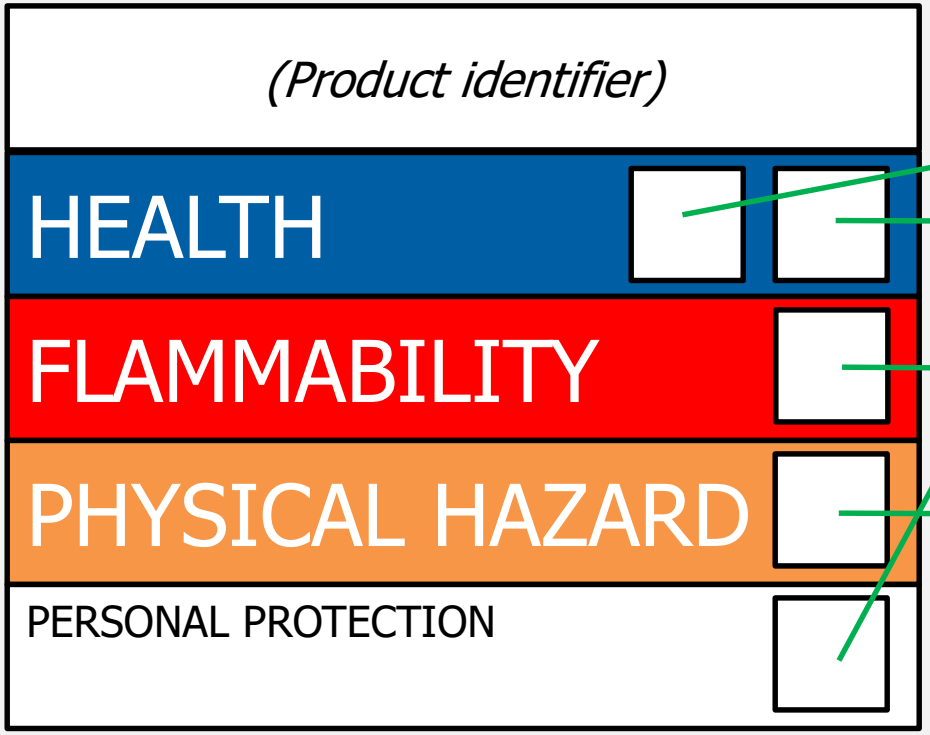
- HMIS label
  - Intended for "In-plant" (workplace) labeling compliance
  - Color-coded bars
  - Numerical scale, 0-4, with 0 as lowest hazard and 4 as highest hazard
    - 0 = minimal hazard
    - 1 = slight hazard
    - 2 = moderate hazard
    - 3 = serious hazard
    - 4 = severe hazard



Source: OTIEC

Hazard Communication Labels

- HMIS hazard indicators

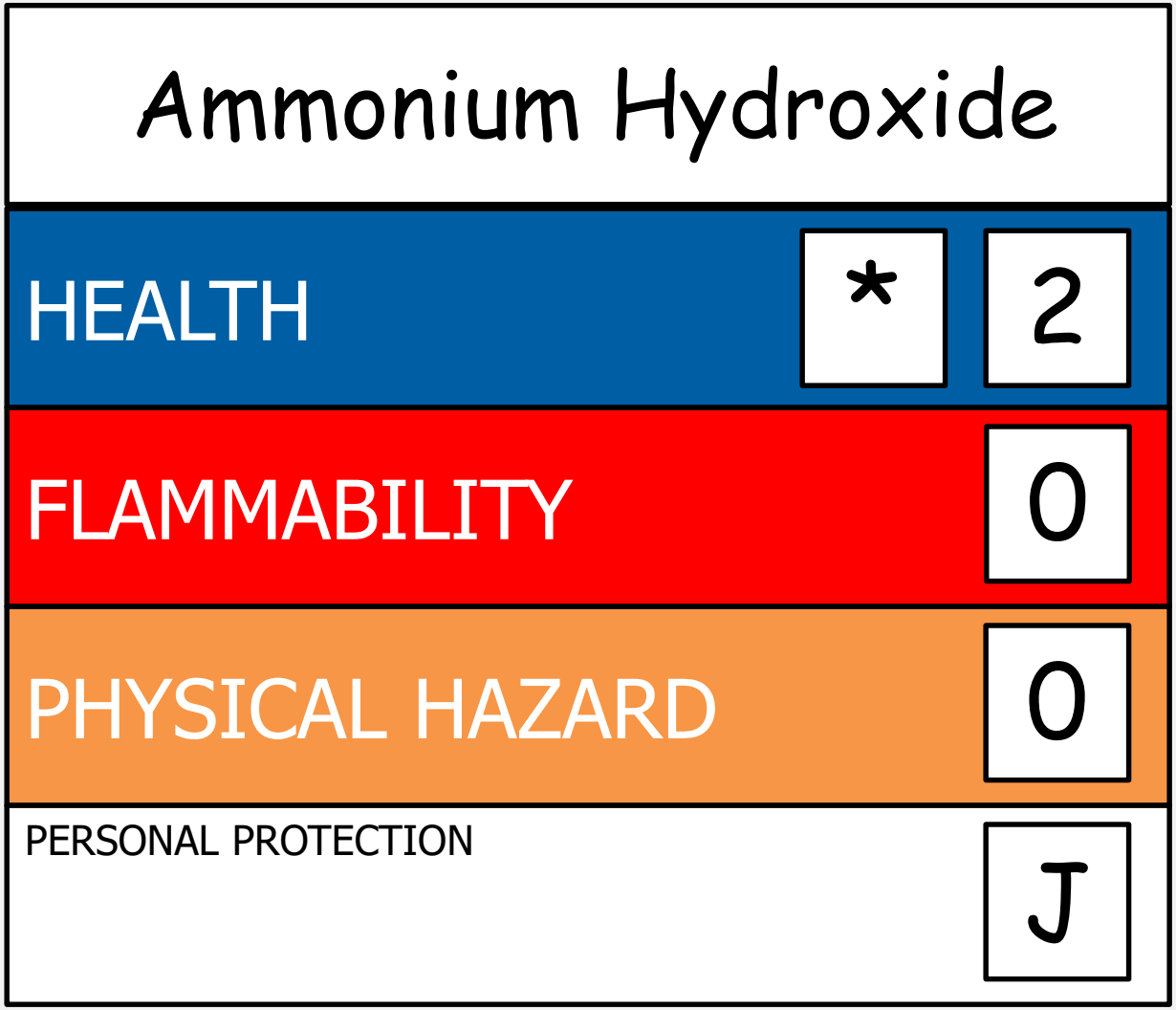


Source: OTIEC

PPE Index:

A = safety glasses
B = safety glasses + gloves
C = safety glasses + gloves + apron
D = face shield + gloves + apron
E = safety glasses + gloves + dust respirator
F = safety glasses + gloves + apron + dust respirator
G = safety glasses + gloves + vapor respirator
H = splash goggles + gloves + apron + vapor respirator
I = safety glasses + gloves + dust and vapor respirator
J = splash goggles + gloves + apron + dust and vapor respirator
K = air-line hood or mask + gloves + full suit + boots
X = ask supervisor or safety specialist

Hazard Communication Labels



Source: OTIEC

Hazard Communication Labels

- DOT shipping containers – marking, labeling, and placarding
  - Uses graphic elements on square-on-point placards or labels to identify shipments of hazardous materials
  - Square-on-points have backgrounds of various colors
  - Where shipping container is also container used in workplace, workers must be made aware of DOT pictograms
  - DOT Classification – groups hazardous materials based on dangers posed in transportation; 9 classes

Hazard Communication Labels

- Labels
- Placards
- Markings

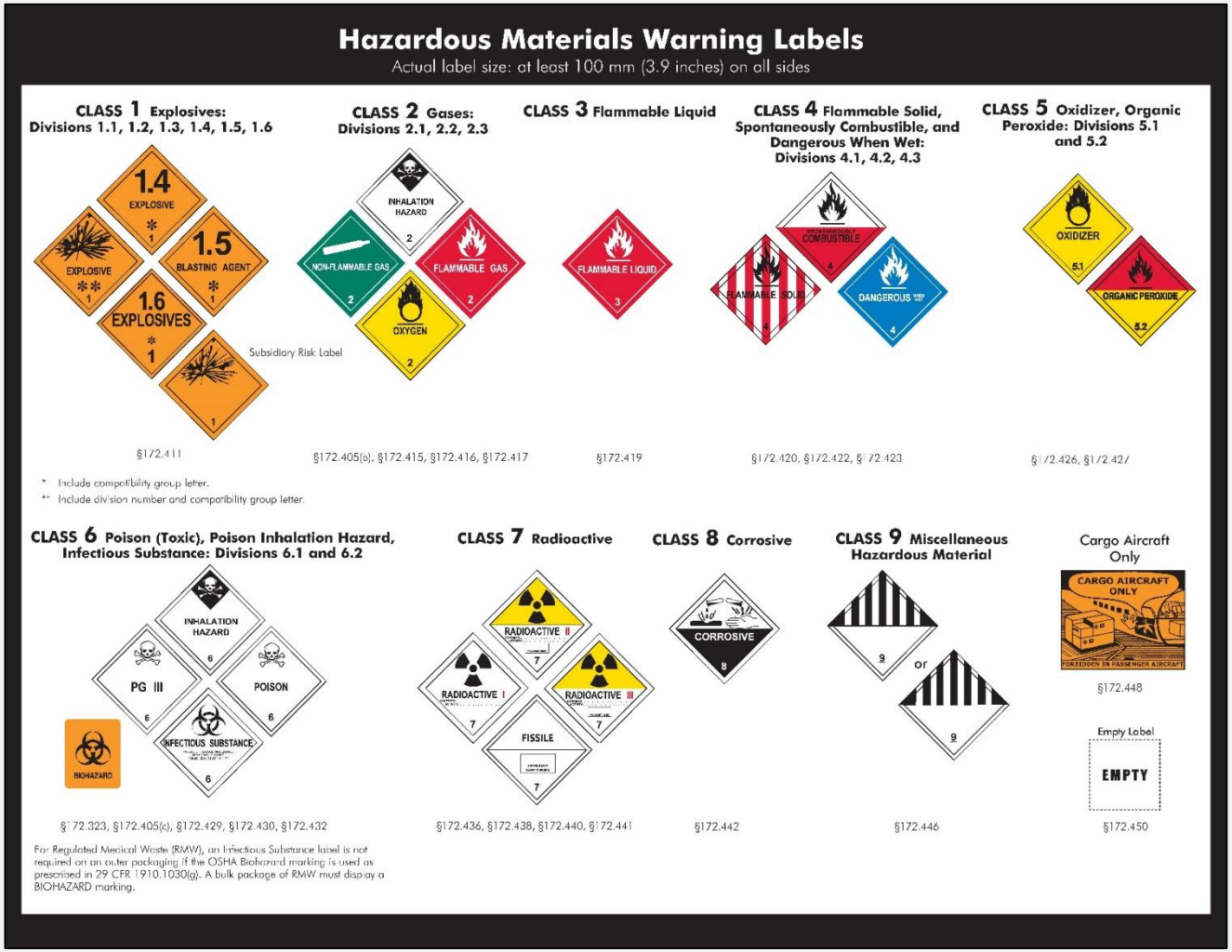
Source: OSHA

Source: TEEX

Source: DOT - PHMSA

Hazard Communication Labels

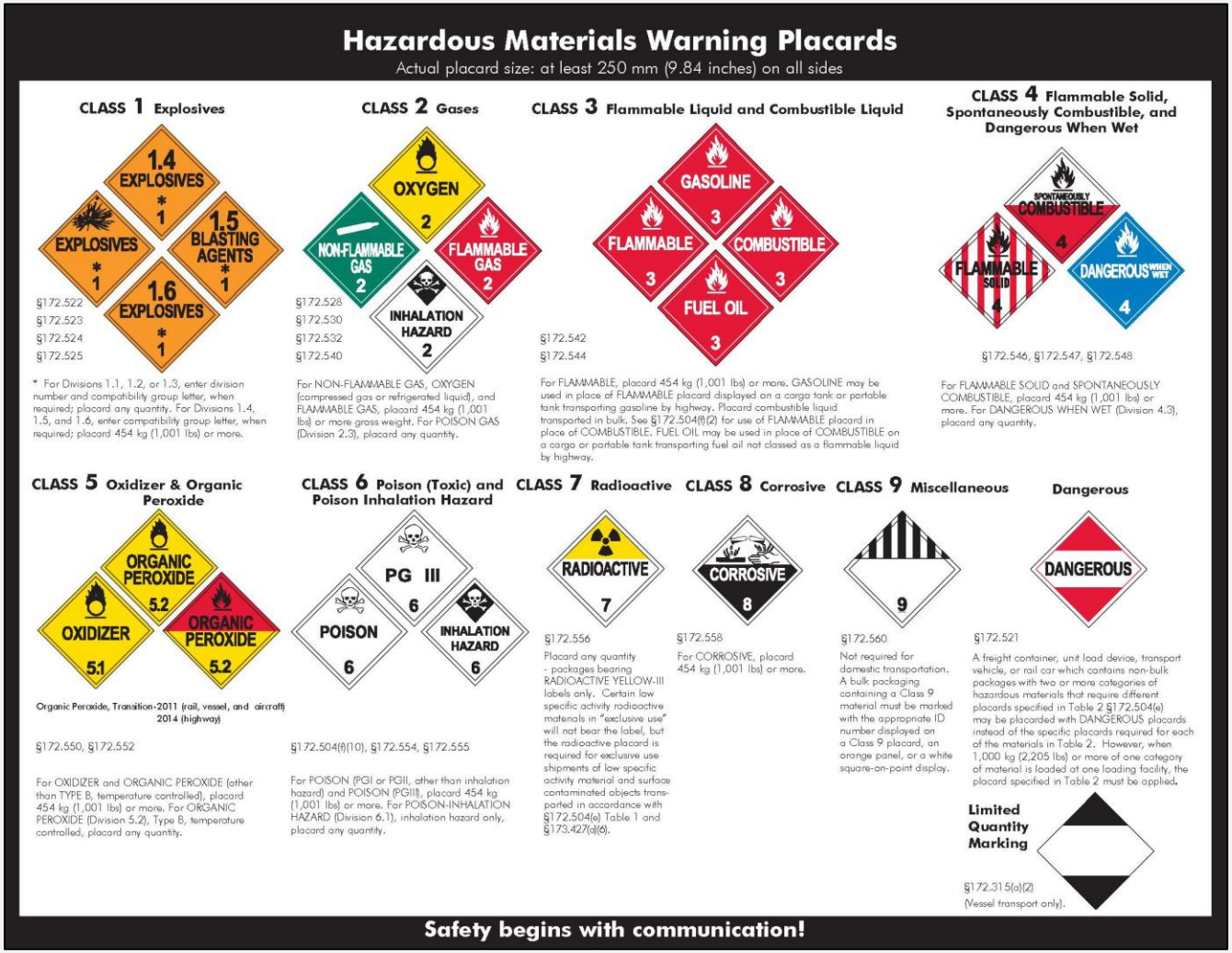
DOT Warning Labels



Source: DOT - PHMSA

Hazard Communication Labels

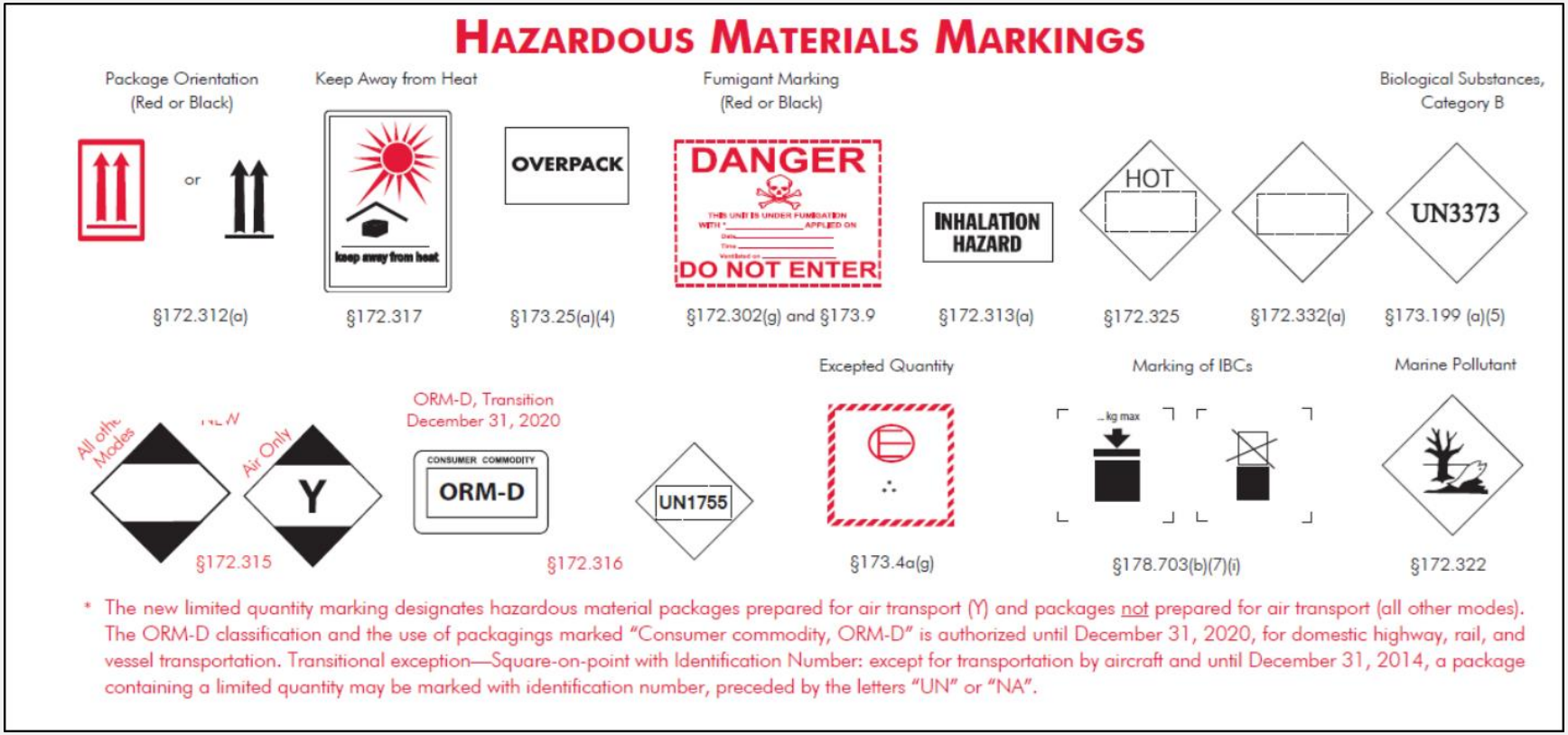
DOT Warning Placards



Source: DOT - PHMSA

Hazard Communication Labels

DOT Markings



Source: DOT - PHMSA

Locating Information

Example 1: HS85 Label

HS85
Batch number: 85L6543

Warning
Harmful if swallowed

Wash hands and face thoroughly after handling. Do not eat, drink or smoke when using this product. Dispose of contents/container in accordance with local, state and federal regulations.

First aid:
If swallowed: Call a doctor if you feel unwell. Rinse mouth.

GHS Example Company, 123 Global Circle, Anyville, NY 130XX Telephone (888) 888-8888

Source: OSHA

Locating Information

Identifier: NOMIXUP 7042012

DANGER!

Hazard Statements:	Extremely Flammable Gas May Cause Cancer May Cause Respiratory Irritation In Contact with Water Releases Flammable Gas
Precautionary Statements:	Keep away from heat/sparks/open flames/hot surfaces.-No Smoking Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Avoid breathing vapors and mists. Wear protective gloves and eye protection. If inhaled: Remove person to fresh air and keep comfortable for breathing. Call poison center/doctor if you feel unwell. Leaking Gas Fire: Do not extinguish unless leak can be stopped safely. Eliminate all ignition sources if safe to do so. Store in tightly closed container in a well-ventilated place, locked up. Use outdoors or use in a well-ventilated place. Dispose of contents in accordance with local/regional/national regulations.

XYZ Chemical Company 123 Main St. Anywhere , NY, USA 1-800-000-1111

Source: OSHA

Locating Information

Source: OSHA

Locating Information

In which section of an SDS would you find the following information:

1. Hazard identification such as hazard classification, signal word, and precautionary statements

   Section 2: Hazard(s) Identification

2. Initial care instructions for untrained responders attending to an individual who has been exposed to the chemical

   Section 4: First-Aid Measures

3. Recommendations for PPE

   Section 8: Exposure Controls/Personal Protection

Summary

In this module we discussed:

- Employer's responsibilities under HCS
- Components of a Hazard Communication Program
- Requirements of different types of Hazard Communication labels
- How to locate pertinent information

Knowledge Check

1. A hazard communication program requires which of the following components?
   a. Written program
   b. SDS/Labeling
   c. Training
   d. All of the Above

Answer: **d. All of the above**

Knowledge Check

2. How many sections are required on an SDS?
   a. 11 sections
   b. 16 sections
   c. 4 sections
   d. As many as necessary to convey understanding

Answer: **b. 16 sections**

Knowledge Check

3. Which of the following statements is true of the pictograms on HCS labels?
   a. Pictograms on HCS labels are identical to those used on DOT transport labels and may have various background colors.
   b. Consist of four bars that are color-coded as blue, red, yellow, and white to match hazard.
   c. HCS pictograms are required and standardized red square-on-points with black hazard symbols and white backgrounds.
   d. All of the Above

Answer: **c. HCS pictograms are required and standardized red square-on-points with black hazard symbols and white backgrounds.**

Knowledge Check

4. Your right to understand is _____.
   a. not simply shown or told
   b. not simply given an SDS
   c. required at initial assignment/when thing change
   d. all of the above

Answer: **d. all of the above**