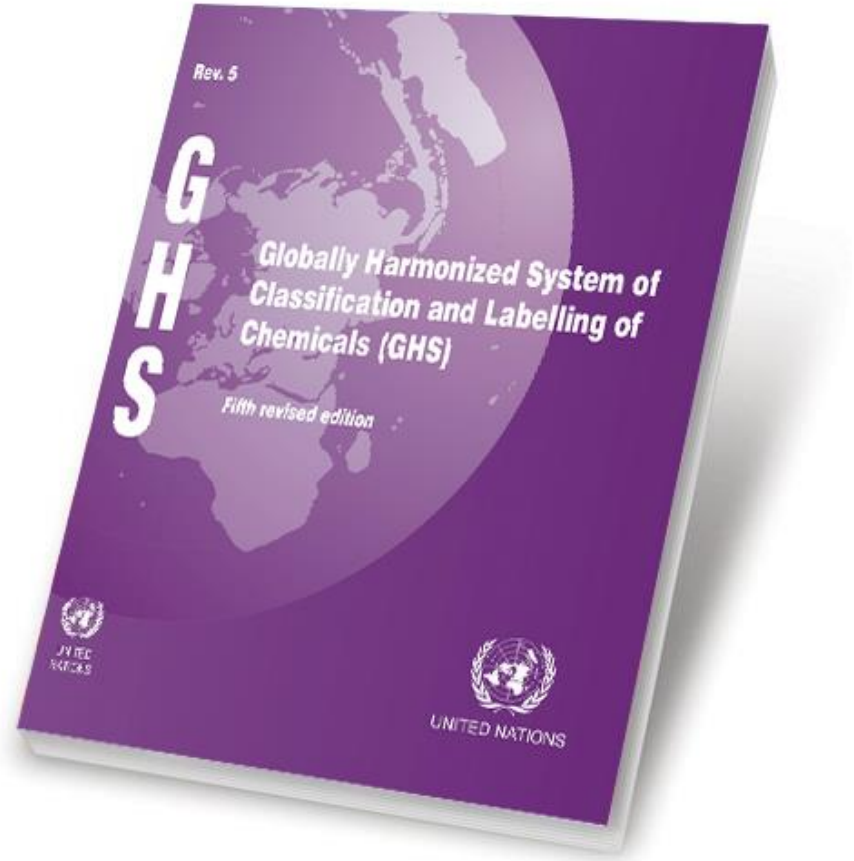


HAZARD COMMUNICATION PROGRAM 2015 UPDATE

GHS AWARENESS TRAINING

CSULB COE

HAZARD COMMUNICATION 2015 UPDATE

GHS

Globally Harmonized System of Classification and Labeling of Chemicals

GHS – WHAT IT IS…OR IS NOT?

- This is not a new Occupational Safety and Health Administration (OSHA) standard
  - It's a revision to the existing OSHA Hazard Communications Standard/Right-To-Know Law
  - The United Nations system of labeling & classification of chemicals
- Implemented to improve worker understanding of labels and safety data sheets
- The next three years will be considered a transition phase (December 1, 2013 – June 30, 2016)
  - Manufacturers, employers and end users work to meet the new requirements of the revised standard

GHS – MAJOR CHANGES…

- Container Labeling

- Classification and hazard identification of chemicals

- Safety Data Sheet (SDS), formerly known as Material Safety Data Sheet (MSDS), format and content

GHS – WHAT WILL NOT CHANGE…

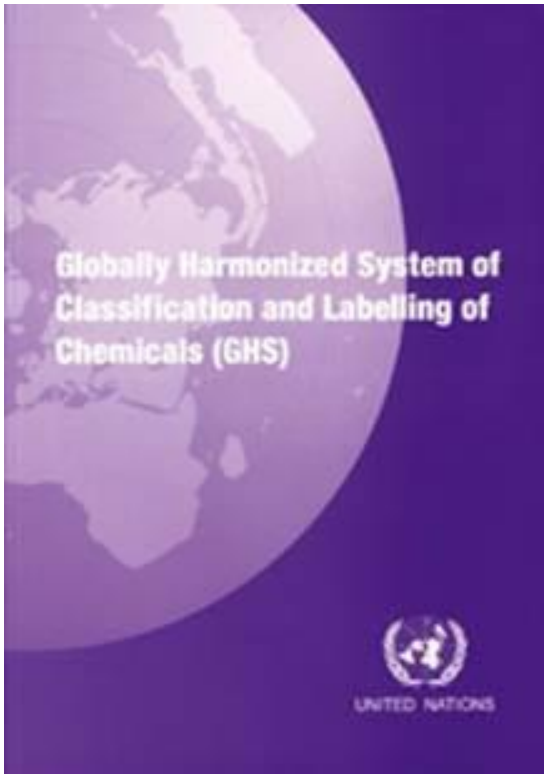
- We still have to keep chemical inventories
- We still have to maintain safety data sheets
- We still have to train new people on the potential hazards of what they will be working with
- We still have to maintain our records for 30 years, per OSHA

GHS COMPLIANCE DEADLINES

1. December 1, 2013
   - Employee training to become familiar with new label elements and safety data sheet format

2. June 1, 2015
   - Manufacturers and distributors are required to have updated container labels on their products

3. June 30, 2016
   - Update workplace labeling and hazard communication program to replace old MSDS with new SDS


Globally Harmonized System of Classification and Labelling of Chemicals (GHS)
UNITED NATIONS

GHS LABELS

LABEL REQUIREMENTS

Labels are required to have:

- Pictograms
- Signal Words
- Hazard Statement
- Precautionary Statements
- Product Identifier
- Supplier Identification
- Supplemental Information (as required)

GHS PICTOGRAMS

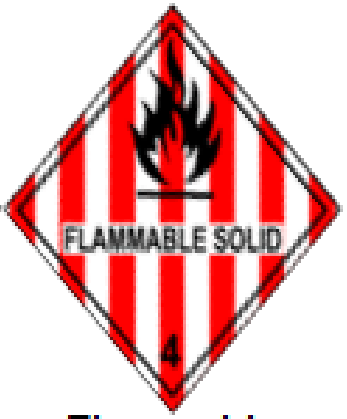
- Nine pictograms will be utilized in identifying hazards of **ALL** chemicals
- Each chemical will have **AT LEAST** one pictogram, often multiple pictograms – to visually convey the hazards associated with it
- We need to be familiar with the meaning(s) of each pictogram
  - Labels and safety data sheets will not always include that information, understanding these is critical
  - Environmental Health and Safety (EHS) will provide pictogram reference cards to post in work areas for future reference

OUTDATED PRODUCT LABELS

Explosives

Gases

Flammable Liquids



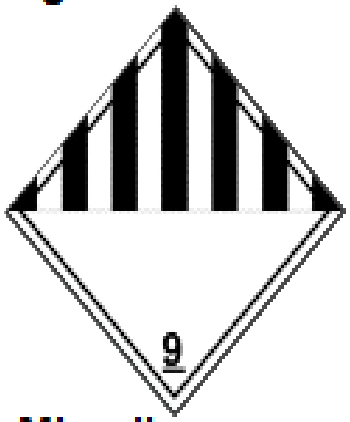
Flammable Solids

Oxidizers and Organic Peroxides

Poison and Infectious Substances

Radioactive

Corrosive



Miscellaneous

GHS – NEW PICTOGRAMS

CORROSION

- Skin Corrosion/Burns
- Eye Damage
- Corrosive to Metals

EXCLAMATION MARK

- Irritant (skin and eye)
- Skin Sensitizer
- Acute Toxicity
- Narcotic Effects
- Respiratory Tract Irritant
- Hazardous to Ozone Layer (Non-Mandatory)

EXPLODING BOMB

- Explosives
- Self-Reactives
- Organic Peroxides

SKULLS & CROSSBONES

- Acute Toxicity (fatal or toxic)

FLAME

- Flammables
- Pyrophorics
- Self-Heating
- Emits Flammable Gas
- Self-Reactives
- Organic Peroxides

GAS CYLINDER

- Gases Under Pressure

ENVIRONMENT

- Aquatic Toxicity

HEALTH HAZARDS

- Carcinogen
- Mutagenicity
- Reproductive Toxicity
- Respiratory Sensitizer
- Target Organ Toxicity
- Aspiration Toxicity

FLAME OVER CIRCLE

- Oxidizers

LABELS - SIGNAL WORDS

Signal words describe the severity of a hazard:

- **Danger**
  - This is reserved for the more severe hazards
- **Warning**
  - This is used on less severe hazards
- If there is no significant hazard, a signal word won't be used

LABELS - HAZARD STATEMENTS

Phrases that describe the nature of a hazard:

- Examples:
  - Highly flammable liquid and vapor
  - May cause liver and kidney damage
  - Fatal if swallowed

LABELS – PRECAUTIONARY STATEMENTS

Recommend measures that should be taken to minimize or prevent adverse effects resulting from exposure to the hazardous chemical:

- There are four types of precautionary statements:
    1. Prevention (to minimize exposure)
    2. Response (in case of accidental spillage or exposure)
    3. Storage
    4. Disposal

LABELS – SUPPLIER INFORMATION

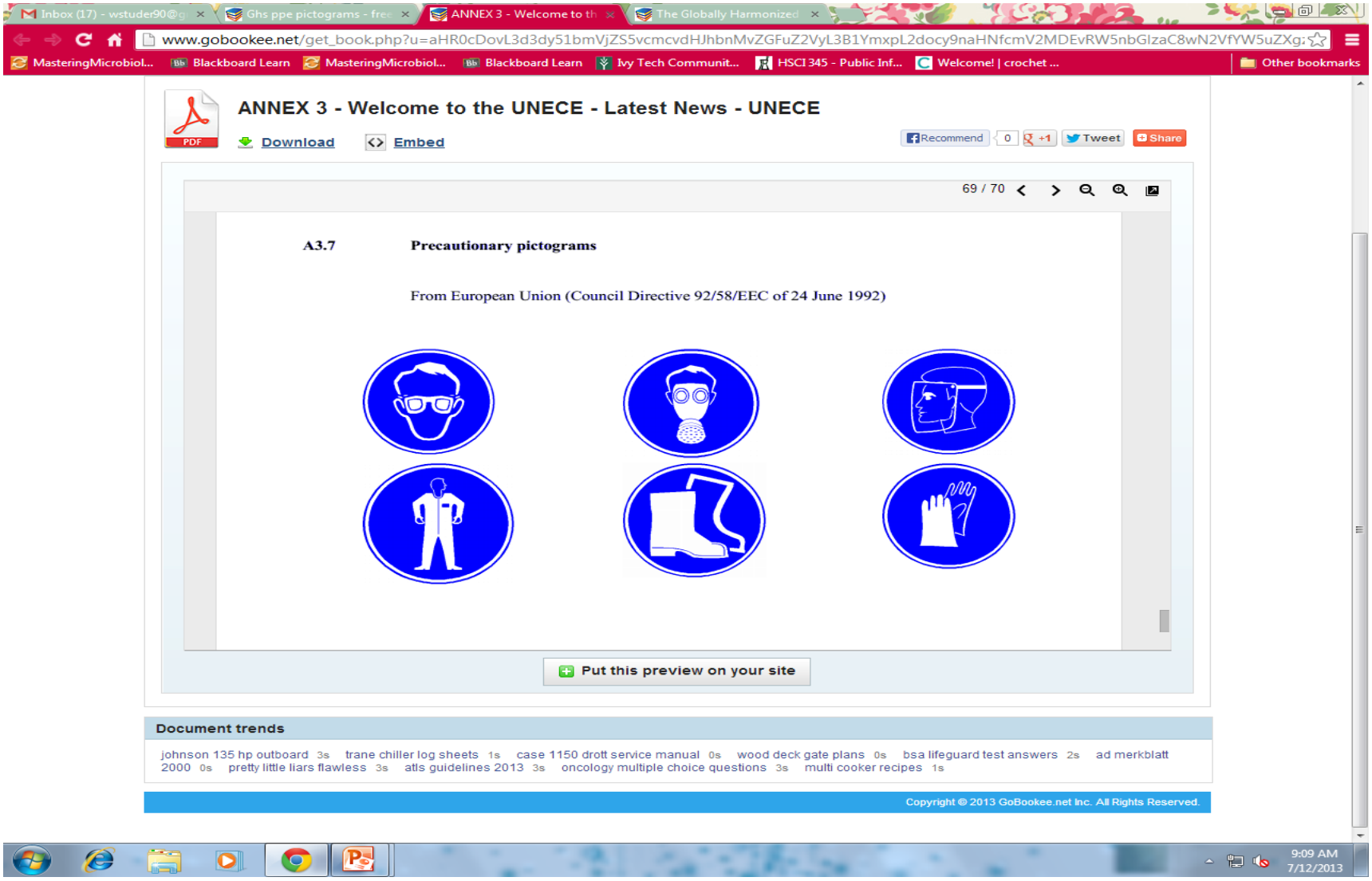
- Name
- Address
- Telephone Number

LABELS - SUPPLEMENTAL INFORMATION

- The supplier may provide additional instructions, expiration date, fill date or information that it deems helpful.

- An example is the personal protective equipment (PPE) pictogram indicating what to wear.

LABELS - EXAMPLES OF PPE PICTOGRAMS



LABEL EXAMPLE

SAMPLE LABEL

CODE _____
Product Name_____

Product Identifier

Company Name_____
Street Address_____
City_____State_____
Postal Code_____Country_____
Emergency Phone Number_____

Supplier Identification

Hazard Pictograms

Signal Word

Danger

Keep container tightly closed. Store in a 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 measures 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 (or hair): Take off immediately any contaminated clothing. Rinse skin with water.

Precautionary Statements

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

Hazard Statements

Supplemental Information

Directions for Use

_____
_____
_____

Fill weight:_____ Lot Number:_____
Gross weight:_____ Fill Date:_____
Expiration Date:_____

LABEL EXAMPLE

2

1 Sulfuric Acid

3 Danger! May be harmful if swallowed. Causes sever skin burns and eye 4 damage. Fatal if inhaled. Harmful to aquatic life.

2

Do not breathe dust/fume/gas/mist/vapors/spray. Wear protective gloves/protective clothing/eye protection/face protection. Wear respiratory protection.

5

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician.

In case of fire Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

See Material Safety Data Sheet for further details regarding safe use of this product.

6 Sigma-Aldrich 3050 Spruce Street SAINT LOUIS MO 63103 USA Telephone : +18003255832

1 Product Identifier

2 Pictograms

3 Signal word, “Danger!”

4 Hazard Statements

5 Precautionary Statements

6 Supplier Information

SECONDARY LABELS

- Whenever a chemical is taken from its original container, **the container it is transferred into must have a secondary label affixed to identify its contents**

- CSULB utilizes the National Fire Protection Association (NFPA) 704 Diamond for secondary labeling

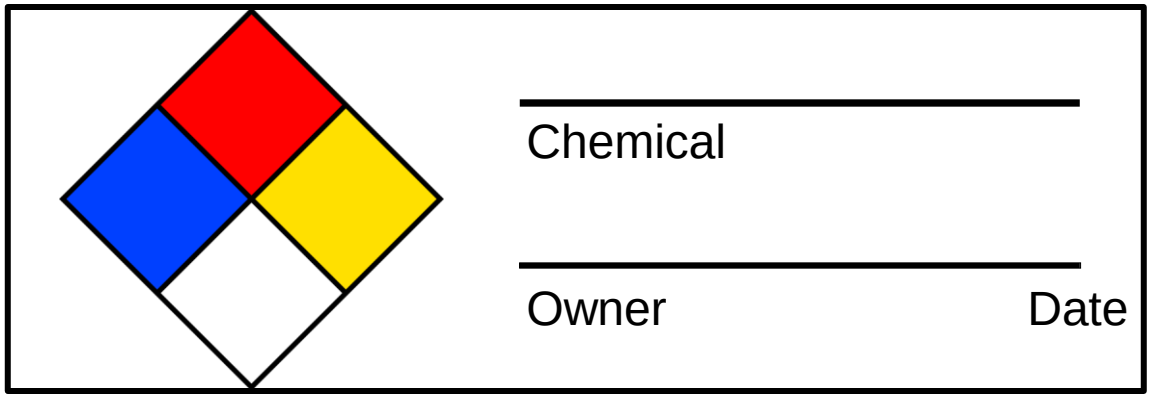
SECONDARY LABELS

- **Health**
- **Flammability**
- **Reactivity**

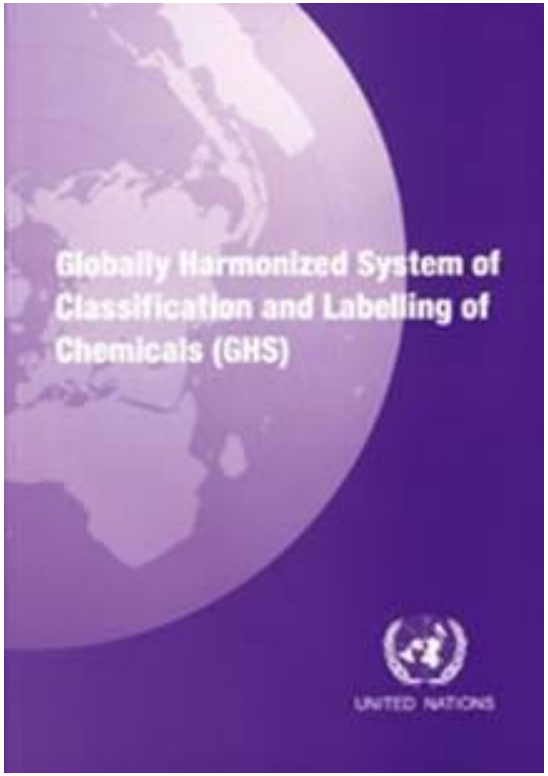
Numbering

- 4 = Most Hazardous
- 0 = Least Hazardous

Additional Information



SAFETY DATA SHEET (SDS)



SAFETY DATA SHEETS

- These are chemical fact sheets that contain all the information an employee would need to know about a hazardous chemical
- Keep current MSDS available until new SDS are received. Archive old MSDS as new SDS are collected.
- Each SDS is broken down into 16 universal sections
- Sections 1 - 11 will be of most concern

SAFETY DATA SHEETS (SDS)

UNIVERSAL REQUIRED SECTIONS

1. Identification
2. Hazard Identifications
3. Composition / Ingredient Information
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

1: IDENTIFICATION

Identifies the chemical as well as the recommended uses:

- Product identifier used on the label
- Other common names or synonyms
- Name, address, phone number and emergency phone number of the manufacturer
- Any restrictions on use

2: HAZARD IDENTIFICATION

Identifies the hazards of the chemical and the appropriate warning information associated with those hazards:

- Hazard classification of the chemical
- Signal word
- Hazard statement(s)
- Pictograms
- Precautionary statement(s)
- Description of any hazards not otherwise classified
- For a mixture, a statement describing how much of the mixture consists of ingredient(s) with unknown acute toxicity

TYPES OF HAZARDS

PHYSICAL HAZARDS

- Explosives
- Flammable Gases
- Flammable Aerosols
- Gases Under Pressure
- Flammable Liquids
- Flammable Solids
- Self-Reactives
- Pyrophoric Liquids
- Pyrophoric Solids
- Self-Heating Substances
- Water Reactive
- Oxidizing Liquids
- Oxidizing Solids
- Oxidizing Gases
- Organic Peroxides
- Corrosive to Metals

TYPES OF HAZARDS 2

HEALTH HAZARDS

- Acute Toxicity
- Skin Corrosion/Irritation
- Serious Eye Damage/Eye Irritation
- Respiratory or Skin Sensitization
- Germ Cell Mutagenicity
- Carcinogenicity
- Reproductive Toxicology
- Target Organ Systemic Toxicity - Single Exposure
- Target Organ Systemic Toxicity - Repeated Exposure
- Aspiration Toxicity

TYPES OF HAZARDS 3

ENVIRONMENTAL HAZARDS

Hazardous to the Aquatic Environment

- Acute Aquatic Toxicity
- Chronic Aquatic Toxicity
  - Bioaccumulation potential
  - Rapid degradability

TYPES OF HAZARDS 4

HAZARD RATING SCALE

- Hazard classification will be assessed by manufacturers and suppliers with a hazard rating scale

- Scale of 1-5 (1 being the most hazardous and 5 being the least hazardous)
  - NFPA has not adopted the GHS scale
  - NFPA scale is opposite 4 - 0

3: COMPOSITION/INGREDIENT INFORMATION

Identifies the chemical ingredient(s), information on substances, mixtures and trade secret claims:

- Chemical name
- Common name and synonyms
- Chemical Abstracts Service (CAS) number impurities and stabilizing additives classifications which contribute to the chemical classification
- The chemical name and concentration of all ingredients which are classified as health hazards

4: FIRST AID MEASURES

Provides information on what to do in case of an accidental exposure:

- Necessary first-aid instructions by relevant routes of exposure
- inhalation, skin and eye contact, and ingestion
- Description of the most important symptoms or effects and any symptoms that are acute or delayed
- Recommendations for immediate medical care and special treatment needed

5: FIRE-FIGHTING MEASURES

Describes how to fight a fire caused by that chemical:

- Suitable (and unsuitable) extinguishing techniques
- Specific chemical hazards arising from fire
- Special protective equipment and precautions for firefighters

6: ACCIDENTAL RELEASE MEASURES

Deals with the appropriate response to spills, leaks, or releases, including containment and cleanup practices to prevent or minimize exposure to people, properties or the environment:

- Personal precautions, protective equipment and emergency procedures
- Environmental precautions
- Methods and materials for containment and cleaning up

7: HANDLING AND STORAGE

Provides guidance on how to handle a chemical when using it and when storing it:

- Precautions for safe handling
- Conditions for safe storage, including any incompatibilities

8: EXPOSURE CONTROL/PERSONAL PROTECTION

Provides information on how to minimize worker exposure:

- Control parameters
  - CAL-OSHA Permissible Exposure Limits (PELs)
  - Biological Exposure Indices (BEIs)
  - Threshold Limit Values (TLVs)
- Appropriate engineering controls
- Individual protection measures
  - Personal Protective Equipment (PPE)

SECTIONS 9 - 11

- **Section 9: Physical and Chemical Properties lists the chemical's characteristics**
- **Section 10: Stability and Reactivity lists chemical stability and possibility of hazardous reactions**
- **Section 11: Toxicological Information includes routes of exposure; related symptoms, acute and chronic effects; numerical measures of toxicity**

SECTIONS 12-16

- **Section 12: Ecological Information**
- **Section 13: Disposal Considerations**
- **Section 14: Transport Information**
- **Section 15: Regulatory Information**
- **Section 16: Other Information**

LINKS TO ADDITIONAL RESOURCES

United States Department of Labor Occupational Safety & Health Administration (OSHA)

- A Guide to *The Globally Harmonized System of Classification and Labeling of Chemicals* (GHS)
- Hazard Communication
- HCS/HazCom 2012 Final Rule & Appendices
- Hazard Communication Standard QuickCards
- Side-by-Side Comparison of OSHA's Existing Hazard Communication Standard (HCS 1994) vs. the Revised Hazard Communication Standard (HCS 2012)

United Nations Economic Commission for Europe (UNECE)