SDS Practical Implementation

November 21, 2024

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What is an SDS?

- Provide Information on the Chemicals or Products Stored onsite
- Identify Hazards
- Mitigation Measures
- PPE Requirements

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What is an SDS?

Safety Data Sheets – General

- 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

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SDS – What do you get?

- 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

SDS – What do you get?

- 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

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Section 1: Hazard Identification

– Identifies the chemical

– recommended uses

– contact information of the supplier

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION					
Product name	:	Product XYZ			
Synonyms	:				
SDS Number	:	888100008809	**Version**	:	1.1
Product Use Description	:	Fuel			
Company	:				
			Chemtrec	:	(800) 424-9300

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Section 2: Identification

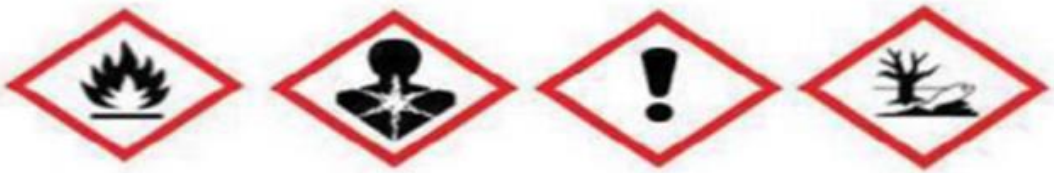
– Identifies the hazards of the chemicals

– Identifies appropriate warning information

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**

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Section 3: Composition/ information of Ingredients

- identifies ingredient(s) contained in product
- This includes impurities and stabilizing additives;
- Trade secretes will include information on substances, mixtures, and all chemicals for the material

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Section 4: First Aid Measures

- Initial care that should be given by untrained or trained responders to an individual who has been exposed to the chemicals listed in the SDS

Section 5: Firefighting Measures

- provides recommendations for fighting a fire caused by the chemical

Section 6: Accidental Release Measures

- provides recommendations on appropriate response to spills, leaks, or releases, including containment and cleanup to prevent or minimize exposure to people, properties, or the environment
- Onsite SPCC Plan will be used to evaluate this.

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Section 7: Handling and Storage

- provides guidance on safe handling practices and conditions for safe storage of chemicals

Section 8: Handling and Storage

- Indicates exposure limits, engineering controls, and PPE measures that can be used to minimize worker exposure

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Section 9-11 – Properties of the Chemical

– Section 9 –
- Physical and chemical properties

– Section 10 -
- Stability and reactivity information

– Section 11 –
- Toxicological information, exposure control information

- Information including the date of preparation or last revision

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Section 12-16 – Non-OSHA Regulated Information

– Section 12 –
- Ecological Information

– Section 13 -
- Disposal considerations

– Section 14 –
- Transport Information

– Section 15 –
- Regulatory Information

– Section 16
- Other Information

Section 12-16 – Non OSHA Regulated Information

– Section 12 –
- Ecological Information

– Section 13 -
- Disposal considerations

– Section 14 –
- Transport Information

– Section 15 –
- Regulatory Information

– Section 16
- Other Information

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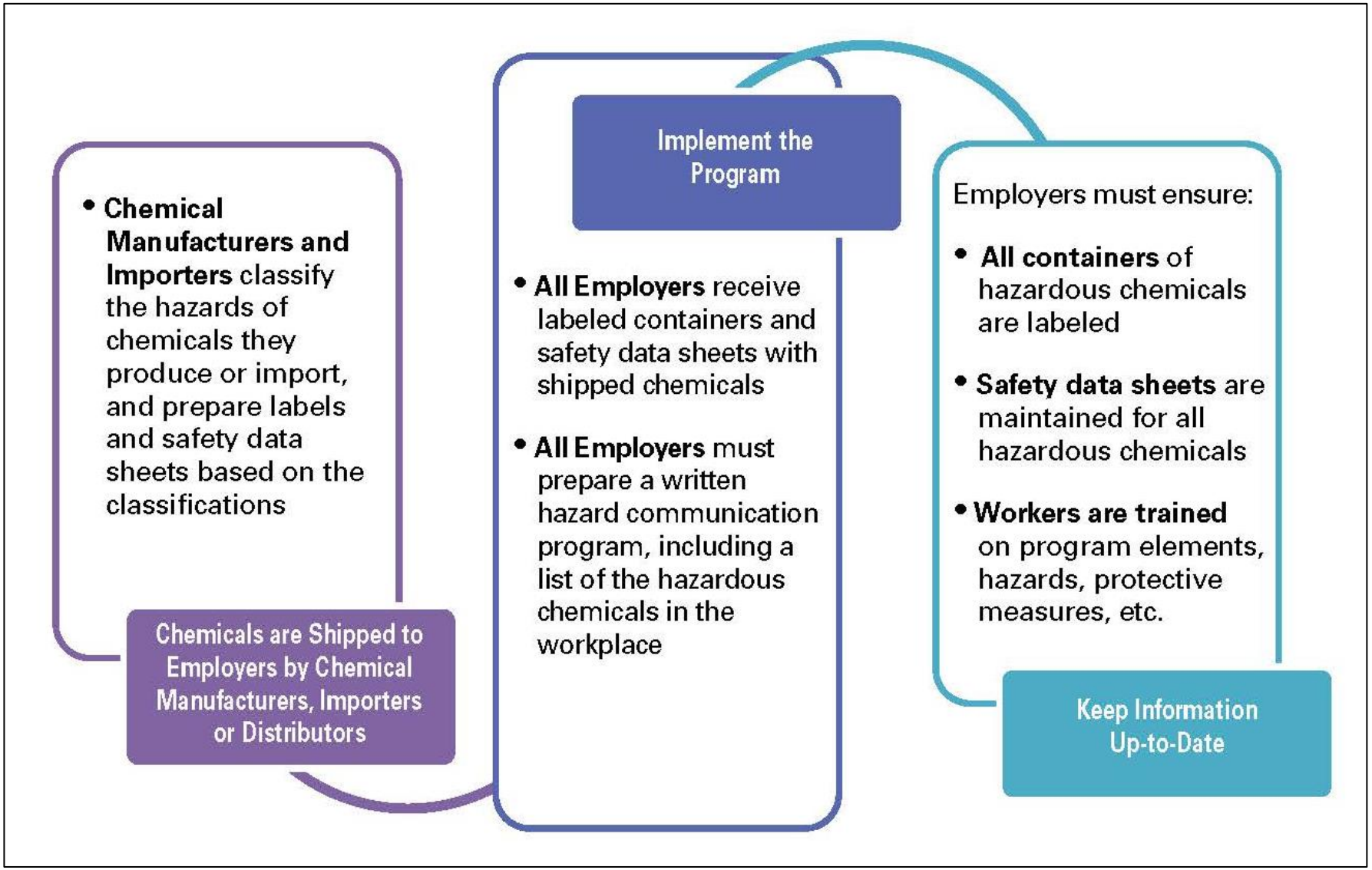
How to Use the SDS Data



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What is the GHS?

– **Seven Major Elements to Hazard Communication/GHS:**

- SDS
- Labels
- Signal words
- Hazard statements
- Precautionary statements
- Pictograms
- Training

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SDS Planning and Use

- Designate person(s) responsible for obtaining and maintaining SDSs
- Understand how SDSs are maintained
- Procedures if SDS is not received with the chemical
- Must have SDS for each chemical

Employer responsibilities under the GHS

- 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

HAZCOM Elements

- Hazard classification
- Written program
- Labeling
- SDS
- Employee training

C.4.19 FLAMMABLE LIQUIDS
(Classified in Accordance with Appendix B.6)

Hazard category	Signal word	Hazard statement
1	Danger	Extremely flammable liquid and vapor
2	Danger	Highly flammable liquid and vapor
3	Warning	Flammable liquid and vapor

Pictogram
Flame

Precautionary statements

Prevention	Response	Storage	Disposal
Keep away from heat/sparks/open flames/hot surfaces.– No smoking. Chemical manufacturer, importer, or distributor to specify applicable ignition source(s). **Keep container tightly closed.** **Ground/Bond container and receiving equipment** - *if electrostatically sensitive material is for reloading.* - *if product is volatile so as to generate hazardous atmosphere.* **Use explosion-proof electrical/ventilating/ lighting/.../equipment.** ... Chemical manufacturer, importer, or distributor to specify other equipment. **Use only non-sparking tools.** **Take precautionary measures against static discharge.** **Wear protective gloves/eye protection/face protection** Chemical manufacturer, importer, or distributor to specify type of equipment.	**If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.** **In case of fire: Use ... to extinguish.** ... Chemical manufacturer, importer, or distributor to specify appropriate media. - *if water increases risk.*	**Store in a well-ventilated place. Keep cool.**	**Dispose of contents/container to...** … in accordance with local/regional/national/ international regulations (to be specified).

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Training Requirements

Train employees on hazardous chemicals in their work area

- Before initial assignment
- When new hazards are introduced
- Nonroutine tasks

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Hazardous Chemicals – Definitions

- Any chemical that is classified as a:
  - Physical hazard
  - Health hazard
  - Simple asphyxiant
  - Combustible dust
  - Pyrophoric gas

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Types of Hazards

– “Physical hazard”

- A chemical classified as posing one of the following hazardous effects:
  - Explosive
  - Oxidizer (liquid, solid or gas)
  - Self-reactive
  - Pyrophoric (liquid or solid)
  - Self-heating
  - Organic peroxide
  - Corrosive to metal
  - Gas under pressure
  - Emits flammable gas in contact with water
  - Flammable (gases, aerosols, liquids or solids)

Types of Hazards

- **"Health hazard"**
  - A chemical that is classified as posing one of the following hazardous effects:
    - Acute toxicity (any route of exposure)
    - Skin corrosion or irritation
    - Serious eye damage or eye irritation
    - Respiratory or skin sensitization
    - Germ cell mutagenicity
    - Carcinogenicity
    - Reproductive toxicity
    - Specific target organ toxicity (single or repeated exposure)
    - Aspiration hazard

Types of Hazards

– “Pyrophoric gas”

- A chemical in a gaseous state that will ignite spontaneously in air at a temperature of 130 degrees F (54.4 degrees C) or below

Types of Hazards

“Simple asphyxiant”

A substance or mixture that displaces oxygen in the ambient atmosphere and can cause oxygen deprivation in those who are exposed, leading to unconsciousness and death.

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Hazard not otherwise classified (HNOC)”

An adverse physical or health effect identified through evaluation of scientific evidenc
during the classification process that does not meet the specified criteria for the physical and health hazard classes addressed in this section (standard).

The effect either:

Falls below the cut-off value/concentration limit of this hazard class, *or*

Is under a Globally Harmonized System (GHS) hazard category not adopted by OSHA (e.g., acute toxicity Category 5)

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HAZCOM Shipping Labels

Required elements for **shipping labels:**

– Name, address, telephone number

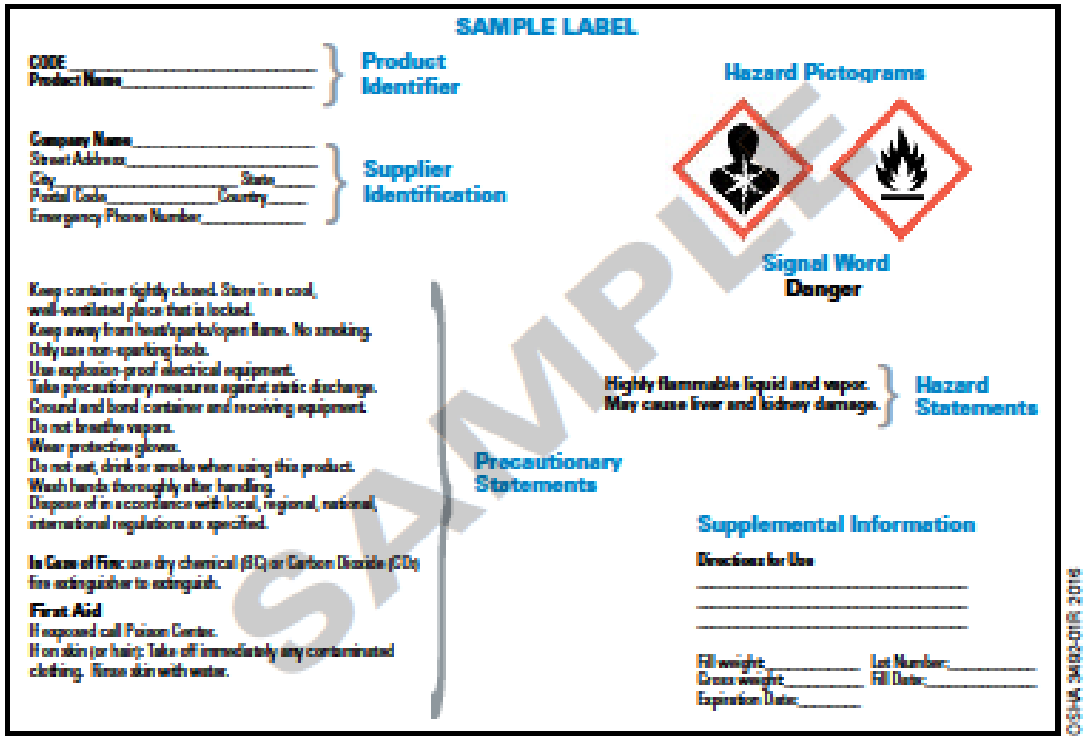
– Product identifier

– Signal word

– Hazard statement(s)

– Precautionary statement(s)

– Pictogram



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HAZCOM Shipping Labels

Types of labels:

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

Labeling

"**Label**" - An appropriate group of:

- ***written***
- ***printed***
- ***graphic***

information elements concerning a hazardous chemical that is affixed to, printed on, or attached to the immediate container of a hazardous chemical, or to the outside packaging.

Labeling

– Must be in ***English*** and ***prominently displayed:***

- Product identifier
- Signal word
- Hazard statements
- Pictogram(s)
- Precautionary statement(s)
- Name, address and telephone number of manufacturer/importer/responsible party

GHS Signal language

Danger vs. Warning

– A word used to indicate the relative level of severity of hazard and alert the reader to a potential hazard on the label.

- **“Danger”** is used for the more severe hazards.
- **“Warning”** is used for the less severe.

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Hazard Statement

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

- ***Example:*** *Harmful if inhaled (for Category 4 Acute Toxicity - Inhalation)*

Pictogram				
Signal word	Danger	Danger	Danger	Warning
Hazard statement	Fatal if inhaled	Fatal if inhaled	Toxic if inhaled	Harmful if inhaled

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Pictograms

– **“Pictograms”** are a key element of the SDS and GHS system.

– The composition that may include a symbol plus other graphic elements, such as a border, background pattern or color, that is intended to convey specific information about the hazards of a chemical.

Common Pictograms

Hazard Communication – Pictograms and Hazards

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)

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Precautionary Statement

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.

Example *for Explosives, Division 1.1, 1.2 and 1.3*

Keep away from heat/sparks/open flames/hot surfaces. No smoking

Keep wette

Ground/bond container and receiving equipment

Do not subject to grinding/shock/ friction

Wear face protection

Thank You! Questions?