



SAFETY DATA SHEET

What is an SDS?

Labels on materials are an effective way to communicate information about hazardous materials. There will be times when more detailed information is necessary. The most complete and available source of information is the Safety Data Sheet (SDS) or Material Safety Data Sheet (MSDS).

Federal law requires all manufacturers of chemicals to thoroughly evaluate them and determine their hazard potential. If a chemical presents a hazard, an SDS sheet, must be developed to communicate the hazard potential to the users. The SDS must include:

- Chemicals used
- Health and physical hazards associated with the chemicals
- Special handling procedures
- Control measures
- How the chemicals can affect you, whether by breathing them or skin exposure
- Emergency measures to use
- How to contact the manufacturer in an emergency

The Occupational Safety and Health Administration (OSHA) requires that these SDS's be available to all employees. All state safety laws also require that SDS sheets be available for all employees who come under their jurisdiction.

How to Read an SDS?

OSHA requires that all the following information must be on SDS sheets.

Section 1—Identification: The product identifier and the brand name of the product. The name, address and telephone number of the manufacturer,

emergency telephone number, recommended use and restrictions on use.

Section 2—Hazard Identification:

Covers all hazards of the chemical, the required label elements and other hazards.

Section 3—Composition/Information:

This section covers information on ingredients, including chemical identity, common names, impurities and stabilizing additives, chemical identity and concentration or concentration ranges of ingredients which are hazardous.

Section 4—First Aid Measures:

Description of necessary measures, subdivided according to the different routes of exposure (i.e. inhalation, skin and eye contact, ingestion).

Section 5— Firefighting Measures:

Suitable and unsuitable extinguishing media, specific hazards arising from the chemical(s), including nature of hazardous combustion products, special protective equipment and precautions for firefighters.

Section 6— Accidental Release

Measures: Personal precautions, protective equipment and emergency procedures, methods and materials for containment and clean up and environmental precautions.

7- Handling and Storage: Precautions for safe handling and conditions for safe storage, including any incompatibilities.

8- Exposure Controls/Personal Protection: Control parameters including occupational exposure limit values or biological limit values, appropriate engineering controls and individual protection measures.

Section 9—Physical and Chemical

Properties: Information such as appear-

ance, odor, odor thresholds, melting point, freezing point, flash point, evaporation rate, flammability, vapor information, density, solubility, auto ignition temperatures and decomposition temperature.

Section 10—Stability and Reactivity:

Includes information on the chemical stability, possibility of hazardous reactions, conditions to avoid (static discharge, shock, vibration) incompatible materials and hazardous decomposition products.

Section 11—Toxicological Infor-

mation: Includes concise but complete and comprehensible description of various toxicological (health) effects and the available data used to identify those effects.

12—Ecological Information: Includes the ecotoxicity, persistence and degradability, bioaccumulative potential, mobility in soil and other adverse effects (may not appear on all SDS sheets).

13—Disposal Considerations:

Description of waste residues and information on their safe handling and methods of disposal (may not appear on all SDS sheets).

14—Transport Information: Includes the UN number and proper shipping name, transport hazard class(es), and special precautions (may not appear on all SDS sheets).

15—Regulatory Information: Safety, health and environmental regulations specific for the product in question (may not appear on all SDS sheets).

16—Other Information— This may include information on preparation and the date of the SDS revision.

All hazardous materials are required to be labeled according to the Hazard Communication Standard. Primary or original containers must be labeled by the manufacturer and the label must contain the following information:

- Product identifier
- Signal word
- Hazard statements
- Precautionary statements
- The name, address and telephone number of the manufacturer
- Pictograms

In addition, a label commonly contains information on storage and handling, PPE requirements, emergency response and first aid procedures. Labels must remain intact and readable. If the material will be transferred to a secondary container, the information on the original container's label must be transferred as well. Chemicals put into portable containers do not have to be labeled if they are for the *immediate* use of the employee who performs the transfer and the employee will use all of the material in the same work shift.

Globally Harmonized System (GHS) Label—Pictograms



Oxidizer—Can burn without air, or can intensify fire in combustible material.



Corrosives—May cause skin burns and permanent eye damage



Toxic Material— Material which may cause life threatening effects even in small amounts and with short exposure.



Flammable— Flammable if exposed to ignition sources, sparks, heat. Some substances give off flammable gases.



Gases Under Pressure—Gas released may be very cold. Gas container may explode if heated.



Health Effects—May cause serious and prolonged health effects on short or long term exposure



Explosive—May explode if exposed to fire, heat, shock or friction.



Toxic to Aquatic Organisms— May cause long lasting effects in the environment.



Irritant—May cause irritation (redness, rash) or less serious toxicity.