

HOW TO READ A SAFETY DATA SHEET

OSHA Brief:

OSHA requires that the chemical manufacturer, distributor, or importer provide Safety Data Sheets (SDSs) for hazardous chemicals. OSHA requires that each hazardous chemical to be transported must be accompanied by an SDS. The information contained in the SDS is largely the same as the MSDS, except that the SDS is required to be provided in a condensed user-friendly, 28-section format. This new format provides guidance to help workers who handle hazardous chemicals to become familiar with the format and understand the contents of the SDSs.

The SDS requires information on the physical, chemical, health, physical, and safety hazards, and environmental health hazards, protective measures, and safety procedures for handling, storing, and transporting the chemical. The information contained in the SDS is required to be provided in a condensed user-friendly, 28-section format. OSHA requires that SDSs prepared provide specific minimum information as detailed in Appendix C-2 of 29 CFR (29 CFR 1910.1200). The SDSs prepared may also include additional information as required by state or local laws.

Sections 1 through 8 contain general information about the chemical, identification, hazards, composition, safe handling practices, and emergency control measures (e.g., first aid). This information should be helpful to those that need to get the information quickly. Sections 9 through 13, and 24 contain other technical and scientific information such as physical and chemical properties, stability and reactivity information, toxicology, and environmental data. This information is useful for understanding the data of production or test results. The SDSs must also state that no applicable information was found when the preparer does not find relevant information for any chemical. The SDSs must also contain Sections 12 through 15, to be consistent with the GHS Globally Harmonized System of Classification and Labeling of Chemicals (GHS), but OSHA will not change the content of these sections because they contain information described by other agencies. A description of all 28 sections of the SDS, along with their contents, is presented below.

Section 1: Identification

This section identifies the chemical on the SDS as well as the recommended use. It also provides the recommended information on the supplier. The recommended information consists of:

- Product identifier used on the label and any other names or synonyms by which the substance is known.
- Name, address, phone number of the manufacturer, distributor, or other responsible party, and emergency phone number.
- Recommended use of the chemical (e.g., a first aid kit, a cleaning agent, or a solvent).
- Any restrictions on use (e.g., labeling restrictions).



Section 2: Hazard(s) Identification

This section contains the hazards of the chemical on the SDS and the appropriate warning information associated with those hazards. The required information consists of:

- The hazard classification of the chemical (e.g., flammable liquid, category 2).
- Signal word.
- Hazard statement(s).
- Pictograms (the pictograms or hazard symbols may be presented as graphical reproductions of the symbols in black and white or as a description of the name of the symbol (e.g., skull and crossbones, flame).
- Precautionary statement(s).
- Description of any hazards not otherwise classified.



Section 3: Ingredients Information

This section provides information on the ingredients of the chemical on the SDS, including impurities and stabilizing additives. This section includes information on substances, mixtures, and all chemicals where a trade secret is claimed. The required information consists of:

- Substances.
- Chemical name and synonyms.
- Chemical Abstracts Service (CAS) number and other unique identifiers.
- Impurities and stabilizing additives, which are themselves classified and which contribute to the hazard classification of the chemical.
- Mixtures.
- Some information required for substances:
 - The chemical name and concentration (i.e., exact percentage) of all ingredients which are classified as health hazards and are present above their cut-off concentration limits.
 - There is a high risk of fire or explosion.
 - The concentration (exact percentage) of each ingredient must be specified except concentration ranges may be used in the following situations:
 - Each ingredient is stable.
 - There is both a both variation, or.
 - The SDS is used for a group of substantially similar mixtures.
 - Details where a trade secret is claimed.
 - A statement that the specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret is required.



Section 4: First-Aid Measures

This section describes the most cases that should be given by personnel responding to an individual who has been exposed to the chemical. The required information consists of:

- Necessary first aid instructions by relevant routes of exposure (inhalation, skin and eye contact, and ingestion).
- Other special or more important symptoms or effects, and any symptoms that are acute or delayed.
- Recommendations for immediate medical care and special treatment needed, when necessary.

Section 5: Fire-Fighting Measures

This section provides recommendations for fighting a fire caused by the chemical. The required information consists of:

- Recommendations of suitable extinguishing equipment, and information about extinguishing equipment that is not appropriate for a particular situation.
- Advice on special hazards that may result from fire during the fire, such as any hazardous combustion products created when the chemical burns.
- Recommendations on special protective measures for firefighters.

Section 6: Accidental Release Measures

This section provides recommendations on the appropriate response to spills, leaks, or releases from containers and releases that may result in personal or excessive exposure to people, properties, or the environment. It may also include recommendations (distinguishing between responses for large and small spills) about the spill or release (e.g., spills and releases) and any other relevant information. The required information consists of:

- Use of personal precautions (such as removal of ignition sources or preventing further release) and protective equipment to prevent the release of the chemical, and clothing.
- Emergency procedures, including instructions for evacuation, consulting experts, and other special measures.
- Methods and materials used for containment (e.g., covering the drums and capping procedures).
- Cleaning procedures (e.g., appropriate techniques for decontamination, decontamination, cleaning or vacuuming, sufficient materials, and/or equipment required for containment).

Section 7: Handling and Storage

This section provides guidance on the safe handling practices and conditions for safe storage of chemicals. The required information consists of:

- Precautions for handling chemicals and containers for handling chemicals, minimizing the release of the chemical into the environment, and providing advice on general hygiene practices (e.g., eating, drinking, and smoking).
- Recommendations on the conditions for safe storage, including any incompatibilities.
- Provide advice on specific storage requirements (e.g., ventilation requirements).

Section 8: Exposure Controls/Personal Protection

This section contains the exposure controls and personal protection measures. The required information consists of:

- Control measures (e.g., engineering controls, administrative controls, and personal protective equipment).
- Exposure limits (e.g., OSHA's Permissible Exposure Limit (PEL), American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Value (TLV), and any other exposure limit used or recommended by the chemical manufacturer, importer, or supplier).
- Appropriate types of eye, face, skin, or respiratory protection needed based on exposure to chemicals, such as personal protective equipment (PPE) or other appropriate types of eye, face, skin, or respiratory protection needed based on exposure to chemicals.
- Any other information that may be relevant to the handling or storage (e.g., use of gloves, material, such as PVC or other rubber gloves, and breakthrough time of the gloves).



Section 9: Physical/Chemical Properties

This section identifies physical and chemical properties associated with the chemical. The required information consists of:

- Appearance (physical state, color, etc.).
- Upper/lower flammability or explosive limits.
- Boiling point.
- Vapor pressure.
- Density (relative to water).
- Color (if any).
- Odor (if any).
- Refractive index.
- Melting/freezing point.
- Stability (chemical and physical).
- Decomposition temperature, and other relevant information.
- Other relevant information.

The SDS may not contain every item on the above list because information may not be relevant or is not available. When this occurs, a notation to that effect must be made for each item on the list. The SDS may also contain other relevant information, such as the dust deflagration index (StoD) for combustible dust, used to evaluate a dust's explosion potential.



Notes:

Business Contacts:

Supplier/Manufacturer:

Customer:

Other:

Emergency Contacts:

Manufacturer:

Other:

Section 10: Stability and Reactivity

This section describes the stability hazards of the chemical and the chemical stability information. This section is broken into three parts: reactivity, chemical stability, and other chemical stability. The required information consists of:

- Reactivity, and other chemical stability information. This data can be used to determine the stability of the chemical, and data for the chemical. This data can be used to determine the stability of the chemical, and data for the chemical.
- Chemical stability information. This data can be used to determine the stability of the chemical, and data for the chemical.
- Reactivity information. This data can be used to determine the reactivity of the chemical, and data for the chemical.
- Stability information. This data can be used to determine the stability of the chemical, and data for the chemical.
- Other chemical stability information. This data can be used to determine the other chemical stability of the chemical, and data for the chemical.

Section 11: Toxicological Information

This section contains information on the toxicological effects of the chemical. The required information consists of:

- Information on the chemical, including its name, chemical structure, and other relevant information.
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Section 12: Ecological Information

This section provides information on the ecological effects of the chemical. The required information consists of:

- Information on the chemical, including its name, chemical structure, and other relevant information.
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Section 13: Disposal Considerations

This section provides information on the disposal considerations for the chemical. The required information consists of:

- Information on the chemical, including its name, chemical structure, and other relevant information.
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Section 14: Transport Information

This section provides information on the transport information for the chemical. The required information consists of:

- Information on the chemical, including its name, chemical structure, and other relevant information.
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Section 15: Regulatory Information

This section identifies the safety, health, and environmental regulations specific to the chemical. The required information consists of:

- Information on the chemical, including its name, chemical structure, and other relevant information.
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Section 16: Other Information

This section provides information on the other information for the chemical. The required information consists of:

- Information on the chemical, including its name, chemical structure, and other relevant information.
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main duty is production in community and hospital pharmacies and industries Undergraduate as well as graduate pharmacy students will find knowledge and backgrounds in a fully coherent way and fully supported with examples

Construction Safety: Health, Practices and OSHA M. Rashad Islam, 2021-10-15 A comprehensive overview of all aspects of construction safety including standards and regulations for major infrastructure and construction projects of all types Construction Safety Health Practices and OSHA covers key elements of construction safety across all types of construction In depth coverage includes safety principles precautions necessary with the use of specific materials protections for various types of construction detailed explanations of Activity Hazard Analyses AHA and Job Hazard Analysis JHA and compliance with OSHA regulations The book contains theoretical materials and detailed explanations with photos tables diagrams and sketches At the end of each chapter there are multiple choice and fill in the blanks questions typical of those found in various national exams and OSHA construction safety training exam as well as practice problems and critical thinking questions Coverage includes Personal Protective and Life Saving Equipment Activity Hazard Analysis AHA and Job Hazard Analysis JHA Toxic and Hazardous Substances Concrete Masonry Steel and Wood Construction Underground Construction Caissons Cofferdams and Compressed Air Blasting and fires Electric Power Transmission and Distribution Mechanized Equipment Scaffold Materials Handling and Transportation Promoting Safety and Preventing Violence

MSDS Reference for Crop Protection Products ,2003 Cal-OSHA Reporter ,1987 **Mushroom News** ,2014 **Code of Federal Regulations, Title 21, Food and Drugs, PT. 500-599, Revised as of April 1, 2015** Food and Drug Administration (U S),Food and Drug Administration (U S, 2015-07-14 The Code of Federal Regulations is a codification of the general and permanent rules published in the Federal Register by the Executive departments and agencies of the United States Federal Government This printed version of the Code of Federal Regulations is the Official United States Government version 21 CFR Parts 500 599 covers animal drug products dosages animal food labeling animal drug applications and more Keywords 21 CFR Parts 500 to 599 21 CFR Parts 500 599 cfr 21 parts 500 599 cfr 21 Parts 500 to 599 animal drug products animal drug dosages U S Food and Drug Administration FDA fda food and drug administration animal food and feed genetically engineered animals animal drug labeling and processes *Occupational Safety and Health Law* Mark A. Rothstein, 1990 Previous edition 1st published in 1978 *Title 40 Protection of Environment Part 63 (§§ 63.600 to 63.1199) (Revised as of July 1, 2013)* Office of The Federal Register, Enhanced by IntraWEB, LLC, 2014-07 40 CFR Protection of Environment *Human Resources Report* ,2005 National Fire Codes National Fire Protection Association, 1996-01-22 A compilation of NFPA codes standards recommended practices and manuals amended or adopted by NFPA at the annual meeting **Daily Labor Report** ,1999 **Food Protection Trends** ,2008-07 How to Comply with the OSHA Hazard Communication Standard Daniel J. Young, 1989 With the standard extended to all places that make store use or process any amount of hazardous material some 4 5 million workplaces must comply This guide explains the requirements and offers step by step procedures for meeting

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