Hazard Communication - Material Safety Data Sheets

5-Minute Talk

Overview of topic

Chemicals can pose a wide range of hazards, from mild irritation to possible death. OSHA's Hazard Communication Standard is designed to ensure that workers and employers have information about these hazards and can establish appropriate protective measures. One important source for this information is the safety data sheet (SDS). The SDS is the primary tool for finding information about the chemicals in the workplace.

However, material safety data sheets (MSDSs) were required before OSHA issued the SDS requirements in March 2012. Your workers may still see and use MSDSs if new chemical inventory has not been purchased. Once new chemical inventory is purchased, an SDS should be received and used.

MSDSs come in a variety of formats. There are fewer required elements in an MSDS, and they may be in any order on the sheet. The SDS, on the other hand, follows a rigid 16-section format, and the content may be more detailed than what is in an MSDS. However, both types of data sheets are similar in purpose and content overall.

Whether the data sheet is an MSDS or SDS, it must be in English. It must also be accessible during each work shift. If workers travel between worksites, the data sheet may be kept at a central location that is immediately accessible. Most data sheets come on paper, but some employers provide them on electronically. OSHA approves of this method, but only if the information is in English and readily available to workers.

MSDS information

The MSDS must have the following sections which contain the specified information.

MSDS section:	Description:
Chemical Identity	The identity used on the label, except trade secrets.
Physical and chemical characteristics	Appearance, odor, vapor pressure, flash point, and other characteristics.
Physical Hazards	Including the potential for fire, explosion, and reactivity.

Health Hazards	Including signs and symptoms of exposure, and any medical conditions which are generally recognized as being aggravated by exposure to the chemical.
Primary route(s) of entry	Including skin contact, inhalation, and ingestion.
Exposure limits	Exposure limits used or recommended by the chemical manufacturer, importer, or employer preparing the MSDS, where available.
Carcinogenic properties	Whether the hazardous chemical is listed in the official lists of carcinogens and potential carcinogens.
Precautions for safe handling and use	Any generally applicable precautions for safe handling and use, including hygienic practices, personal protective measures, and procedures for cleanup of spills and leaks.
Control Measures	Any generally applicable control measures, such as appropriate engineering controls, work practices, or personal protective equipment (PPE).
Emergency and first-aid measures	How to treat workers who are exposed.
Date of preparation	The date of preparation of the MSDS or the last change to it.
Manufacturer, importer, or responsible party	The name, address, and telephone number of the chemical manufacturer, importer, employer, or other responsible party preparing or distributing the MSDS, who can provide additional information on the hazardous chemical and appropriate emergency procedures, if necessary.

SDS information

The SDS must follow a specific 16-section format:

SDS section:	Description:
Section 1, Identification	The identity used on the label, except trade secrets; recommended use of the chemical and restrictions on use; and contact information for the manufacturer, importer, or other responsible party.
Section 2, Hazard(s) identification	Emergency overview and adverse health effects. This section also includes required label elements.
Section 3, Composition/information on ingredients	Chemical and common names and synonyms, along with CAS numbers of all ingredients classified as health hazards.
Section 4, First-aid measures	Signs and symptoms of exposure; instructions for treatment of accidental exposure; the routes of exposure, symptoms and effects, and medical attention needed.
Section 5, Fire-fighting measures	Flash point, auto ignition temperature, and upper and lower flammable limits.
Section 6, Accidental release measures	Actions to take in the event of a spill, leak, or release; the personal protective equipment (PPE) needed; protective measures required, and materials needed for containment and clean up.
Section 7, Handling and storage	Safe handling and storage recommendations, along with any incompatibilities.
Section 8, Exposure controls/personal protection	OSHA permissible exposure limit (PEL); any other exposure limits; appropriate engineering controls, and personal protection measures.
Section 9, Physical and chemical properties	The chemical's appearance, odor, flash point, flammability, and so on.
Section 10, Stability and reactivity	Conditions to avoid, incompatible materials, and hazardous decomposition products.
Section 11, Toxicological information	Health effects, likely routes of exposure, exposure symptoms, and delayed and immediate effects.

Section 12, Ecological information	Environmental effects, ecotoxicity, persistence and degradability, bioaccumulative potential, mobility in soil, and other adverse effects.
Section 13, Disposal considerations	Waste residues and information; safe handling and methods of disposal; and disposal of contaminated packaging.
Section 14, Transport information	UN number and proper shipping name; transport hazard class(es); packing group; environmental hazards; and other transport precautions.
Section 15, Regulatory information	Applicable safety, health, and environmental regulations.
Section 16, Other information	Date of preparation or the last change to it.

Employee training

An effective data sheet training program will:

- Explain to employees what MSDSs and SDSs are.
- Go over the differences between MSDSs and SDSs.
- Inform workers as to the location of MSDSs and SDSs at the workplace.
- Explain how to use the hazard information on MSDSs and SDSs.
- Designate and train someone to obtain and maintain MSDSs and SDSs.

Training tips

- Review the handout which shows a side-by-side comparison of the MSDS and SDS elements.
- Review 1910.1200.
- Review the company's written chemical hazard communication program.
- Explain where employees can find MSDSs and SDSs in the workplace.
- Explain how to interpret the information on the MSDS and SDS, especially when selecting personal protective equipment (PPE).
- Tell employees who is responsible for obtaining and maintaining MSDSs and SDSS in the workplace.

Where to go for more information

- 29 CFR 1910.1200 — Hazard Communication
- The company's written hazard communication program
- MSDSs and SDSs of chemicals present in the workplace