



COLORADO ENVIRONMENTAL PESTICIDE EDUCATION PROGRAM

Pesticide Fact Sheet #104
CEPEP 5/00
Updated 6/06

UNDERSTANDING THE MATERIAL SAFETY DATA SHEET

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This fact sheet describes what the Material Safety Data Sheet is, how it is to be used, and covers the sections of the MSDS.

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Understanding the Material Safety Data Sheet

The **Material Safety Data Sheet (MSDS)** is a technical bulletin that provides workers and emergency personnel with the proper procedures for handling or working with that substance. The MSDS includes information such as physical data (melting point, boiling point, flash point), toxicity, health effects, first aid, reactivity, storage, protective equipment, and spill/leak procedures. The MSDS supplements the information provided on the container's label (see Pesticide Fact Sheet [The Pesticide Label](#)). Remember that if a chemical accident occurs, do not rely solely on the MSDS. Additional information from pesticide labels and labeling about the chemicals involved in an accident may be critical to a safe response.

A supplier must develop or obtain an MSDS for each controlled product he/she sells or imports. Information must be current and prepared not more than three years before sale or importation.

A copy of the current MSDS must be sent to the purchaser on or before the date of sale at the time of the first purchase. Copies of MSDS must be accessible to personnel and close to their work areas. Personnel must be able to interpret and apply the information presented in the MSDS.

Notice that although the formats of the MSDS vary, they usually convey the same basic information. Do not be confused by different formats. Most pesticide manufacturers include additional information on the MSDS that may be useful to those handling the material along the supply chain.

Chemical suppliers must ensure that they provide distributors and employers an appropriate MSDS with their initial shipment and with the first shipment after a MSDS update. The chemical suppliers must either provide MSDS with the shipped containers or send them to the employer prior to or at the time of the shipment. If the MSDS is not provided with a shipment that has been labeled as a hazardous chemical, the purchaser must obtain one from the chemical supplier as soon as possible.

The employer must:

- Maintain copies of the required MSDS for each hazardous chemical in the workplace.
- Ensure that MSDSs are readily accessible during each work shift to employees.

The MSDS contains the following sections.

- Section 1. Material identification, manufacturer and emergency phone number
- Section 2. Ingredients and hazards
- Section 3. Physical data
- Section 4. Fire and explosion data
- Section 5. Reactivity data
- Section 6. Health hazard information
- Section 7. Spill, leak and disposal procedures
- Section 8. Special protection information
- Section 9. Special precautions and comments

References and Resources

Fishel, F and Andre, P. 1999. *Understanding the Material Safety Data Sheet*, G 1913. MU Extension, University of Missouri. Columbia, MO.

Gempler's Tailgate Training Tip Sheet. 1997. *Understanding Material Safety Data Sheets*, No. 51. Gempler's, Inc., Belleville, WI.

[CEPEP Home Page](#)

MATERIAL SAFETY DATA SHEET				
SECTION 1 — PRODUCT IDENTIFICATION AND USE				
PRODUCT IDENTIFIER		PRODUCT IDENTIFICATION NUMBER (PIN)		
PRODUCT USE				
MANUFACTURER'S NAME		SUPPLIER'S NAME		
STREET ADDRESS		STREET ADDRESS		
CITY	PROVINCE	CITY	PROVINCE	
POSTAL CODE	EMERGENCY TELEPHONE NO.	POSTAL CODE	EMERGENCY TELEPHONE NO.	
SECTION 2 — HAZARDOUS INGREDIENTS				
HAZARDOUS INGREDIENTS	%	CAS NUMBER	LD ₅₀ OF INGREDIENT (SPECIFY SPECIES AND ROUTE)	LD ₅₀ OF INGREDIENT (SPECIFY SPECIES)
SECTION 3 — PHYSICAL DATA				
PHYSICAL STATE	ODOUR AND APPEARANCE		ODOUR THRESHOLD (ppm)	
VAPOUR PRESSURE (mm Hg)	VAPOUR DENSITY (AIR=1)	EVAPORATION RATE	BOILING POINT (°C)	FREEZING POINT (°C)
pH	SPECIFIC GRAVITY	COEFF. WATER/ORG. DIST.		
SECTION 4 — FIRE AND EXPLOSION DATA				
FLAMMABILITY YES <input type="checkbox"/> NO <input type="checkbox"/> IF YES, UNDER WHICH CONDITIONS?				
MEANS OF EXTINCTION				
FLASHPOINT (°C) AND METHOD	UPPER FLAMMABLE LIMIT (% BY VOLUME)		LOWER FLAMMABLE LIMIT (% BY VOLUME)	
AUTOIGNITION TEMPERATURE (°C)	HAZARDOUS COMBUSTION PRODUCTS			
EXPLOSION DATA	SENSITIVITY TO IMPACT		SENSITIVITY TO STATIC DISCHARGE	
SECTION 5 — REACTIVITY DATA				
CHEMICAL STABILITY YES <input type="checkbox"/> NO <input type="checkbox"/> IF NO, UNDER WHICH CONDITIONS?				
INCOMPATIBILITY WITH OTHER SUBSTANCES YES <input type="checkbox"/> NO <input type="checkbox"/> IF SO, WHICH ONE(S)?				
REACTIVITY, AND UNDER WHAT CONDITIONS				
HAZARDOUS DECOMPOSITION PRODUCTS				

SECTION 6 — TOXICOLOGICAL PROPERTIES				
ROUTE OF ENTRY SKIN CONTACT <input type="checkbox"/> SKIN ABSORPTION <input type="checkbox"/> EYE CONTACT <input type="checkbox"/> INHALATION <input type="checkbox"/> INGESTION <input type="checkbox"/>				
EFFECTS OF ACUTE EXPOSURE TO PRODUCT				
EFFECTS OF CHRONIC EXPOSURE TO PRODUCT				
EXPOSURE LIMITS	PURITY OF PRODUCT	SENSITIZATION TO PRODUCT	CARCINOGENICITY	
TERATOGENICITY	REPRODUCTIVE TOXICITY	MUTAGENICITY	SYNERGISTIC PRODUCTS	
SECTION 7 — PREVENTIVE MEASURES				
PERSONAL PROTECTIVE EQUIPMENT:				
GLOVES (SPECIFY)	RESPIRATOR (SPECIFY)	EYE (SPECIFY)		
FOOTWEAR (SPECIFY)	CLOTHING (SPECIFY)	OTHER (SPECIFY)		
ENGINEERING CONTROLS (SPECIFY, EG VENTILATION, ENCLOSED PROCESS)				
LEAK AND SPILL PROCEDURE				
WASTE DISPOSAL				
HANDLING PROCEDURES AND EQUIPMENT				
STORAGE REQUIREMENTS				
SPECIAL SHIPPING INFORMATION				
SECTION 8 — FIRST AID MEASURES				
SPECIFIC MEASURES				
SECTION 9 — PREPARATION DATE OF MSDS				
PREPARED BY (GROUP/DEPARTMENT, ETC.)	PHONE NUMBER	DATE		

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