



MSDS - Manganese Sulfate

Issued June 3, 2008

Section 1. Product Information

Product Name/Trade Name: Manganese Sulfate Monohydrate

Synonym: Sulfuric Acid, Manganese salt monohydrate, Manganous Sulphate

Formula: $\text{MnSO}_4\text{H}_2\text{O}$, MnSO_4

Chemical Name: Manganese Sulfate Monohydrate

Chemical Formula $\text{MnSO}_4\text{H}_2\text{O}$

CAS No.: 10034-96-5 (monohydrate) 7785-87-7 (anhydrous)

EINECS (Ec) No: 232-089-9

Distributed by Pestell Minerals & Ingredients, New Hamburg, ON Canada

24 Hour Emergency Telephone (Canutec): 613-996-6666

Section 2. Hazards Ingredients

Ingredient: Manganese Sulfate Monohydrate

98-100% by Weight

Section 3. Physical Data

Physical State: Solid

Appearance: Slightly pink powder

Odor: Odorless

Specific Gravity: 2.95

pH Value: 5.0 - 7.0

Melting Point: 200°C

Boiling Point: 850°C

Decomposition: 200°C

Liquid Density: N/A

Vapor Pressure: N/A

Vapor Density: N/A

Evaporation Rate: N/A

Solubility: Easily soluble in water, insoluble in ethanol

Section 4. Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures

Incompatibility (Materials to Avoid): Strong oxidizing agents, strong acids, aluminum and magnesium

Conditions to Avoid: Incompatible materials, exposure to moist air or water, excessive heat

Hazardous Decomposition Products: Carbon dioxide, sulfur oxides, oxides of manganese

Hazardous Polymerization: Will not occur

Section 5. Hazardous Identification

Overview: Harmful if swallowed or inhaled. Affects lungs, central nervous system, blood and kidneys. May cause irritation to skin, eyes and respiratory tract.

Potential Acute Health Effects

Eyes: May cause mild eye irritation

Skin: May cause skin irritation. Low hazard for usual industrial handling.

Ingestion: Harmful if swallowed. May cause gastrointestinal irritation with nausea, vomiting and diarrhea.

Inhalation: Harmful if inhaled. May cause respiratory tract irritation.

Potential Chronic Health Effects

Chronic manganese poisoning can result from excessive inhalation and ingestion exposure and involves impairment of the central nervous system. Kidney effects, blood changes and manganese psychosis also may occur as a result of chronic exposure. Chronic inhalation exposure can cause lung damage. Please refer to **Section 12: Toxicological Information** of this MSDS to get more details about the potential chronic health effects.

Section 6. First Aid

Eyes: Flush eyes with plenty of water for at least 15 minutes. Seek medical advice if effects persist.

Skin: Flush affected area with plenty of water and mild detergent for several minutes. Remove contaminated clothing and wash before re-use. Seek medical advice if effects persist.

Ingestion: If victim is conscious and alert, give 2-4 cupful of milk or water. Never give anything by mouth to an unconscious person. Seek medical attention.

Inhalation: Remove victim to fresh air. Employ artificial respiration if indicated. Seek medical attention.

Section 7. Fire Fighting Measures

Flash Point: N/A

Explosive Limit: N/A

Autoignition Temperature: N/A

Fire/Explosion: Not considered to be a fire and explosion hazard

Extinguishing Medium: Water fog or other medium appropriate to surrounding fire conditions.

Fire Fighting Instructions

Use suitable protective equipment for surrounding fire. The use of fire extinguishers of the chlorinated hydrocarbon type is not recommended, as toxic products will probably be produced by the decomposition of the extinguishing medium when it come into contact with hot manganese compounds.

Section 8. Spills and Disposals

Don't touch or walk through this product. Stop leak if safe to do so. Prevent entry into waterways, drains, confined areas. Prevent dust cloud. Use clean non-sparking tools to collect material and place it into loosely covered plastic containers for later disposal.

Section 9. Handling and Storage

Handling: Wash hands before eating. Use with adequate ventilation. Avoid breathing dust. Avoid contacting skin, eyes and clothing. Avoid prolonged or repeated exposure.

Storage: Keep in a tightly closed container and store in a cool, dry, well ventilated place. Protect against physical damage. Isolate from all incompatible substances.

Section 10. Disposal Suggestions

Dispose of in accordance with all applicable local, state and federal regulations at an approved waste disposal facility.

Section 11. Exposure Controls & Personal Protection

Exposure Limits

OSHA PEL: 5mg/CBM Ceiling for manganese compounds as Mn

ACGIH TLV: 0.2 mg/CBM (TWA) for manganese, elemental and inorganic compounds as Mn.

Engineering Controls

Use adequate exhaust ventilation to keep airborne concentrations below the allowable exposure limit.

Personal Protective Equipment

Eyes: Wear appropriate protective eyeglasses or chemical safety goggles

Skin: Wear appropriate protective gloves

Respiratory System: Approved or certified respirators

Other Protective Equipments: Overalls or similar protective apparel, clean up facilities.

Don't eat, drink or smoke in work areas. Wash hands thoroughly after handling this material.

Section 12. Toxicological Information

Toxicity to Animals: LD50/LC50, N/A. Oral (Rat) 2150mg/kg. Does not belong to toxic substances.

Chronic Effects on Humans

Overview: The substance is toxic to lungs, central nervous system (CNS), liver and kidney. Chronic manganese poisoning can result from excessive inhalation and ingestion exposure and involves impairment of the central nervous system. Early symptoms include sluggishness, sleepiness and weakness in the legs. Advanced cases have shown fixed facial expression, emotional disturbances, spastic gait and falling. Illness closely resembles Parkinson's Disease. Kidney effects, blood changes and manganese psychosis also may occur as a result of long term exposure. Chronic inhalation exposure can cause lung damage.

Carcinogenicity: Not listed as a suspected/confirmed carcinogen by ACGIH, IARC, NTP, SHA.

Mutagenicity: Possible for humans. Laboratory experiments have shown mutagenic effects.

Reproductive Toxicity: N/A. May damage the reproductive system.

Teratogenicity: Teratogenic effects shown in lab animals.

Section 13. Ecological Information

Degradability: N/A

Aquatic Toxicity: This product is classified as an environmental factor by EC with phrases N R51-53.
Environmental Precautions: Environmentally Hazardous Material. DO NOT DISCHARGE into drains and rivers.

Section 14. Transport and Label Information

Transport: Not redefined as hazardous material by IMDG Code and IATA

See UN suggestion if not redefined in your area

Label Hazard and Precautions

Warning! Harmful if swallowed or inhaled. May affect central nervous system, blood and respiratory system. Do not breathe dust. Use only with adequate ventilation. Wash thoroughly after handling. Wear work gloves, safety goggles, breathing mask and overalls when handling. Avoid release to environment. Keep out of reach of Children!.

Label First Aid: See Section 6: First Aid Measures of this MSDS

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