

Manganese (II) Sulfate, Monohydrate

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: Manganese (II) Sulfate, Monohydrate

Synonyms/Generic Names: None

SDS Number: 444.00

Product Use: For Educational Use Only

Manufacturer: Columbus Chemical Industries, Inc.
N4335 Temkin Rd.
Columbus, WI. 53925

For More Information Contact: Ward's Science
5100 West Henrietta Rd.
PO Box 92912-9012
Rochester, NY 14692
(800) 962-2660 (Monday-Friday 7:30-7:00 Eastern Time)

In Case of Emergency Call: CHEMTREC - 800-424-9300 or 703-527-3887 (24 Hours/Day, 7 Days/Week)

2. HAZARDS IDENTIFICATION

OSHA Hazards: Target organ effect

Target Organs: Lungs, Nerves

Signal Words: Warning

Pictograms:



GHS Classification:

| | |
|--|------------|
| Acute aquatic toxicity | Category 2 |
| Specific target organ toxicity – repeated exposure | Category 2 |

GHS Label Elements, including precautionary statements:

Hazard Statements:

| | |
|------|--|
| H373 | May cause damage to organs through prolonged or repeated exposure. |
| H401 | Toxic to aquatic life. |

Precautionary Statements:

| |
|------|
| None |
|------|

Potential Health Effects

| | |
|-------------------|---|
| Eyes | May cause eye irritation. |
| Inhalation | May be harmful if inhaled. May cause respiratory tract irritation. |
| Skin | May be harmful if absorbed through skin. May cause skin irritation. |
| Ingestion | May be harmful if swallowed. |

NFPA Ratings

| | |
|------------------------|---------------|
| Health | 1 |
| Flammability | 0 |
| Reactivity | 0 |
| Specific hazard | Not Available |

HMIS Ratings

| | |
|-------------------|---|
| Health | 1 |
| Fire | 0 |
| Reactivity | 0 |
| Personal | E |

3. COMPOSITION/INFORMATION ON INGREDIENTS

| Component | Weight % | CAS # | EINECS# / ELINCS# | Formula | Molecular Weight |
|-------------------------------|----------|------------|-------------------|-------------------------------------|------------------|
| Manganese Sulfate Monohydrate | 100 | 10034-96-5 | 232-089-9 | MnSO ₄ ·H ₂ O | 169.03 g/mol |

4. FIRST-AID MEASURES

| | |
|-------------------|---|
| Eyes | In case of eye contact, rinse with plenty of water and seek medical attention if necessary. |
| Inhalation | Move casualty to fresh air and keep at rest. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention if necessary. |
| Skin | Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and wash using soap. Get medical attention if necessary. |
| Ingestion | Do Not Induce Vomiting! Never give anything by mouth to an unconscious person. If conscious, wash out mouth with water. Get medical attention if necessary. |

5. FIREFIGHTING MEASURES

| | |
|--|--|
| Suitable (and unsuitable) extinguishing media | Use water spray, alcohol-resistant foam, dry chemical, or carbon dioxide. |
| Special protective equipment and precautions for firefighters | Wear self contained breathing apparatus for firefighting if necessary. |
| Specific hazards arising from the chemical | Emits toxic fumes (sulfur oxides, manganese oxides) under fire conditions. (See also Stability and Reactivity section) |

6. ACCIDENTAL RELEASE MEASURES

| | |
|--|---|
| Personal precautions, protective equipment and emergency procedures | See section 8 for recommendations on the use of personal protective equipment. Avoid dust formation. Avoid breathing dust. Ensure adequate ventilation. |
| Environmental precautions | Prevent spillage from entering drains. Discharge into the environment must be avoided. Any release to the environment may be subject to a federal/national or local reporting requirements. |
| Methods and materials for containment and cleaning up | Pick up and arrange disposal without creating dust. Sweep up and place in suitable, closed containers for disposal. Clean surfaces thoroughly with water to remove residual contamination. Dispose of all waste and cleanup materials in accordance with regulations. |

7. HANDLING AND STORAGE

Precautions for safe handling

See section 8 for recommendations on the use of personal protective equipment. Use with adequate ventilation. Wash thoroughly after using. Keep container closed when not in use.

Conditions for safe storage, including any incompatibilities

Store in cool, dry, well ventilated area in tightly-closed, plainly-labeled containers. Protect against light. Store in corrosion-proof area. Hygroscopic, keep in a dry place.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Occupational Exposure Controls:

| Component | Exposure Limits | Basis | Entity |
|------------------------|-----------------------|-------|--------|
| Manganese, fume, as Mn | 5 mg/m ³ | CEIL | OSHA |
| | 0.2 mg/m ³ | TLV | ACGIH |
| | 1 mg/m ³ | REL | NIOSH |
| | 3 mg/m ³ | STEL | NIOSH |

TWA: Time Weighted Average over 8 hours of work.

TLV: Threshold Limit Value over 8 hours of work.

REL: Recommended Exposure Limit

PEL: Permissible Exposure Limit

STEL: Short Term Exposure Limit during x minutes.

IDLH: Immediately Dangerous to Life or Health

WEEL: Workplace Environmental Exposure Levels

Personal Protection

| | |
|-------------------|--|
| Eyes | Safety glasses with side shields. |
| Inhalation | Provide local exhaust, preferably mechanical. If exposure levels are excessive, use an approved respirator. |
| Skin | Choose body protection according to the amount and concentration of the dangerous substance at the work place. |
| Other | Not Available |

Other Recommendations

Provide eyewash stations, quick-drench showers and washing facilities accessible to areas of use and handling. Have supplies and equipment for neutralization and running water available.

9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|--|----------------------------------|
| Appearance (physical state, color, etc.) | Light pink powder. |
| Odor | Not Available |
| Odor threshold | Not Available |
| pH | 3.0-3.5 at 50 g/l at 20°C (68°F) |
| Melting point/freezing point | Not Available |
| Initial boiling point and boiling range | Not Available |
| Flash point | Not Available |
| Evaporation rate | Not Available |
| Flammability (solid, gas) | Not Flammable |

| | |
|---|---------------|
| Upper/lower flammability or explosive limit | Not Explosive |
| Vapor pressure | Not Available |
| Vapor density | Not Available |
| Relative density | Not Available |
| Solubility (ies) | Soluble |
| Partition coefficient: n-octanol/water | Not Available |
| Auto-ignition temperature | Not Available |
| Decomposition temperature | Not Available |

10. STABILITY AND REACTIVITY

| | |
|---|-----------------------------------|
| Chemical Stability | Stable |
| Possibility of Hazardous Reactions | Will not occur. |
| Conditions to Avoid | Acids, moisture, strong oxidizers |
| Incompatible Materials | Not Available |
| Hazardous Decomposition Products | Sulfur oxides, Manganese oxides. |

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

| | |
|--------------------|---------------|
| Skin | Not Available |
| Eyes | Not Available |
| Respiratory | Not Available |
| Ingestion | Not Available |

Carcinogenicity

| | |
|--------------|--|
| IARC | No components of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC. |
| ACGIH | No components of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH. |
| NTP | No components of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP. |
| OSHA | No components of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA. |

Signs & Symptoms of Exposure

| | |
|-------------------|---|
| Eyes | May cause eye irritation. |
| Inhalation | May be harmful if inhaled. May cause respiratory tract irritation. |
| Skin | May be harmful if absorbed through skin. May cause skin irritation. |
| Ingestion | May be harmful if swallowed. |

| | |
|---------------------------------------|--|
| Chronic Toxicity | Not Available |
| Teratogenicity | Not Available |
| Mutagenicity | Not Available |
| Embryotoxicity | Reproductive toxicity – mouse – male – Oral Paternal: Spermatogenesis (including genetic material, sperm morphology, motility, and count) |
| Specific Target Organ Toxicity | May cause damage to organs through prolonged or repeated exposure. |

12. ECOLOGICAL INFORMATION

Ecotoxicity

| | |
|-----------------------------|---------------|
| Aquatic Vertebrate | Not Available |
| Aquatic Invertebrate | Not Available |
| Terrestrial | Not Available |

| | |
|--------------------------------------|---|
| Persistence and Degradability | Not Available |
| Bioaccumulative Potential | Not Available |
| Mobility in Soil | Not Available |
| PBT and vPvB Assessment | Not Available |
| Other Adverse Effects | Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. |

13. DISPOSAL CONSIDERATIONS

| | |
|---------------------------|---|
| Waste Residues | Users should review their operations in terms of the applicable federal/national or local regulations and consult with appropriate regulatory agencies before discharging or disposing of waste material. |
| Product Containers | Users should review their operations in terms of the applicable federal/national or local regulations and consult with appropriate regulatory agencies before discharging or disposing of waste material. |

The information offered in section 13 is for the product as shipped. Use and/or alterations to the product may significantly change the characteristics of the material and alter the waste classification and proper disposal methods.

14. TRANSPORTATION INFORMATION

| | |
|------------------|---------------------|
| US DOT | Not Dangerous Goods |
| TDG | Not Dangerous Goods |
| IMDG | Not Dangerous Goods |
| Marine Pollutant | No |
| IATA/ICAO | Not Dangerous Goods |

15. REGULATORY INFORMATION

| | |
|---------------------------|---|
| TSCA Inventory Status | All ingredients are listed on the TSCA inventory. |
| DSCL (EEC) | All ingredients are listed on the DSCL inventory. |
| California Proposition 65 | Not Listed |
| SARA 302 | Not Listed |
| SARA 304 | Not Listed |
| SARA 311 | Manganese Sulfate Monohydrate |
| SARA 312 | Manganese Sulfate Monohydrate |
| SARA 313 | Not Listed |
| WHMIS Canada | Class D-2B: Material causing other toxic effects (TOXIC). |

16. OTHER INFORMATION

| Revision | Date |
|------------|------------|
| Revision 1 | 01/31/2013 |
| | |
| | |

Disclaimer: Columbus Chemical Industries, Inc. ("Columbus") believes that the information herein is factual but is not intended to be all inclusive. The information relates only to the specific material designated and does not relate to its use in combination with other materials or its use as to any particular process. Because safety standards and regulations are subject to change and because Columbus has no continuing control over the material, those handling, storing or using the material should satisfy themselves that they have current information regarding the particular way the material is handled, stored or used and that the same is done in accordance with federal, state and local law. COLUMBUS MAKES NO WARRANTY, EXPRESS OR IMPLIED, INCLUDING (WITHOUT LIMITATION) WARRANTIES WITH RESPECT TO THE COMPLETENESS OR CONTINUING ACCURACY OF THE INFORMATION CONTAINED HEREIN OR WITH RESPECT TO FITNESS FOR ANY PARTICULAR USE.