

# Material Safety Data Sheet (MSDS)

**Product Name:** Manganese Sulphate Monohydrate 32%

**MSDS Generate Date:** 20-05-2017

**Revision Date:** 30-12-2024

## Supplier:

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## 1. Identification of the Substance/Preparation and Company

- Product name: Manganese Sulphate Monohydrate 32%
- Synonyms: Manganous sulfate monohydrate solution (32% active)
- Chemical formula:  $\text{MnSO}_4 \cdot \text{H}_2\text{O}$
- Recommended uses: Fertilizer micronutrient, feed additive, industrial/laboratory reagent.

## 2. Hazard Identification

- GHS Classification: Eye Irritant Category 2, Acute Toxicity (Oral) Category 4, Specific Target Organ Toxicity (Repeated Exposure) Category 2.
- Hazard statements: Harmful if swallowed. Causes serious eye irritation. Prolonged/repeated exposure may damage the central nervous system.
- Precautionary statements: Avoid inhalation, ingestion, and contact with skin/eyes. Use PPE. Avoid release to environment.

### 3. Composition / Information on Ingredients

- **Manganese(II) Sulphate Monohydrate ( $\text{MnSO}_4 \cdot \text{H}_2\text{O}$ ): 32% w/w**
  - Water and minor impurities: Balance
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### 4. First Aid Measures

- **Inhalation:** Move to fresh air. Provide oxygen if breathing is difficult. Seek medical help if symptoms persist.
  - **Skin contact:** Wash thoroughly with soap and water. Remove contaminated clothing.
  - **Eye contact:** Rinse immediately with plenty of water for 15 minutes. Seek medical attention.
  - **Ingestion:** Rinse mouth. Do not induce vomiting. Seek medical attention immediately.
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### 5. Fire Fighting Measures

- Suitable extinguishing media: Water spray, foam, dry chemical,  $\text{CO}_2$ .
  - Non-flammable but may release toxic gases ( $\text{SO}_x$ , Mn oxides) when heated.
  - Firefighters: Use self-contained breathing apparatus (SCBA).
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### 6. Accidental Release Measures

- Use protective equipment. Avoid breathing dust/mist.
  - Contain and collect spillage with inert absorbent.
  - Prevent product from entering drains, soil, or waterways.
  - Wash contaminated area with plenty of water.
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### 7. Handling and Storage

- **Handling:** Avoid direct contact and inhalation. Ensure adequate ventilation.
- **Storage:** Store in tightly sealed containers in a cool, dry, well-ventilated place. Keep away from strong oxidizers/reducers.

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## 8. Exposure Controls / Personal Protection

- **Engineering controls:** Local exhaust ventilation recommended.
  - **Personal protection:**
    - Respiratory: Approved respirator if exposure limits exceeded.
    - Eyes: Chemical safety goggles/face shield.
    - Skin: Chemical-resistant gloves/clothing.
  - **Hygiene:** Wash hands before breaks and after handling.
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## 9. Physical and Chemical Properties

- Appearance: Pale pink crystalline solid or clear solution (32% solution).
  - Odor: Odorless
  - Solubility: Fully soluble in water
  - pH (solution): Slightly acidic
  - Melting/boiling point: Not applicable to solution; solid melts ~700 °C (decomposes).
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## 10. Stability and Reactivity

- Stable under normal handling/storage.
  - Avoid strong oxidizers, bases, and reducing agents.
  - Decomposition products: Sulfur oxides, manganese oxides.
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## 11. Toxicological Information

- Acute toxicity: Harmful if swallowed.
- Effects of exposure: Eye irritation, respiratory irritation, nausea, headache.

- Chronic exposure: Prolonged inhalation of manganese compounds may cause neurological disorder (manganism).
  - Routes of exposure: Inhalation, ingestion, skin/eye contact.
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## 12. Ecological Information

- Harmful to aquatic life in high concentrations.
  - Soluble and mobile in water.
  - Not biodegradable (inorganic substance).
  - May accumulate in sediments.
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## 13. Disposal Considerations

- Dispose of in accordance with local/regional regulations.
  - Do not discharge into drains or waterways.
  - Packaging should be rinsed and disposed of safely.
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## 14. Transport Information (Detailed)

**General Guidance:** Transport classification depends on packaging, form (solid vs. solution), and local regulations.

- **UN Number:** UN3077 (if classified as environmentally hazardous)
- **Proper Shipping Name:** Environmentally hazardous substance, solid, n.o.s. (contains manganese sulphate)
- **Class:** 9 – Miscellaneous dangerous goods
- **Packing Group:** III (if classified under UN3077)
- **Marine pollutant:** Yes, if UN3077 applies

**Modes of transport:**

- **IMDG (Sea):** Classified as Class 9, Marine Pollutant if bulk; otherwise often shipped as non-dangerous goods in small packages.
- **IATA (Air):** May be restricted. If classified as UN3077, follow IATA DGR — cargo aircraft only in certain cases.
- **ADR/RID (Road/Rail):** Class 9, PG III when UN3077 applies.

#### **Precautions:**

- Use leak-proof, corrosion-resistant packaging.
  - Prevent release to environment during loading/unloading.
  - Mark containers with hazard class, UN number, and "Environmentally Hazardous" label if required.
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### **15. Regulatory Information**

- Classified and labeled according to GHS and local regulatory frameworks.
  - Check compliance with local chemical inventories (e.g., REACH, TSCA, etc.).
  - Observe national workplace exposure limits where applicable.
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### **16. Other Information**

- **Disclaimer:** The information is believed accurate but provided without warranty. Users are responsible for ensuring suitability for intended use and compliance with applicable regulations.
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