

# Safety Data Sheet (SDS)

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## Industrial Grade Manganese Carbonate for Desulfurization

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Revision Date: 2026-03-28

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### 1. Identification

**Product Identifier:** Industrial Grade Manganese Carbonate ( $\text{MnCO}_3$ ) for Desulfurization

#### Recommended Use of the Chemical and Restrictions on Use:

- **Recommended Use:** Reactive manganese source in flue gas desulfurization (FGD) systems,  $\text{SO}_2$  absorption, acid neutralization, manganese recovery processes, power plant emission control, metallurgical off-gas treatment, chemical processing plants.
- **Restrictions on Use:** For industrial use only. Not for food, drug, or household use.

#### Supplier Details:

- **Company Name:** BTLnewmaterial
- **Address:** Room 706, No. 154, Wuyi East Road, Niezhou Residential Committee, Caizichi Sub-district Office, Leiyang City, Hengyang City, Hunan Province, China
- **Email:** lixifirm@outlook.com
- **Phone/WhatsApp:** +8618273793022
- **Website:** manganesesupply.com

**Emergency Phone Number:** +8618273793022 (General)

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## 2. Hazard(s) Identification

### GHS Classification:

- **Acute Toxicity (Oral):** Category 4 [1]
- **Specific Target Organ Toxicity - Repeated Exposure:** Category 2 (Central Nervous System, Lungs) [1]

### Hazard Pictograms:

- GHS07 (Exclamation Mark) - Harmful if swallowed
- GHS08 (Health Hazard) - May cause damage to organs through prolonged or repeated exposure

**Signal Word:** Warning

### Hazard Statements:

- H302: Harmful if swallowed.
- H373: May cause damage to organs (Central Nervous System, Lungs) through prolonged or repeated exposure.

### Precautionary Statements:

- **Prevention:**
    - P260: Do not breathe dust/fume/gas/mist/vapours/spray.
    - P264: Wash hands thoroughly after handling.
    - P270: Do not eat, drink or smoke when using this product.
  - **Response:**
    - P301 + P312: IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
    - P330: Rinse mouth.
    - P314: Get medical advice/attention if you feel unwell.
  - **Disposal:**
    - P501: Dispose of contents/container in accordance with local/regional/national/international regulations.
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### 3. Composition/Information on Ingredients

**Substance:** Manganese Carbonate (MnCO<sub>3</sub>)

Chemical Name	Common Name	CAS Number	Concentration (Typical)
Manganese Carbonate	MnCO <sub>3</sub>	598-62-9	≥ 98%

#### Impurities/Stabilizing Additives:

Impurity	Concentration (Typical)
Iron (Fe)	≤ 0.1%
Calcium (Ca)	≤ 0.3%
Magnesium (Mg)	≤ 0.3%
Lead (Pb)	≤ 20 ppm
Arsenic (As)	≤ 10 ppm
Cadmium (Cd)	≤ 5 ppm

### 4. First-Aid Measures

#### Description of Necessary First-Aid Measures:

- **Inhalation:** If inhaled, remove person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.
- **Skin Contact:** Wash off with soap and plenty of water. Get medical attention if irritation develops and persists.
- **Eye Contact:** Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. Remove contact lenses, if present and easy to do. Continue rinsing.
- **Ingestion:** Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Call a poison center or doctor/physician if you feel unwell.

#### Most Important Symptoms/Effects, Acute and Delayed:

- **Acute:** May cause irritation to eyes, skin, and respiratory tract. Harmful if swallowed.
- **Delayed:** Prolonged or repeated exposure to manganese dusts may cause damage to the central nervous system (manganism) and lungs.

**Indication of Immediate Medical Attention and Special Treatment Needed, if Necessary:**

- Treat symptomatically. Medical observation is recommended for 24-48 hours after overexposure.
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## **5. Fire-Fighting Measures**

**Suitable Extinguishing Media:**

- Use water spray, alcohol-resistant foam, dry chemical, or carbon dioxide.

**Specific Hazards Arising from the Chemical:**

- Non-combustible. However, in a fire, it may decompose to produce hazardous fumes of manganese oxides and carbon oxides.

**Special Protective Equipment and Precautions for Firefighters:**

- Wear self-contained breathing apparatus (SCBA) for firefighting if necessary. Use personal protective equipment (PPE).
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## **6. Accidental Release Measures**

**Personal Precautions, Protective Equipment, and Emergency Procedures:**

- Avoid dust formation. Avoid breathing dust. Ensure adequate ventilation. Use personal protective equipment. Evacuate personnel to safe areas.

**Environmental Precautions:**

- Do not let product enter drains. Do not allow material to contaminate ground water system.

**Methods and Materials for Containment and Cleaning Up:**

- Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.
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## 7. Handling and Storage

### Precautions for Safe Handling:

- Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed. Do not eat, drink or smoke when using this product.

### Conditions for Safe Storage, Including Any Incompatibilities:

- Store in a cool, dry, well-ventilated place. Keep container tightly closed. Store away from incompatible materials (e.g., strong acids).
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## 8. Exposure Controls/Personal Protection

### Control Parameters:

- **OSHA Permissible Exposure Limit (PEL):** Manganese compounds (as Mn) - 5 mg/m<sup>3</sup> (ceiling) [2]
- **ACGIH Threshold Limit Value (TLV):** Manganese, elemental and inorganic compounds (as Mn) - 0.02 mg/m<sup>3</sup> (respirable fraction), 0.1 mg/m<sup>3</sup> (inhalable fraction) [3]

### Appropriate Engineering Controls:

- Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday. Use local exhaust ventilation to keep airborne concentrations below the recommended exposure limits.

### Individual Protection Measures (Personal Protective Equipment - PPE):

- **Eye/Face Protection:** Safety glasses with side-shields conforming to EN166. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).
- **Skin Protection:** Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid

skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

- **Body Protection:** Impervious clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.
  - **Respiratory Protection:** For nuisance exposures use type P95 (US) or type P1 (EU EN 143) particle respirator. For higher level protection use type OV/AG/P99 (US) or type ABEK-P2 (EU EN 143) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).
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## 9. Physical and Chemical Properties

**Appearance:** Light pink or tan powder

**Odor:** Odorless

**Odor Threshold:** Not applicable

**pH:** Typically slightly alkaline in slurry (around 7-8) but reacts in acidic FGD environments.

**Melting Point/Freezing Point:** Decomposes before melting (approx. >200°C)

**Initial Boiling Point and Boiling Range:** Not applicable (decomposes)

**Flash Point:** Not applicable (inorganic solid)

**Evaporation Rate:** Not applicable (solid)

**Flammability (Solid, Gas):** Non-flammable

**Upper/Lower Flammability or Explosive Limits:** Not applicable

**Vapor Pressure:** Not applicable (solid)

**Vapor Density:** Not applicable (solid)

**Relative Density (Water = 1):** 3.7 g/cm<sup>3</sup> (approx.) [4]

**Bulk Density:** 0.9–1.2 g/cm<sup>3</sup>

**Solubility:** Practically insoluble in water (0.0065 g/L at 20°C) [4], soluble in dilute acids with effervescence (CO<sub>2</sub> release).

**Partition Coefficient n-octanol/water (log Kow):** Not applicable (inorganic substance)

**Auto-Ignition Temperature:** Not applicable

**Decomposition Temperature:** >200°C (Decomposes to Manganese Oxide (MnO) and CO<sub>2</sub>)

**Viscosity:** Not applicable (solid)

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## 10. Stability and Reactivity

### Reactivity:

- Reacts with strong acids, releasing carbon dioxide.

### Chemical Stability:

- Stable under recommended storage conditions.

### Possibility of Hazardous Reactions:

- No hazardous reactions known under normal conditions of use.

### Conditions to Avoid:

- Exposure to moisture, strong acids.

### Incompatible Materials:

- Strong acids, strong oxidizing agents.

### Hazardous Decomposition Products:

- In a fire, may produce hazardous fumes of manganese oxides and carbon oxides. Under normal decomposition, manganese oxides and carbon dioxide.
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# 11. Toxicological Information

## Information on Toxicological Effects:

- **Acute Toxicity:**
  - **Oral (LD<sub>50</sub>):** 9000 mg/kg (rat) [5]. Harmful if swallowed.
  - **Dermal (LD<sub>50</sub>):** No data available.
  - **Inhalation (LC<sub>50</sub>):** No data available.
- **Skin Corrosion/Irritation:** May cause mild skin irritation.
- **Serious Eye Damage/Irritation:** May cause mild eye irritation.
- **Respiratory or Skin Sensitization:** Not expected to be a respiratory or skin sensitizer.
- **Germ Cell Mutagenicity:** No data available. Not expected to be mutagenic.
- **Carcinogenicity:**
  - IARC: No component 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 component 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 component 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 component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
- **Reproductive Toxicity:** No data available. Not expected to be a reproductive toxicant.
- **Specific Target Organ Toxicity - Single Exposure:** No data available. May cause respiratory irritation.
- **Specific Target Organ Toxicity - Repeated Exposure:** Prolonged or repeated exposure to manganese dusts may cause damage to the central nervous system

(manganism) and lungs [1].

- **Aspiration Hazard:** Not an aspiration hazard.
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## 12. Ecological Information

### Ecotoxicity:

- **Fish:** No data available.
- **Daphnia and other aquatic invertebrates:** No data available.
- **Algae:** No data available.
- Manganese compounds can be harmful to aquatic life in high concentrations.

### Persistence and Degradability:

- Manganese carbonate is an inorganic compound and is not expected to be readily biodegradable. It can undergo chemical transformations in the environment.

### Bioaccumulative Potential:

- Manganese is an essential trace element, but excessive levels can accumulate in organisms. Bioaccumulation potential is generally low for inorganic manganese compounds.

### Mobility in Soil:

- Low mobility in soil due to low water solubility. However, in acidic conditions, manganese can become more mobile.

### Other Adverse Effects:

- No other adverse environmental effects are expected from this product.
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## 13. Disposal Considerations

### Waste Treatment Methods:

- **Product:** Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dispose of contents/container in accordance with local/regional/national/international regulations.
  - **Contaminated Packaging:** Dispose of as unused product.
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## 14. Transport Information

### DOT (US), IMDG, IATA:

- **UN Number:** Not regulated as a hazardous material for transport.
  - **UN Proper Shipping Name:** Not applicable.
  - **Transport Hazard Class(es):** Not applicable.
  - **Packing Group:** Not applicable.
  - **Environmental Hazards:** Not a marine pollutant.
  - **Special Precautions for User:** No special precautions required.
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## 15. Regulatory Information

### Safety, Health and Environmental Regulations Specific for the Product:

- **USA Federal Regulations:**
  - **SARA 302 Components:** No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.
  - **SARA 313 Components:** The following components are subject to reporting levels established by SARA Title III, Section 313:
    - Manganese compounds (CAS No. 598-62-9, as Mn) - Concentration:  $\geq$  44% Mn
  - **SARA <sup>311</sup>/<sub>312</sub> Hazards:** Acute Health Hazard, Chronic Health Hazard.
  - **California Prop 65:** This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

- **European Union Regulations:**

- **REACH Status:** This substance is registered under REACH. (Registration number will vary by supplier and specific form of manganese carbonate, general statement for illustrative purposes).
  - **EC No.:** 209-933-0 (for Manganese Carbonate)
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## 16. Other Information

**Date of Preparation:** 2026-03-28

**Date of Last Revision:** 2026-03-28

### Key/Legend:

- ACGIH: American Conference of Governmental Industrial Hygienists
- CAS: Chemical Abstracts Service
- GHS: Globally Harmonized System of Classification and Labelling of Chemicals
- IARC: International Agency for Research on Cancer
- IMDG: International Maritime Dangerous Goods
- IATA: International Air Transport Association
- LD<sub>50</sub>: Lethal Dose, 50%
- LC<sub>50</sub>: Lethal Concentration, 50%
- NIOSH: National Institute for Occupational Safety and Health
- NTP: National Toxicology Program
- OSHA: Occupational Safety and Health Administration
- PEL: Permissible Exposure Limit
- PPE: Personal Protective Equipment
- SARA: Superfund Amendments and Reauthorization Act
- SCBA: Self-Contained Breathing Apparatus
- STOT: Specific Target Organ Toxicity
- TLV: Threshold Limit Value
- UN: United Nations

**References:** [1] ECHA - European Chemicals Agency. Manganese carbonate. Available at: <https://echa.europa.eu/substance-information/-/substanceinfo/100.009.031> [2] OSHA Annotated Table Z-1. Available at: <https://www.osha.gov/annotated-pels/table-z-1> [3] ACGIH TLVs and BEIs. Available at: <https://www.acgih.org/> [4] PubChem. Manganese Carbonate. Available at: <https://pubchem.ncbi.nlm.nih.gov/compound/Manganese-carbonate> [5] Sigma-Aldrich. Manganese(II) carbonate. Available at: <https://www.sigmaaldrich.com/US/en/product/aldrich/229928>

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