

MATERIAL SAFETY DATA SHEET (MSDS)

Manganese Carbonate (Industrial Grade for Metal Treatment)

SECTION 1: Identification

- **Product Name:** Manganese Carbonate (Industrial Grade)
 - **CAS Number:** 598-62-9
 - **Chemical Formula:** MnCO_3
 - **Recommended Use:** Industrial metal surface treatment, metal processing chemicals, finishing formulations, and chemical synthesis.
 - **Manufacturer / Supplier:** 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
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SECTION 2: Hazard(s) Identification

- **GHS Classification:**
 - Specific Target Organ Toxicity - Repeated Exposure (STOT-RE): Category 2 (Inhalation/Oral, affects central nervous system)
 - Hazardous to the Aquatic Environment - Chronic Hazard: Category 4
- **Signal Word:** Warning
- **Hazard Statements:**
 - H373: May cause damage to organs (brain, central nervous system) through prolonged or repeated exposure.
 - H413: May cause long-lasting harmful effects to aquatic life.
- **Precautionary Statements:**
 - P260: Do not breathe dust, fume, gas, mist, vapours, or spray.

- P273: Avoid release to the environment.
- P314: Get medical advice/attention if you feel unwell.
- P501: Dispose of contents/container in accordance with local, regional, and national regulations.

SECTION 3: Composition / Information on Ingredients

Chemical Name	Synonyms	CAS Number	Weight %
Manganese Carbonate	Manganese(II) carbonate, Manganous carbonate	598-62-9	$\geq$ 98.0%
Iron (as impurity)	Iron compounds	7439-89-6	$\leq$ 0.1%
Calcium (as impurity)	Calcium compounds	7440-70-2	$\leq$ 0.3%
Magnesium (as impurity)	Magnesium compounds	7439-95-4	$\leq$ 0.3%

SECTION 4: First-Aid Measures

- **Inhalation:** Remove victim to fresh air. If not breathing, give artificial respiration or oxygen by trained personnel. Get immediate medical attention.
- **Skin Contact:** Wash thoroughly with soap and water. Remove contaminated clothing and shoes. Wash clothing before reuse. Get medical attention if irritation develops or persists.
- **Eye Contact:** Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Remove contact lenses if present and easy to do. Get medical attention.
- **Ingestion:** Never give anything by mouth to an unconscious person. Do not induce vomiting without medical advice. Rinse mouth thoroughly with water. Get immediate medical attention.

SECTION 5: Fire-Fighting Measures

- **Suitable Extinguishing Media:** Use water spray, alcohol-resistant foam, dry chemical, or carbon dioxide. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
 - **Specific Hazards Arising from the Chemical:** Carbon oxides (CO, CO₂) and manganese oxides (MnO_x) may be released under fire conditions.
 - **Special Protective Equipment and Precautions for Firefighters:** Wear self-contained breathing apparatus (SCBA) and full protective gear for firefighting. Prevent runoff from entering drains or water courses.
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SECTION 6: Accidental Release Measures

- **Personal Precautions:** Use personal protective equipment. Avoid dust formation. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.
 - **Environmental Precautions:** Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.
 - **Clean-Up Methods:** Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.
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SECTION 7: Handling and Storage

- **Handling:** Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed. Follow standard industrial hygiene practices.
 - **Storage:** Store in original container. Keep tightly closed in a dry, cool, and well-ventilated place. Keep away from incompatible materials such as strong acids and oxidizing agents.
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SECTION 8: Exposure Controls / Personal Protection

- **Control Parameters:**
 - Manganese compounds (as Mn): OSHA PEL (ceiling) = 5.0 mg/m³; ACGIH TLV (TWA) = 0.1 mg/m³ (inhalable fraction).
- **Engineering Controls:** Use local exhaust ventilation or other engineering controls to maintain airborne concentrations below recommended exposure limits.
- **Personal Protective Equipment (PPE):**

- **Eye/Face Protection:** Safety glasses with side-shields conforming to EN 166 or equivalent.
- **Skin Protection:** Handle with gloves. Protective clothing resistant to chemical penetration.
- **Respiratory Protection:** Where risk assessment shows air-purifying respirators are appropriate, use a particulate respirator type N95 or P2.

SECTION 9: Physical and Chemical Properties

Property	Value / Characteristic
Appearance	Light pink to brownish powder
Odor	Odorless
pH (in aqueous suspension)	Neutral to slightly alkaline (6.0–8.0)
Melting Point / Freezing Point	Decomposes prior to melting ($> 200^{\circ}\text{C}$)
Boiling Point / Range	Not applicable
Flash Point	Not applicable
Evaporation Rate	Not applicable
Flammability	Non-flammable
Vapor Pressure	Not applicable
Vapor Density	Not applicable
Relative Density (Bulk Density)	0.8–1.2 g/cm ³ (True density approx. 3.12 g/cm ³)
Solubility	Insoluble in water; soluble in dilute acids ($\geq 95.0\%$)
Partition Coefficient (n-octanol/water)	Not applicable for inorganic substances
Auto-Ignition Temperature	Not applicable
Decomposition Temperature	$> 200^{\circ}\text{C}$

SECTION 10: Stability and Reactivity

- **Reactivity:** Stable under recommended storage and handling conditions.
- **Chemical Stability:** Stable under normal temperatures and pressures.
- **Possibility of Hazardous Reactions:** Reacts with strong acids to liberate carbon dioxide (CO_2).
- **Incompatible Materials:** Strong oxidizing agents, strong acids.
- **Hazardous Decomposition Products:** Carbon oxides, toxic manganese oxide fumes under extreme thermal decomposition.

SECTION 11: Toxicological Information

- **Acute Toxicity:** Oral LD50 (Rat): $> 2000 \text{ mg/kg}$ (estimated based on structural analogues).
- **Skin Corrosion/Irritation:** May cause mechanical skin irritation.
- **Serious Eye Damage/Irritation:** May cause mechanical eye irritation.
- **Respiratory or Skin Sensitization:** Not classified as a skin sensitizer.
- **Carcinogenicity:** Not listed as a carcinogen by IARC, NTP, or OSHA.
- **Specific Target Organ Toxicity (STOT) - Repeated Exposure:** Prolonged or repeated inhalation/ingestion of manganese dust may cause manganism, affecting the central nervous system.

SECTION 12: Ecological Information

- **Ecotoxicity:** May cause long-term adverse effects in the aquatic environment due to manganese accumulation.
- **Persistence and Degradability:** Inorganic substance; biodegradation is not applicable.
- **Bioaccumulative Potential:** Low potential for bioaccumulation in aquatic systems.
- **Mobility in Soil:** Low mobility in solid matrix; soluble under acidic soil conditions.

SECTION 13: Disposal Considerations

- **Waste Treatment Methods:** Dispose of in accordance with local, state, and national environmental regulations. Do not discharge waste into sewer systems or natural

waterways. Contaminated packaging should be emptied and disposed of as unused product.

SECTION 14: Transport Information

- **UN Number:** Not regulated as a dangerous good for transport (ADR/RID, IMDG, IATA).
 - **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:** Handle with care; prevent dusting during loading and transport.
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SECTION 15: Regulatory Information

- **Safety, Health and Environmental Regulations:**
 - **TSCA (USA):** Listed on the TSCA Inventory.
 - **EINECS (EU):** Listed on the European Inventory of Existing Commercial Chemical Substances (209-946-4).
 - **REACH (EU):** Compliant with relevant registration requirements.
 - **Other National Regulations:** Observe local chemical management legislation.
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SECTION 16: Other Information

- **Revision Date:** August 12, 2026
- **Document Version:** 1.0
- **Disclaimer:** The information provided in this Material Safety Data Sheet is correct to the best of our knowledge, information, and belief at the date of its publication. The information given is designed only as guidance for safe handling, use, processing, storage, transportation, disposal, and release. It is not to be considered a warranty or quality specification.