

Safety Data Sheet (SDS)

Manganese Dioxide for Specialty Magnetic Coatings

1. Identification

Product Name: Manganese Dioxide for Specialty Magnetic Coatings **Product Use:** Magnetic coating formulations, functional electronic coatings, anti-static industrial coatings, electromagnetic shielding coatings.

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

2. Hazard(s) Identification

GHS Classification: Acute toxicity, Oral (Category 4); Acute toxicity, Inhalation (Category 4) **Signal Word:** Warning **Hazard Statements:** H302 + H332: Harmful if swallowed or if inhaled **Precautionary Statements:** P261: Avoid breathing dust/fume/gas/mist/vapors/spray. P264: Wash skin thoroughly after handling. P270: Do not eat, drink or smoke when using this product. P271: Use only outdoors or in a well-ventilated area. P301 + P312 + P330: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. Rinse mouth. P304 + P340 + P312: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell. P501: Dispose of contents/container to an approved waste disposal plant.

3. Composition/Information on Ingredients

Chemical Name	CAS No.	Concentration (wt%)
Manganese Dioxide (MnO ₂)	1313-13-9	90-95%

4. First-Aid Measures

Inhalation: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, give artificial respiration. Get medical attention if symptoms persist. **Skin Contact:** Wash with plenty of soap and water. Remove contaminated clothing and wash before reuse. Get medical attention if irritation develops and persists. **Eye Contact:** Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation persists. **Ingestion:** Rinse mouth. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

5. Fire-Fighting Measures

Suitable Extinguishing Media: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Water spray, dry chemical, foam, carbon dioxide. **Specific Hazards Arising from the Chemical:** Not considered to be a fire hazard. May decompose at high temperatures to produce toxic fumes of manganese oxides. **Special Protective Equipment and Precautions for Firefighters:** Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear.

6. Accidental Release Measures

Personal Precautions, Protective Equipment, and Emergency Procedures: Ensure adequate ventilation. Use personal protective equipment as required. Avoid dust formation. Avoid breathing dust. **Environmental Precautions:** Do not allow product to enter drains, water courses or soil. If contamination of rivers and lakes occurs, inform appropriate authorities. **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.

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. Wash thoroughly after handling. **Conditions for Safe Storage, Including Any Incompatibilities:** Store in a dry, well-ventilated area away from moisture and strong

reducing agents. Keep container tightly closed. Properly sealed containers help maintain particle stability and prevent contamination. Under proper storage conditions, manganese dioxide powder typically maintains stable properties for 24 months.

8. Exposure Controls/Personal Protection

Control Parameters:

- **OSHA PEL (TWA):** 5 mg/m³ (Manganese compounds, as Mn)
- **ACGIH TLV (TWA):** 0.1 mg/m³ (respirable fraction, as Mn); 0.02 mg/m³ (thoracic fraction, as Mn)
- **NIOSH REL (TWA):** 1 mg/m³ (Manganese compounds, as Mn); 3 mg/m³ (STEL, as Mn) **Engineering Controls:** Ensure adequate ventilation, especially in confined areas. Eyewash stations and safety showers should be available. **Individual Protection Measures:**

- **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. Full contact: Material: Nitrile rubber, Minimum layer thickness: 0.11 mm, Break through time: 480 min. Splash contact: Material: Nitrile rubber, Minimum layer thickness: 0.11 mm, Break through time: 480 min. Body Protection: Complete suit protecting against chemicals. 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).
- **General Hygiene Considerations:** Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of the

workday.

9. Physical and Chemical Properties

Appearance: Black powder **Odor:** Odorless **Odor Threshold:** Not applicable **pH:** No data available **Melting Point/Freezing Point:** Melting point/range: 535 °C (995 °F) - dec
Initial Boiling Point and Boiling Range: No data available **Flash Point:** Not applicable **Evaporation Rate:** Not applicable **Flammability (solid, gas):** Non-flammable **Upper/Lower Flammability or Explosive Limits:** Not applicable **Vapor Pressure:** Not applicable **Vapor Density:** Not applicable **Relative Density (Water = 1):** 5.026 g/cm³ **Bulk Density:** 0.45–0.75 g/cm³ **Solubility(ies):** No data available **Partition Coefficient n-octanol/water (log value):** Not applicable **Auto-ignition Temperature:** Not applicable **Decomposition Temperature:** No data available **Viscosity:** Not applicable (solid) **Particle Size (D50):** 2–8 µm **Surface Area:** 35–70 m²/g **Moisture:** ≤ 1.0% **Crystal Phase:** Predominantly γ-MnO₂

10. Stability and Reactivity

Reactivity: No data available **Chemical Stability:** Stable under recommended storage conditions. **Possibility of Hazardous Reactions:** No data available **Conditions to Avoid:** No data available **Incompatible Materials:** Strong acids, Strong reducing agents, Organic materials **Hazardous Decomposition Products:** Other decomposition products - No data available. In the event of fire: see section 5.

11. Toxicological Information

Acute Toxicity: No data available (Oral, Inhalation, Dermal) **Skin Corrosion/Irritation:** No data available **Serious Eye Damage/Irritation:** No data available **Respiratory or Skin Sensitization:** No data available **Germ Cell Mutagenicity:** No data available **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 **STOT-Single Exposure:** No data available **STOT-Repeated Exposure:** No data available **Aspiration Hazard:** No data available

12. Ecological Information

Ecotoxicity: No data available **Persistence and Degradability:** No data available
Bioaccumulative Potential: No data available **Mobility in Soil:** No data available
Other Adverse Effects: No data available

13. Disposal Considerations

Waste Treatment Methods: Dispose of in accordance with local, regional, national, and international regulations. Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport Information

UN Number: Not regulated as dangerous goods **UN Proper Shipping Name:** Not regulated as dangerous goods **Transport Hazard Class(es):** Not regulated as dangerous goods **Packing Group:** Not regulated as dangerous goods **Environmental Hazards:** No data available **Special Precautions for User:** No data available

15. Regulatory Information

Safety, Health and Environmental Regulations Specific for the Product:

- **SARA 302 Components:** No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.
- **SARA 313 Components:** Manganese dioxide (CAS-No. 1313-13-9) is subject to reporting levels established by SARA Title III, Section 313.
- **SARA ³¹¹/₃₁₂ Hazards:** Acute Health Hazard, Chronic Health Hazard.
- **Massachusetts Right to Know Components:** No components are subject to the Massachusetts Right to Know Act.

- **Pennsylvania Right to Know Components:** Manganese dioxide (CAS-No. 1313-13-9).
- **New Jersey Right to Know Components:** Manganese dioxide (CAS-No. 1313-13-9).
- **California Prop. 65 Components:** This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. Other Information

Date of Preparation: 2026-03-13 **Date of Last Revision:** (To be determined)

Disclaimer: The information provided in this 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 a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.