

# Safety Data Sheet (SDS): MnO<sub>2</sub> Pigment for High-Heat Resistant Coatings

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**Revision Date:** 2026-03-12

## Section 1: Identification

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**Product Identifier:** MnO<sub>2</sub> Pigment for High-Heat Resistant Coatings **Other Means of Identification:** Manganese Dioxide, Manganese(IV) Oxide, Pyrolusite **Recommended Use:** Inorganic pigment for high-temperature industrial coatings, refractory paints, protective metal coatings, ceramic and enamel coatings, infrared control coatings. **Restrictions on Use:** Not for food, drug, or cosmetic 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)

## Section 2: Hazard(s) Identification

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### GHS Classification:

- Acute Toxicity (Oral) - Category 4
- Acute Toxicity (Inhalation) - Category 4
- Specific Target Organ Toxicity - Repeated Exposure (Brain) - Category 2

**Signal Word:** Warning

**Hazard Statements:**

- H302 + H332: Harmful if swallowed or if inhaled.
- H373: May cause damage to organs (Brain) through prolonged or repeated exposure.

**Precautionary Statements:**

- **Prevention:**
  - P260: Do not breathe dust/fume/gas/mist/vapors/spray.
  - P264: Wash thoroughly after handling.
  - P270: Do not eat, drink or smoke when using this product.
  - P271: Use only outdoors or in a well-ventilated area.
- **Response:**
  - P301 + P312 + P330: IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth.
  - P304 + P340 + P312: IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell.
  - P314: Get medical advice/attention if you feel unwell.
- **Disposal:**
  - P501: Dispose of contents/container in accordance with local/regional/national/international regulations.

## Section 3: Composition/Information on Ingredients

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Chemical Name	Common Name	CAS Number	Concentration (wt%)
Manganese Dioxide	Manganese(IV) Oxide	1313-13-9	90-98

## Section 4: First-Aid Measures

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

- **General Advice:** Consult a physician. Show this safety data sheet to the doctor in attendance.
- **If Inhaled:** If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.
- **In Case of Skin Contact:** Wash off with soap and plenty of water. Consult a physician.
- **In Case of Eye Contact:** Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.
- **If Swallowed:** Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

**Most Important Symptoms/Effects, Acute and Delayed:** The most important known symptoms and effects are described in the labelling (Section 2) and/or in Section 11.

**Indication of Immediate Medical Attention and Special Treatment Needed:** No data available.

## Section 5: Fire-Fighting Measures

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**Suitable Extinguishing Media:** Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

**Specific Hazards Arising from the Chemical:** Manganese oxides.

**Special Protective Equipment and Precautions for Firefighters:** Wear self-contained breathing apparatus for firefighting if necessary.

## Section 6: Accidental Release Measures

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**Personal Precautions, Protective Equipment and Emergency Procedures:** Use personal protective equipment. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

**Environmental Precautions:** Do not let product enter drains.

**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.

## Section 7: Handling and Storage

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**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. For precautions see section 2.2.

**Conditions for Safe Storage, Including Any Incompatibilities:** Store in sealed containers in a dry environment away from moisture. Keep container tightly closed in a dry and well-ventilated place. Under proper storage conditions, MnO<sub>2</sub> pigment generally has a shelf life of at least 24 months.

## Section 8: Exposure Controls/Personal Protection

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### Control Parameters:

- **Occupational Exposure Limits:**
  - **USA OSHA Permissible Exposure Limit (PEL):** 5 mg/m<sup>3</sup> (as Mn, Ceiling)
  - **USA ACGIH Threshold Limit Value (TLV):** 0.02 mg/m<sup>3</sup> (respirable fraction, as Mn), 0.1 mg/m<sup>3</sup> (inhalable fraction, as Mn)

**Appropriate Engineering Controls:** Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday. Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits.

### Individual Protection Measures, Such as 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:** 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).

## Section 9: Physical and Chemical Properties

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**Appearance:** Dark brown to black powder **Odor:** Odorless **Odor Threshold:** Not applicable **pH:** Not available (typically neutral to slightly alkaline in aqueous suspension) **Melting Point/Freezing Point:** ~535 °C (decomposes) **Initial Boiling Point and Boiling Range:** Not applicable (decomposes before boiling) **Flash Point:** Not applicable **Evaporation Rate:** Not applicable **Flammability (solid, gas):** Non-flammable, but may act as an oxidizer. **Upper/Lower Flammability or Explosive Limits:** Not applicable **Vapor Pressure:** Not applicable **Vapor Density:** Not applicable **Relative Density:** 4.4 - 5.0 g/cm<sup>3</sup> (approximate, varies with crystal phase) **Bulk Density:** 0.6–1.0 g/cm<sup>3</sup> **Solubility(ies):** Insoluble in water. Soluble in strong acids with reduction. **Partition Coefficient n-octanol/water (log value):** Not applicable **Auto-Ignition Temperature:** Not applicable **Decomposition Temperature:** ~535 °C **Viscosity:** Not applicable (solid) **Particle Size (D50):** 1–10 µm **Specific Surface Area:** 20–60 m<sup>2</sup>/g **Moisture:** ≤1.0% **Crystal Phase:** Predominantly γ-MnO<sub>2</sub>

## Section 10: Stability and Reactivity

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**Reactivity:** May react with strong reducing agents and strong acids.

**Chemical Stability:** Stable under recommended storage conditions.

**Possibility of Hazardous Reactions:** No data available.

**Conditions to Avoid:** Incompatible materials, moisture.

**Incompatible Materials:** Strong reducing agents, strong acids, easily oxidizable materials.

**Hazardous Decomposition Products:** Other decomposition products - No data available. In the event of fire: see Section 5.

## Section 11: Toxicological Information

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### Information on Toxicological Effects:

- **Acute Toxicity:**
  - **Oral (LD50):** >3478 mg/kg (Rat) - Harmful if swallowed.
  - **Inhalation (LC50):** >1.5 mg/L (Rat, 4h) - Harmful if inhaled (as dust/mist).
- **Skin Corrosion/Irritation:** May cause mild skin irritation.
- **Serious Eye Damage/Irritation:** May cause eye irritation.
- **Respiratory or Skin Sensitization:** No data available.
- **Germ Cell Mutagenicity:** No data available.
- **Carcinogenicity:** Not classified as a carcinogen by IARC, NTP, or OSHA.
- **Reproductive Toxicity:** No data available.
- **STOT-Single Exposure:** No data available.
- **STOT-Repeated Exposure:** May cause damage to organs (Brain) through prolonged or repeated exposure (Manganism).
- **Aspiration Hazard:** No data available.

**Additional Information:** Chronic exposure to manganese dust or fumes can lead to manganism, a neurological disorder with symptoms similar to Parkinson's disease.

## Section 12: Ecological Information

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**Ecotoxicity:** No data available for the product itself. Manganese compounds can be harmful to aquatic life in high concentrations.

**Persistence and Degradability:** Inorganic substance, not readily biodegradable.

**Bioaccumulative Potential:** No data available.

**Mobility in Soil:** Insoluble in water, low mobility in soil.

**Other Adverse Effects:** No data available.

## Section 13: Disposal Considerations

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### 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. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.
- **Contaminated Packaging:** Dispose of as unused product.

## Section 14: Transport Information

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### 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 data available.

## Section 15: Regulatory Information

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### 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. 7439-96-5, applies to manganese in any form).
- **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.

## Section 16: Other Information

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### Full Text of H-Statements Referred to Under Sections 2 and 3:

- H302: Harmful if swallowed.
- H332: Harmful if inhaled.
- H373: May cause damage to organs (Brain) through prolonged or repeated exposure.

**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.