

Material Safety Data Sheet (MSDS)

Manganese Dioxide 90% (Enamel & Frits Grade)

Section 1: Identification of the Substance/Mixture and of the Company/Undertaking

Field	Information
Product Identifier	Manganese Dioxide 90% (Enamel & Frits Grade)
CAS Number	1313-13-9
UN Number	3137 (Oxidizing solid, n.o.s.)
Relevant Identified Uses	Industrial use as an oxidizing agent, colorant for enamel, frits, and ceramics.
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

Section 2: Hazards Identification

GHS Classification:

- Acute Toxicity, Oral (Category 4)
- Acute Toxicity, Inhalation (Category 4)

- **Specific Target Organ Toxicity – Repeated Exposure (Category 2) (Brain, Central Nervous System)**

GHS Label Elements:

- **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:**
 - P260: Do not breathe dust/fume/gas/mist/vapours/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/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.

Section 3: Composition/Information on Ingredients

Component	CAS No.	EC No.	Weight %
Manganese Dioxide (MnO ₂)	1313-13-9	215-202-6	90% – 92%
Iron Oxide (Fe ₂ O ₃)	1309-37-1	215-168-2	≤ 0.15%
Silica (SiO ₂)	7631-86-9	231-545-4	≤ 0.50%
Other Impurities	N/A	N/A	Balance

Section 4: First Aid Measures

- **Inhalation:** Remove to fresh air. If breathing is difficult, give oxygen. Seek medical attention if symptoms persist.

- **Skin Contact:** Wash with soap and plenty of water. Remove contaminated clothing.
 - **Eye Contact:** Flush eyes with water as a precaution. Seek medical advice if irritation develops.
 - **Ingestion:** Rinse mouth with water. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Call a physician.
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Section 5: Firefighting Measures

- **Extinguishing Media:** Use water spray, alcohol-resistant foam, dry chemical, or carbon dioxide.
 - **Special Hazards:** Manganese oxides. Not combustible but may intensify fire; oxidizer.
 - **Advice for Firefighters:** Wear self-contained breathing apparatus for firefighting if necessary.
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Section 6: Accidental Release Measures

- **Personal Precautions:** Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist, or gas. Ensure adequate ventilation.
 - **Environmental Precautions:** Do not let product enter drains.
 - **Methods for 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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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. Keep away from sources of ignition.
 - **Storage:** Store in a cool, dry, well-ventilated place. Keep container tightly closed. Keep away from combustible materials and strong reducing agents.
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Section 8: Exposure Controls/Personal Protection

- **Control Parameters:** TWA: 0.2 mg/m³ (as Mn) (ACGIH).
 - **Exposure Controls:**
 - **Respiratory Protection:** Dust respirator.
 - **Hand Protection:** Protective gloves.
 - **Eye Protection:** Safety glasses with side-shields.
 - **Skin and Body Protection:** Complete suit protecting against chemicals.
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Section 9: Physical and Chemical Properties

Property	Value
Physical State	Powder
Color	Black or Dark Brown
Odor	Odorless
pH (10% slurry)	6.5 – 8.0
Melting Point	535 °C (decomposes)
Density	5.026 g/cm ³ (solid density)
Bulk Density	0.60 – 0.90 g/cm ³
Solubility in Water	Insoluble

Section 10: Stability and Reactivity

- **Reactivity:** Stable under recommended storage conditions.
- **Chemical Stability:** Stable under recommended storage conditions.
- **Possibility of Hazardous Reactions:** Strong oxidizing agent.
- **Conditions to Avoid:** Heat, moisture, and incompatible materials.
- **Incompatible Materials:** Strong acids, strong reducing agents, organic materials, combustible materials.

- **Hazardous Decomposition Products:** Manganese oxides.
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Section 11: Toxicological Information

- **Acute Toxicity:** LD50 Oral - Rat - > 3,478 mg/kg.
 - **Skin Corrosion/Irritation:** No data available.
 - **Serious Eye Damage/Irritation:** No data available.
 - **Respiratory or Skin Sensitization:** 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.
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Section 12: Ecological Information

- **Toxicity:** No data available.
 - **Persistence and Degradability:** No data available.
 - **Bioaccumulative Potential:** No data available.
 - **Mobility in Soil:** No data available.
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Section 13: Disposal Considerations

- **Product:** Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.
 - **Contaminated Packaging:** Dispose of as unused product.
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Section 14: Transport Information

- **DOT (US):** UN number: 3137 Class: 5.1 Packing group: II (Oxidizing solid, n.o.s.)
 - **IMDG:** UN number: 3137 Class: 5.1 Packing group: II (Oxidizing solid, n.o.s.)
 - **IATA:** UN number: 3137 Class: 5.1 Packing group: II (Oxidizing solid, n.o.s.)
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Section 15: Regulatory Information

- **SARA 313 Components:** This material contains Manganese Dioxide (CAS 1313-13-9) which is subject to the reporting requirements of Section 313 of SARA Title III.
 - **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.
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Section 16: Other Information

- **Further Information:** The above information is believed to be correct but does not purport to be all-inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions.