

SAFETY DATA SHEET (SDS/MSDS)

Manganese Dioxide (MnO₂) as a Curing Agent for Liquid Polysulfides

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product Identifier

- **Product Name:** Manganese Dioxide (MnO₂) as a Curing Agent for Liquid Polysulfides
- **CAS Number:** 1313-13-9
- **EC Number:** 215-202-6
- **Molecular Formula:** MnO₂

1.2 Relevant Identified Uses of the Substance or Mixture and Uses Advised Against

- **Identified Uses:** Oxidizing agent and curing agent for liquid polysulfide sealants and coatings. Industrial use only.
- **Uses Advised Against:** No data available.

1.3 Details of the Supplier of the Safety Data Sheet

- **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:** +86 18273793022
- **Website:** manganesesupply.com

1.4 Emergency Telephone Number

- **Emergency Phone:** +86 18273793022 (Available during business hours)
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SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the Substance or Mixture (GHS/CLP)

- **Acute Toxicity, Oral (Category 4):** H302 - Harmful if swallowed.
- **Acute Toxicity, Inhalation (Category 4):** H332 - Harmful if inhaled.
- **Specific Target Organ Toxicity - Repeated Exposure (Category 2):** H373 - May cause damage to organs (Brain/Central Nervous System) through prolonged or repeated exposure.

2.2 GHS Label Elements

- **Signal Word:** Warning
- **Hazard Statements:**
 - H302 + H332: Harmful if swallowed or if inhaled.
 - H373: May cause damage to organs 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.
 - P314: Get medical advice/attention if you feel unwell.
 - P501: Dispose of contents/container to an approved waste disposal plant.

2.3 Other Hazards

- None known.
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SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Component	CAS No.	EC No.	Concentration
Manganese Dioxide (MnO ₂)	1313-13-9	215-202-6	90% – 95%

SECTION 4: FIRST AID MEASURES

4.1 Description of First Aid Measures

- **Inhalation:** Remove person to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Seek medical attention.
- **Skin Contact:** Wash off with soap and plenty of water. Consult a physician if irritation persists.
- **Eye Contact:** Flush eyes with water as a precaution. Seek medical attention if irritation occurs.
- **Ingestion:** Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most Important Symptoms and Effects, Both Acute and Delayed

- The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11.

4.3 Indication of Any Immediate Medical Attention and Special Treatment Needed

- No data available.
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SECTION 5: FIREFIGHTING MEASURES

5.1 Extinguishing Media

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

5.2 Special Hazards Arising from the Substance or Mixture

- Manganese oxides. Strong oxidizer; contact with other material may cause fire.

5.3 Advice for Firefighters

- Wear self-contained breathing apparatus for firefighting if necessary.
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SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal Precautions, Protective Equipment and Emergency Procedures

- Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation.

6.2 Environmental Precautions

- Do not let product enter drains.

6.3 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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SECTION 7: HANDLING AND STORAGE

7.1 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.

7.2 Conditions for Safe Storage, Including Any Incompatibilities

- Store in a cool place. Keep container tightly closed in a dry and well-ventilated place. Keep away from heat and sources of ignition.

7.3 Specific End Use(s)

- Apart from the uses mentioned in section 1.2, no other specific uses are stipulated.
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SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control Parameters

- **Exposure Limits:** Manganese (as Mn) - TWA: 0.2 mg/m³ (ACGIH).

8.2 Exposure Controls

- **Appropriate Engineering Controls:** Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.
 - **Personal Protective Equipment:**
 - **Eye/Face Protection:** Safety glasses with side-shields conforming to EN166.
 - **Skin Protection:** Handle with gloves. Gloves must be inspected prior to use.
 - **Body Protection:** Complete suit protecting against chemicals.
 - **Respiratory Protection:** For nuisance exposures, use type P95 (US) or type P1 (EU EN 143) particle respirator.
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SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on Basic Physical and Chemical Properties

- **Appearance:** Black/Dark Grey Powder
- **Odour:** Odourless
- **pH:** No data available
- **Melting Point/Freezing Point:** 535 °C (Decomposes)
- **Initial Boiling Point and Boiling Range:** No data available
- **Flash Point:** Not applicable
- **Evaporation Rate:** No data available
- **Flammability (solid, gas):** No data available
- **Vapour Pressure:** No data available
- **Vapour Density:** No data available
- **Relative Density (Bulk Density):** 0.6 – 0.9 g/cm³
- **Water Solubility:** Insoluble
- **Partition Coefficient (n-octanol/water):** No data available
- **Auto-ignition Temperature:** No data available

- **Decomposition Temperature:** 535 °C
 - **Viscosity:** No data available
 - **Explosive Properties:** No data available
 - **Oxidizing Properties:** Strong oxidizer
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SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity: No data available. **10.2 Chemical Stability:** Stable under recommended storage conditions. **10.3 Possibility of Hazardous Reactions:** No data available. **10.4 Conditions to Avoid:** Heat, moisture, and dust formation. **10.5 Incompatible Materials:** Strong acids, strong reducing agents, organic materials, flammable substances. **10.6 Hazardous Decomposition Products:** Manganese oxides.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on Toxicological Effects

- **Acute Toxicity:** LD50 Oral - Rat - > 3,478 mg/kg.
 - **Skin Corrosion/Irritation:** No data available.
 - **Serious Eye Damage/Eye Irritation:** No data available.
 - **Respiratory or Skin Sensitisation:** 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.
 - **Reproductive Toxicity:** No data available.
 - **STOT-Single Exposure:** No data available.
 - **STOT-Repeated Exposure:** May cause damage to organs through prolonged or repeated exposure (Brain/CNS).
 - **Aspiration Hazard:** No data available.
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SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity: No data available. **12.2 Persistence and Degradability:** No data available. **12.3 Bioaccumulative Potential:** No data available. **12.4 Mobility in Soil:** No data available. **12.5 Results of PBT and vPvB Assessment:** Not required/conducted. **12.6 Other Adverse Effects:** No data available.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste Treatment Methods

- **Product:** Offer surplus and non-recyclable solutions to a licensed disposal company.
 - **Contaminated Packaging:** Dispose of as unused product.
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SECTION 14: TRANSPORT INFORMATION

14.1 UN Number: 1479 (Oxidizing solid, n.o.s.) or Not Restricted depending on concentration and testing. **14.2 UN Proper Shipping Name:** Oxidizing solid, n.o.s. (Manganese Dioxide) **14.3 Transport Hazard Class(es):** 5.1 **14.4 Packing Group:** III **14.5 Environmental Hazards:** No **14.6 Special Precautions for User:** No data available.

SECTION 15: REGULATORY INFORMATION

15.1 Safety, Health and Environmental Regulations/Legislation Specific for the Substance or Mixture

- This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.
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SECTION 16: OTHER INFORMATION

16.1 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. It does not represent any guarantee of the properties of the product. BTLnewmaterial shall not be held liable for any damage resulting from handling or from contact with the above product.