

# Technical Data Sheet (TDS)

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## Industrial Grade Manganese Oxide for Manganese Sulfate Production

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**Company Name:** BTLnewmaterial **Email:** lixifirm@outlook.com **Phone:** +8618273793022 **Website:** [manganesesupply.com](http://manganesesupply.com)

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### 1. Product Description

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Industrial Grade Manganese Oxide (MnO) is a primary raw material specifically designed for Manganese Sulfate (MnSO<sub>4</sub>) manufacturing via sulfuric acid leaching. It provides consistent Manganese (Mn) content and controlled impurities to ensure stable reaction efficiency. This product is suitable for chemical plants producing both fertilizer-grade and battery-grade manganese sulfate.

### 2. Key Features

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- **High Manganese Content:** Suitable for mineral premix production, ensuring efficient manganese availability.
- **Stable Crystal Structure:** Guarantees consistent manganese release during processing.
- **Low Impurity Levels:** Helps maintain feed formulation stability and reduces the need for extensive purification in downstream processes.
- **Controlled Particle Size:** Optimized particle size (80–200 mesh) improves dispersion and enhances leaching rates.
- **Cost-Effective:** Offers an economical manganese source for large-scale manufacturing.

- **Versatile Application:** Suitable for use in livestock, poultry, and aquaculture feed supplements, as well as various industrial chemical processes.

### 3. Technical Specifications

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The following table outlines the key technical parameters and chemical composition of BTLnewmaterial's Industrial Grade Manganese Oxide:

Parameter	Typical Value
MnO Purity	≥ 90–95%
Manganese (Mn) Content	≥ 60%
Particle Size	80–200 mesh
Moisture	≤ 1.5%
Bulk Density	1.0–1.5 g/cm <sup>3</sup>
Acid Reactivity (H <sub>2</sub> SO <sub>4</sub> )	High
Iron (Fe)	≤ 0.5%
Insoluble Residue	≤ 1.0%

*Note: Low impurity levels are crucial for reducing purification steps and improving the quality of the final manganese sulfate product.*

### 4. Applications

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- **Manganese Sulfate Production:** MnO reacts with sulfuric acid to form MnSO<sub>4</sub>, serving as a key intermediate in the production of fertilizers and battery materials.
- **Fertilizer Manufacturing:** Used to produce micronutrient manganese sulfate for crop nutrition, addressing manganese deficiencies in agricultural soils.
- **Battery Material Processing:** Acts as a precursor for high-purity manganese sulfate, which is essential for lithium-ion cathode materials in advanced battery technologies.

- **Chemical Intermediates:** Utilized in the synthesis of various other manganese salts and compounds.
- **Industrial Leaching Systems:** Provides a consistent and reactive feedstock for acid dissolution processes in diverse industrial applications.

## 5. Packaging & Supply

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- **Standard Packaging:** 25 kg kraft paper bags with PE inner liner.
- **Bulk Packaging:** 1 MT jumbo bags are available for large-scale handling and transport.
- **Export Packaging:** Palletized export packaging is provided for secure container shipments.
- **Logistics:** Suitable for 20'/40' container loading.
- **Samples:** Available for pilot leaching and process validation to ensure product compatibility and performance.