

Technical Data Sheet: Reagent Grade Manganese Dioxide (MnO₂)

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1. Product Description

Reagent Grade MnO₂ (manganese dioxide) with purity $\geq 99.5\%$ is specifically engineered for demanding laboratory research and analytical applications. This high-purity manganese dioxide is crucial for experiments requiring exceptional chemical consistency and minimal impurities. It meets stringent purity requirements for various scientific procedures, including synthesis, titration, and advanced materials characterization in diverse research environments.

2. Technical Specifications

The following table outlines the key technical parameters and properties of BTLnewmaterial's Reagent Grade MnO₂:

Specification	Typical Range / Value
Chemical Formula	MnO ₂
Purity (as MnO ₂)	≥99.5%
Assay (Mn content)	63.0–64.5%
Moisture (KF)	≤0.5%
Insoluble Matter	≤0.1%
pH (1% aqueous)	6.5–8.5
Heavy Metals (as Pb)	≤10 ppm
Chloride (Cl ⁻)	≤50 ppm
Sulfate (SO ₄ ²⁻)	≤50 ppm
Particle Size D50	5–20 μm (typical)
Appearance	Fine brown to black powder

3. Key Features

- **High Purity:** Reagent grade suitable for precise laboratory research workflows, ensuring reliable and accurate results.
- **Low Trace Impurities:** Minimizes interference in sensitive analytical and synthetic processes, leading to reproducible outcomes.
- **Controlled Moisture and pH:** Narrow specifications for moisture and pH support a wide range of aqueous and non-aqueous studies.
- **Consistent Particle Size:** Uniform particle size ensures even dispersion in experimental media, contributing to experimental consistency.
- **Minimal Heavy Metals and Halides:** Significantly reduces potential interference in sensitive assays, enhancing data integrity.
- **Quality-Assured Production:** Manufactured under controlled conditions to guarantee research reliability and product consistency.

4. Applications

BTLnewmaterial's Reagent Grade MnO₂ is ideal for a variety of critical applications in academic and industrial research:

- **Laboratory Chemical Synthesis:** Essential for reactions requiring high-purity manganese dioxide as a reactant or catalyst.
- **Catalyst Studies:** Widely used in research involving oxidative reactions and catalyst development.
- **Electrochemical and Battery Material Investigations:** A key component in the study and development of advanced electrochemical systems and battery technologies.
- **Analytical Chemistry:** Utilized in redox titrations, standard preparations, and other precise analytical procedures.
- **Materials Science Research:** Employed in investigations focusing on transition metal oxides and their properties.
- **General Research Projects:** Suitable for any academic or industrial research project where purity, consistency, and reliability are paramount.

5. Packaging & Supply

Reagent Grade MnO₂ is supplied in robust, moisture-resistant, and tamper-evident packaging to maintain its chemical integrity and prevent contamination. Standard packaging options include 1 kg, 5 kg, and 25 kg inner sealed drums, which are then secured within outer export-grade cartons or pallets. This packaging is designed to be suitable for international shipment, ensuring safe delivery.

Customization & Technical Support: Custom specifications for parameters such as particle size distribution, bulk density, or moisture limits are available upon request to meet specific research protocols. BTLnewmaterial also provides comprehensive technical support from experienced chemists to assist with specification clarification, application guidelines, and quality data documentation.