Technical Datasheet: Manganese Dioxide (MnO_2)

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Product Description

This manganese dioxide (MnO_2) is a battery-grade material designed specifically for Magnesium-Manganese Dry Cell Production, offering stable electrochemical performance and controlled impurity levels. The product provides consistent depolarization efficiency and reliable discharge behavior in Mg-MnO_2 primary cells. It is suitable for manufacturers requiring uniform quality for mass dry cell production.

Technical Specifications

Parameter	Typical Range
MnO_2 Content	88.0–92.0%
Crystal Type	γ-MnO_2 / Mixed CMD
Bulk Density	0.8–1.2 g/cm^3
BET Surface Area	20–45 m^2/g
Moisture (105 °C)	≤ 1.5%
Fe	≤ 0.05%
Pb	≤ 0.02%
Water-Soluble Salts	≤ 0.5%
Particle Size (D50)	5–15 µm

Key Features

- Optimized depolarization performance for magnesium-manganese dry cell systems.
- Controlled particle size distribution for uniform cathode mixing.
- Low heavy metal impurities to reduce self-discharge risk.
- Stable crystal structure ensuring consistent discharge voltage.
- Good compatibility with Mg anode chemistry and electrolyte systems.
- Proven suitability for Magnesium-Manganese Dry Cell Production in continuous manufacturing lines.

Applications

- **Magnesium-Manganese Dry Cells** – Provides efficient cathodic depolarization and stable discharge output.
- Primary Dry Batteries – Suitable for low- to medium-drain consumer and industrial applications.
- Special-purpose Mg-based Cells – Supports customized formulations requiring controlled MnO_2 reactivity.

Packaging & Supply

- Standard packaging: 25 kg kraft paper bags with inner PE liner.
- Bulk options: 500 kg jumbo bags or customized packaging on request.
- Suitable for sea freight export with moisture-protected handling.
- Stable long-term supply for contract manufacturing orders.

Customization & Technical Support

- MnO_2 activity, surface area, and particle size can be adjusted based on cell design requirements.

- Technical support available for cathode formulation optimization and trial testing.
- Engineering team assistance for scaling from pilot to full production.
- Documentation support including COA, MSDS, and batch traceability.