

Technical Data Sheet (TDS)

Manganese Dioxide for Ferrite Magnet Raw Materials

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1. Product Description

Manganese Dioxide for Ferrite Magnet Raw Materials is a high-purity MnO_2 powder specifically developed as a critical manganese source in the formulation of ferrite ceramics. With a typical purity exceeding 95%, this material is engineered to facilitate stable phase formation and ensure consistent magnetic properties during the ferrite sintering process. It is widely utilized in the production of soft ferrite cores and various magnetic ceramic components, where precise material control is paramount for optimal performance.

2. Technical Specifications

The following table outlines the key technical parameters of Manganese Dioxide for Ferrite Magnet Raw Materials:

Parameter	Typical Value
MnO ₂ Purity	95–98%
Particle Size (D50)	1–5 μm
Surface Area	15–35 m ² /g
Moisture	≤0.5%
Bulk Density	0.6–0.9 g/cm ³
Crystal Phase	γ-MnO ₂ / Mixed MnO ₂

3. Key Features

- **High Chemical Purity:** Ensures a stable and reliable manganese supply during ferrite ceramic synthesis, which is crucial for achieving desired magnetic characteristics.
- **Fine Particle Size (1-5 μm):** Improves mixing uniformity when combined with iron oxide and other ferrite precursors, leading to homogeneous material distribution.
- **Controlled Crystal Structure (γ-MnO₂):** Supports consistent sintering behavior in ceramic processing, contributing to predictable material properties and performance.
- **High Surface Reactivity:** Enhances diffusion and phase formation during high-temperature calcination, optimizing the efficiency of the ferrite production process.
- **Reliable Composition Control:** Provides manufacturers with the ability to precisely control the composition of magnetic ceramics, ensuring consistent product quality.
- **Low Moisture and Stable Bulk Density:** Facilitates easy handling and processing in powder metallurgy systems, reducing operational complexities and improving efficiency.

4. Applications

Manganese Dioxide for Ferrite Magnet Raw Materials is primarily applied in:

- **Soft Ferrite Core Production:** Serves as a controlled manganese source for Mn-Zn and Ni-Zn ferrite materials, which are extensively used in transformers, inductors, and other electronic components.
- **Magnetic Ceramic Components:** Suitable for preparing high-quality ferrite powders utilized in various electronic components and advanced electromagnetic shielding materials.
- **High-Frequency Ferrite Materials:** The fine particle size and controlled properties of MnO₂ improve homogeneity in ferrite mixtures, essential for applications in communication and power electronics.
- **Magnetic Powder Metallurgy:** Supports stable composition control in ferrite-based magnetic materials, contributing to the development of advanced magnetic alloys and composites.

5. Packaging & Supply

Standard packaging for Manganese Dioxide for Ferrite Magnet Raw Materials consists of **25 kg fiber drums with inner PE liners**. This packaging is designed to effectively prevent moisture absorption during storage and transport, thereby preserving product quality and integrity. Export packaging options are available and are specifically designed to be suitable for sea freight and palletized shipments, meeting international logistics standards. Additionally, **laboratory samples** are provided for comprehensive ferrite formulation testing and material evaluation, allowing customers to thoroughly assess the product's suitability for their specific applications.