

Technical Datasheet: High Purity MnO₂ for Optical Glass Manufacturing

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1. Product Description

High Purity MnO₂ for Optical Glass Manufacturing is an engineered manganese dioxide with a purity of $\geq 99.6\%$. This specialized grade of MnO₂ powder is meticulously tailored for the production of specialty glass, particularly in high-precision optical applications. Its primary function is to enhance optical glass color control, ensure refractive index stability, and minimize defects, thereby meeting the stringent quality requirements of advanced optical components.

2. Key Features

- **High MnO₂ Content:** With $\geq 99.6\%$ MnO₂, it ensures precise color control and high purity in optical glass manufacturing.
- **Low Impurity Levels:** Characterized by low iron and trace impurities, which are critical in preventing undesirable coloration and optical defects in the final product.
- **Controlled Particle Size:** The controlled particle size facilitates uniform dispersion within the glass batch, contributing to consistent product quality.
- **Consistent Chemical Composition:** Maintains a stable chemical composition, crucial for supporting the stability of the refractive index in optical glass.
- **Low Loss on Ignition (LOI):** Ensures minimal volatilization during the melting process, contributing to process efficiency and product integrity.
- **High Bulk Density:** Offers stable handling and precise dosing in glass furnaces, optimizing manufacturing processes.

3. Technical Specifications

Parameter	Typical Range	Unit
MnO ₂ Purity (as MnO ₂)	99.60 – 99.90	%
Fe (Iron)	≤ 0.008	%
SiO ₂ (Silica)	≤ 0.03	%
Ca (Calcium)	≤ 0.01	%
Mg (Magnesium)	≤ 0.01	%
Particle Size (D50)	2.5 – 6.0	μm
Loss on Ignition (LOI)	0.5 – 1.2	%
Bulk Density	2.5 – 3.2	g/cm ³
pH (5% slurry)	6.5 – 8.0	—

4. Applications

This high-purity manganese dioxide is specifically designed for demanding applications within the glass industry:

- **Optical Glass Manufacturing:** Ideal for the production of high-precision lenses and various optical components where clarity and performance are paramount.
- **Specialty Glass Compounds:** Improves the color and transmission properties of diverse specialty glass formulations.
- **Precision Optical Coatings:** Utilized as a dopant to achieve controlled refractive properties in advanced optical coatings.
- **High-End Optics and Photonics:** Supports critical applications requiring exceptional defect control and purity.

5. Packaging & Supply

BTLnewmaterial offers flexible packaging and supply solutions to meet diverse customer needs:

- **Standard Packaging:** Available in 25 kg and 500 kg industrial bags, each equipped with inner liners to provide superior protection against moisture and contamination.
- **Export-Ready Packaging:** All packaging adheres to international freight standards, ensuring safe and secure long-distance shipment.
- **Customization:** Bulk packaging and various Full Container Load (FCL) / Less than Container Load (LCL) shipping arrangements are available upon request.

6. Customization & Technical Support

BTLnewmaterial is committed to providing comprehensive support and customization options:

- **Product Customization:** Particle size distribution, impurity limits, and packaging formats can be precisely adjusted to align with specific customer requirements.
- **Technical Support:** Dedicated technical support is available to offer formulation guidance and assist with seamless integration into existing optical glass manufacturing processes.