Technical Data Sheet: MnO2 Granules for Catalytic Deferrization in Wells

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1. Product Description

MnO2 Granules for Catalytic Deferrization in Wells are high-purity manganese dioxide filter media specifically engineered for the efficient oxidation and removal of dissolved iron from groundwater. With a robust MnO_2 content ranging from 75% to 85%, these granules deliver stable and reliable catalytic performance within various well water treatment systems. They are particularly well-suited for municipal and industrial wells that necessitate continuous iron removal without the need for chemical overdosing, offering an environmentally friendly and cost-effective solution for water purification.

2. Key Features

- **High Catalytic Activity:** The elevated MnO_2 content ensures superior catalytic oxidation of ferrous iron (Fe^{2+}) into ferric iron (Fe^{3+}), which can then be easily filtered out.
- **Stable Performance:** Designed for continuous operation, providing consistent iron removal efficiency in diverse well filtration setups.
- **Uniform Particle Size:** A well-controlled particle size distribution minimizes pressure drop and ensures uniform flow dynamics across the filter bed.
- **High Mechanical Strength:** Exhibits excellent resistance to crushing, significantly reducing media loss and extending the lifespan of the filter during routine backwashing cycles.
- **Long Service Life:** Capable of prolonged operational periods with appropriate regeneration and maintenance protocols.

- **Optimized Purity:** Carefully processed to control impurity levels, ensuring optimal performance and preventing undesirable side reactions.

3. Technical Specifications

The following table outlines the key technical parameters of the MnO2 Granules:

Parameter	Specification
MnO_2 Content	75–85%
Particle Size	0.5–1.0 mm / 1.0–2.0 mm / 2.0–4.0 mm
Bulk Density	1.8–2.1 g/cm³
Apparent Density	3.6–4.0 g/cm³
Crushing Strength	≥ 60 N
Porosity	35–45%
Moisture Content	≤ 2%
Recommended Filtration Rate	8–15 m/h
Operating pH Range	6.5–9.0
Backwash Expansion Rate	20–40%

4. Applications

MnO2 Granules are highly versatile and effective in various water treatment scenarios:

- **Deep Well Water Treatment:** Efficiently removes dissolved iron through catalytic oxidation, improving water quality for consumption and industrial use.
- **Municipal Groundwater Plants:** Ensures stable and reliable operation in both pressure and gravity filter systems, contributing to safe public water supplies.
- **Industrial Process Water:** Prevents iron fouling in critical pipelines, heat exchangers, and other equipment, thereby reducing maintenance costs and improving operational efficiency.

- **Pre-treatment for Softening or RO Systems:** Acts as an essential pre-filter, protecting sensitive downstream membranes and ion exchange resins from iron contamination.
- **Rural and Commercial Well Systems:** Provides a dependable solution for iron removal in decentralized water supply systems.

5. Packaging & Supply

BTLnewmaterial offers flexible packaging options to meet diverse logistical and storage requirements:

- **25 kg Woven Bags:** Equipped with a PE liner for enhanced protection and durability, suitable for smaller-scale applications or manual handling.
- **1000 kg Jumbo Bags:** Ideal for large-scale industrial applications, facilitating bulk handling and transportation.
- **Palletized for Export:** All packaging is palletized and prepared for sea freight export, complying with international shipping standards.
- **Documentation:** Standard export documentation, including Certificate of Analysis (COA) and Material Safety Data Sheet (MSDS), is readily available upon request.

6. Customization & Technical Support

BTLnewmaterial provides comprehensive customization and technical support services:

- **Particle Size & MnO_2 Content Adjustment:** Particle size grading and MnO_2 content can be precisely adjusted to align with specific raw water iron concentrations and the design parameters of individual filtration systems.
- **Expert Technical Support:** Dedicated technical assistance is available for optimizing filter bed configuration, determining appropriate backwash parameters, and enhancing overall system performance for catalytic deferrization.