

# Technical Datasheet: Catalytic Manganese Dioxide for Iron and Manganese Removal

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## 1. Product Description

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Catalytic Manganese Dioxide for Iron and Manganese Removal is a high-activity  $\text{MnO}_2$  media with  $\text{MnO}_2$  content  $\geq 75\%$ . It is specifically designed for the catalytic oxidation of dissolved ferrous iron ( $\text{Fe}^{2+}$ ) and manganous manganese ( $\text{Mn}^{2+}$ ) present in groundwater and various industrial water systems. This product ensures stable catalytic performance under continuous filtration conditions and is suitable for both pressure filters and gravity filter systems.

## 2. Key Features

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- High Catalytic Activity:** Accelerates the oxidation of iron and manganese without the need for chemical dosing.
- Stable Performance:** Features a stable  $\text{MnO}_2$  phase, ensuring a long service life and consistent filtration efficiency.
- Optimized Particle Size:** The optimized particle size distribution effectively reduces pressure drop within filter beds.
- Continuous Flow Compatibility:** Suitable for systems operating under continuous flow conditions.
- Low Attrition Rate:** Minimizes media loss during backwashing processes.
- Pretreatment Compatibility:** Compatible with various pretreatment methods, including aeration, chlorine, or potassium permanganate.

### 3. Technical Specifications

Parameter	Typical Range
MnO <sub>2</sub> Content	75–85 wt%
Bulk Density	1.8–2.0 g/cm <sup>3</sup>
Particle Size	0.6–1.2 mm / 1–3 mm (customizable)
Specific Surface Area	30–60 m <sup>2</sup> /g
Crushing Strength	≥95%
pH Operating Range	6.5–9.0
Iron Removal Capacity	≤15 mg Fe/L
Manganese Removal Capacity	≤5 mg Mn/L
Moisture Content	≤5%

### 4. Applications

- **Groundwater Treatment:** Utilized in systems for iron and manganese removal through catalytic filtration.
- **Municipal Drinking Water:** Essential for municipal drinking water plants requiring reliable iron and manganese removal.
- **Industrial Process Water:** Serves as a pretreatment for industrial process water to protect downstream equipment from fouling.
- **Well Water Filtration:** Employed in well water filtration units for both residential and commercial applications.
- **Reverse Osmosis & Softening Pretreatment:** Acts as a pretreatment stage in reverse osmosis and softening systems to prevent membrane fouling.

### 5. Packaging & Supply

- **Standard Packaging:** Available in 25 kg woven bags with PE liners.

- **Bulk Options:** 500 kg and 1000 kg jumbo bags are also available.
- **Export Packaging:** Palletized export packaging is provided, suitable for sea freight.
- **Supply:** Stable supply for bulk orders and long-term projects is ensured.

## 6. Customization & Technical Support

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Particle size, MnO<sub>2</sub> content, and bulk density can be customized to meet specific filtration system designs and influent water quality requirements. Technical support is readily available for media selection, filter bed design, and operational optimization to ensure effective iron and manganese removal performance.