

# Technical Datasheet: High Activity MnO<sub>2</sub> for Industrial Wastewater Oxidation

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**Company Name:** BTLnewmaterial **Email:** lixifirm@outlook.com **Phone:** +8618273793022 **Website:** manganesesupply.com

## 1. Product Description

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High Activity MnO<sub>2</sub> is engineered manganese dioxide with  $\geq 85\%$  purity, optimized for oxidation in industrial wastewater treatment systems. This grade provides accelerated degradation of refractory organics, strong oxidizing capacity, and sustained performance in high-throughput oxidation reactors.

## 2. Technical Specifications

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Parameter	Typical Range	Unit
MnO <sub>2</sub> Purity	85–92	%
Particle Size (D50)	5–20	$\mu\text{m}$
Bulk Density	0.7–1.1	$\text{g}/\text{cm}^3$
Specific Surface Area	25–50	$\text{m}^2/\text{g}$
Loss on Ignition (LOI)	$\leq 5$	%
pH of 10 g/L Slurry	6.5–8.0	—
Moisture Content	$\leq 2$	%

## 3. Key Features

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- **High oxidative activity:** Enhanced redox potential accelerates breakdown of difficult organics in industrial effluent.
- **Consistent performance:** Tight particle distribution and controlled surface area ensure uniform reaction rates in oxidation systems.
- **Thermally stable:** Maintains structural integrity under elevated process temperatures common in wastewater oxidation.
- **High purity:** Minimal impurities reduce side reactions and downstream sludge load.
- **Easy dosing:** Powder form with controlled particle size supports precise feed control.
- **Robust supply:** Manufactured under stable process controls for repeatable batch quality.

## 4. Applications

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- **Industrial wastewater oxidation:** Effective catalyst/oxidant for treatment of textile, dyeing, petrochemical, and pharmaceutical effluents using High Activity MnO<sub>2</sub> for Industrial Wastewater Oxidation in advanced oxidation processes.
- **Advanced oxidation processes (AOPs):** Suited as a heterogeneous oxidant in Fenton-like and catalytic oxidation systems.
- **Sludge reduction aids:** Promotes breakdown of recalcitrant organics to reduce biosolid volume.
- **Odor control:** Oxidizes sulfides and volatile reduced sulfur compounds in wastewater streams.
- **Pre-treatment oxidation:** Enhances biodegradability of influent prior to biological treatment.

## 5. Packaging & Supply

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Supplied in 25 kg kraft paper-plastic composite bags with inner liners to resist moisture uptake. Bulk and custom packaging options available for containerized or

jumbo bag shipments. Suitable for export by sea and multimodal transport, with packaging designed to meet international freight requirements and facilitate safe handling and storage.

## 6. Customization & Technical Support

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Particle size distribution, surface area, and purity specifications can be adjusted to meet specific process needs. Engineering support is available for integration trials, dosing strategies, and performance optimization in wastewater oxidation systems. Contact our technical team for tailored solutions and data sheets.