

Technical Datasheet (TDS)

Product Name: Industrial Manganese Dioxide (MnO₂) for Welding Electrode Coatings
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1. Product Description

Industrial Manganese Dioxide (MnO₂) for Welding Electrode Coatings is a high-purity, reactive MnO₂ powder specifically engineered for use in welding electrode flux formulations. It acts as a powerful oxidizing agent that significantly improves arc stability, promotes efficient slag formation, and enhances the overall metallurgical quality of the weld. This grade is characterized by its high purity (90–95%) and consistent physical properties, making it a reliable choice for welding rod manufacturers and flux formulation engineers.

2. Key Features

- **High Oxidation Activity:** Enhances slag formation and improves metal cleanliness by promoting the oxidation of impurities.
- **Stable Chemical Composition:** Ensures consistent and predictable performance in large-scale electrode manufacturing.
- **Controlled Particle Size:** Optimized (200–400 mesh) for uniform dispersion within flux coating mixtures.
- **Thermal Stability:** Maintains effectiveness under the extreme temperatures of the welding arc.
- **Improved Arc Stability:** Provides a reliable oxygen supply to stabilize the welding arc behavior.

3. Technical Specifications

Parameter	Typical Value
MnO ₂ Purity	90–95%
Particle Size	200–400 mesh
Surface Area	20–40 m ² /g
Moisture (H ₂ O)	≤ 0.5%
Bulk Density	0.6–0.9 g/cm ³
Crystal Phase	Predominantly γ-MnO ₂
Appearance	Black/Dark Grey Powder

4. Applications

- **Welding Electrode Coatings:** Primary oxidizing component to stabilize arc and support slag generation.
- **Flux-Coated Welding Rods:** Promotes molten metal purification and impurity removal.
- **Submerged Arc Welding (SAW):** Enhances slag fluidity and provides better protection for the weld pool.
- **Specialty Welding Materials:** Used in high-temperature welding environments where controlled oxidation is critical.

5. Packaging & Supply

- **Standard Packaging:** 25 kg fiber drums with PE inner liners to prevent moisture absorption.
- **Customization:** Available particle size adjustment and purity optimization upon request.
- **Storage:** Store in a dry, well-ventilated warehouse. Keep containers tightly sealed to maintain powder flowability.

- **Shelf Life:** 24 months when stored properly in original, unopened packaging.
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