Technical Data Sheet: Manganese Dioxide for Rubber Vulcanization Acceleration

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1. Product Description

Manganese Dioxide for Rubber Vulcanization Acceleration is a high-purity MnO_2 powder specifically engineered for use in rubber compounding and vulcanization systems. With a typical MnO_2 purity exceeding 90%, this material significantly enhances oxidation reactions during the curing process and promotes improved cross-link formation within sulfur-based rubber formulations. It is widely adopted in industrial rubber manufacturing due to its ability to ensure stable curing performance and consistent product quality.

2. Technical Specifications

Parameter	Typical Value
MnO_2 Purity	90–95%
Particle Size (D50)	3–8 μm
Surface Area	30–60 m^2/g
Moisture	≤1.0%
Bulk Density	0.55–0.75 g/cm^3
Crystal Phase	Mainly γ-MnO_2

3. Key Features

- **High Catalytic Activity:** Promotes efficient oxidation during rubber curing reactions.
- **Uniform Particle Size:** Ensures improved dispersion within rubber compounds.
- **Stable MnO_2 Purity:** Guarantees consistent vulcanization performance in industrial production.
- **High Surface Reactivity:** Supports effective interaction with sulfur curing systems.
- **Enhanced Curing Efficiency:** Improves curing while maintaining formulation stability.
- **Easy Blending:** Powder form allows for simple integration with fillers, accelerators, and other additives.

4. Applications

- **Rubber Vulcanization Systems:** Acts as an oxidation catalyst to support sulfur-based cross-linking reactions.
- **Industrial Rubber Compounds:** Suitable for formulations used in seals, gaskets, and various mechanical rubber parts.
- **Adhesive and Sealant Elastomers:** Enhances curing reactions in specific oxidative curing systems.
- **Specialty Rubber Formulations:** Improves reaction efficiency in controlled curing processes.
- **Research and Formulation Development:** Utilized by R&D teams for studying catalytic oxidation in rubber chemistry.

5. Packaging & Supply

Standard packaging consists of **25 kg fiber drums with PE inner liners** to effectively prevent moisture contamination. The export packaging is designed to be suitable for international transportation and palletized shipment. Laboratory samples are readily available for formulation testing and process evaluation.

6. Storage

The material should be stored in a dry and well-ventilated environment. Sealed packaging helps prevent moisture absorption that may affect powder flowability. When stored properly in sealed containers, manganese dioxide generally maintains stable performance for approximately 24 months. Regular quality checks are recommended for long-term storage.