

Technical Data Sheet: Manganese Dioxide for Pyrotechnic and Match Industry

Company Information

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1. Product Description

Manganese Dioxide for Pyrotechnic and Match Industry is a high-reactivity MnO_2 material specifically engineered for use as an oxidizing component in various ignition compositions and pyrotechnic formulations. With typical purity levels ranging from 90% to 95% MnO_2 , this material ensures stable oxidation performance and consistent reaction behavior, which are critical for reliable pyrotechnic applications. It is widely utilized in the manufacturing of safety matches, diverse fireworks mixtures, and advanced ignition systems.

2. Key Features

- High Oxidation Activity:** Exhibits robust oxidizing properties, making it highly suitable for initiating and sustaining combustion reactions within pyrotechnic mixtures.
- Stable Chemical Composition:** Guarantees consistent performance, particularly in sensitive match head formulations, by maintaining a uniform chemical profile.
- Controlled Particle Size Distribution:** Optimized particle sizing facilitates uniform blending with other oxidizers and fuels, enhancing the homogeneity and predictability of formulations.

- **Low Moisture Content:** Minimizes moisture-related issues, thereby improving storage stability and preventing potential reaction instabilities in reactive blends.
- **Reliable Oxidizing Capacity:** Provides dependable oxidizing power essential for the precise control required in various ignition systems.

3. Technical Specifications

Parameter	Typical Value
MnO ₂ Purity	90–95%
Particle Size	100–325 mesh
Surface Area	18–35 m ² /g
Moisture	≤0.5%
Bulk Density	0.6–0.9 g/cm ³
Crystal Phase	Natural Pyrolusite

4. Applications

- **Safety Match Production:** Functions as a crucial oxidizing component, supporting reliable ignition in various match head formulations.
- **Fireworks Compositions:** Plays a vital role in assisting controlled oxidation reactions within complex pyrotechnic mixtures, contributing to desired visual and auditory effects.
- **Ignition Compositions:** Employed in specialized ignition blends where a stable and predictable oxidation reaction is paramount for effective initiation.
- **Signal and Flare Mixtures:** Enhances combustion consistency and overall reaction efficiency in signal and flare devices.
- **Pyrotechnic Manufacturing:** Provides stable oxidizing behavior, which is fundamental for the development and optimization of diverse pyrotechnic formulations.

5. Packaging & Supply

Standard packaging for Manganese Dioxide for Pyrotechnic and Match Industry includes **25 kg fiber drums equipped with inner PE liners**. These liners are specifically designed to prevent moisture absorption, thereby preserving product integrity and performance. All export packaging is robust and suitable for both sea and air shipment, ensuring safe transit globally. Additionally, laboratory samples are readily available for customers requiring formulation testing and qualification prior to bulk procurement.