Technical Data Sheet (TDS)

Manganese Oxide Catalyst for Hydrogenation Reactions

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1. Product Description

Manganese Oxide Catalyst for Hydrogenation Reactions is a high-purity MnO-based material specifically engineered for advanced catalytic applications in chemical synthesis. This catalyst is designed to provide stable catalytic activity, controlled manganese content, and consistent performance in various hydrogenation processes. It is particularly suitable for industrial reactors that demand reliable and repeatable reaction efficiency, contributing to optimized yields and product quality.

2. Key Features

- **High Manganese Concentration:** Ensures consistent and robust catalytic activity within hydrogenation systems, leading to efficient conversion rates.
- **Controlled Impurity Levels:** Minimizes the presence of impurities such as iron and sulfur, which helps prevent catalyst poisoning and enhances reaction selectivity and longevity.
- **Stable Particle Size Distribution:** Supports uniform dispersion of the catalyst within reactor beds, ensuring optimal contact with reactants and consistent performance.
- **Optimized Surface Area:** Features a tailored surface area (10–50 m^2/g) that significantly enhances hydrogen adsorption and overall reaction efficiency.

- **Reliable Thermal and Chemical Stability:** Provides excellent stability under a wide range of operating temperatures and chemical environments, ensuring sustained catalytic performance.
- **Versatile Application:** Suitable for both continuous and batch hydrogenation processes, offering flexibility in various industrial setups.

3. Technical Specifications

The following table outlines the key technical parameters and chemical composition of BTLnewmaterial's Manganese Oxide Catalyst for Hydrogenation Reactions:

Parameter	Typical Value
MnO Purity	≥ 90–95%
Manganese (Mn) Content	≥ 60%
Particle Size	80–200 mesh
Moisture	≤ 1.5%
Bulk Density	1.0–1.5 g/cm^3
Surface Area	10–50 m^2/g
Fe Content	≤ 0.5%
Sulfur (S)	≤ 0.1%
Loss on Ignition	≤ 2.0%

Note: The optimized surface area and controlled impurity profile are critical for maximizing catalytic efficiency and minimizing deactivation in hydrogenation processes.

4. Applications

- **Hydrogenation of Organic Intermediates:** Facilitates reduction reactions in the synthesis of fine chemicals, contributing to the production of high-value compounds.

- **Petrochemical Processing:** Supports essential hydrogenation steps in petroleum refining and various downstream chemical production processes, improving product purity and yield.
- **Pharmaceutical Intermediates:** Utilized in catalytic systems that require precise and controlled reduction conditions for the synthesis of pharmaceutical active ingredients.
- **Agrochemical Synthesis:** Enhances the efficiency of hydrogenation reactions involved in the production of active ingredient precursors for agrochemicals.
- **Catalyst Blending Systems:** Integrates effectively with multi-component catalyst formulations, acting as a promoter or support to improve overall catalytic performance and selectivity.

5. Packaging & Supply

- **Standard Packaging:** Supplied in robust 25 kg kraft paper bags, each with an inner PE liner to protect the catalyst from moisture and contamination.
- **Export Packaging:** Palletized export packaging is available for bulk shipments, ensuring secure and efficient transportation across international borders.
- **Container Loads:** Available for delivery in both 20 ft and 40 ft container loads, providing flexible options for various logistical requirements.
- **Samples:** Product samples are readily available for catalyst evaluation and process testing, allowing customers to validate performance and compatibility in their specific applications prior to large-scale procurement.