

Technical Datasheet (TDS): Agriculture Grade Manganese Sulfate Monohydrate

BTLnewmaterial

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Product Overview and Description

Agriculture grade manganese sulfate monohydrate represents a high-efficiency micronutrient source specifically engineered to address manganese deficiencies in diverse agronomic environments. This product is synthesized to maintain a high level of purity, ensuring that the essential manganese (Mn) content remains stable and bioavailable for plant uptake. By providing both powder and granular physical forms, BTLnewmaterial offers flexible solutions for integration into modern agricultural practices, ranging from large-scale dry fertilizer blending to precise liquid foliar applications.

The chemical formulation, represented as $\text{MnSO}_4 \cdot \text{H}_2\text{O}$, is characterized by its excellent solubility and minimal impurity profile. The strict control over secondary elements such as iron (Fe), calcium (Ca), and magnesium (Mg) is a critical feature of this grade, as it significantly reduces the risk of antagonistic nutrient interactions that often occur in complex soil matrices. Furthermore, the product adheres to rigorous safety standards regarding heavy metal concentrations, ensuring that its application does not compromise soil health or crop safety.

Technical Specifications and Chemical Composition

The following table details the fundamental technical parameters and chemical purity levels of the agriculture grade manganese sulfate monohydrate. These specifications are maintained through standardized manufacturing processes to ensure consistency across all supply batches.

Parameter	Specification
Chemical Formula	MnSO ₄ ·H ₂ O
CAS Registry Number	10034-96-5
Physical Appearance	White to slightly pink crystalline powder or granules
Manganese (Mn) Content	≥ 31.8%
Manganese Sulfate Purity	≥ 98.0%
Arsenic (As) Concentration	≤ 3 mg/kg
Lead (Pb) Concentration	≤ 5 mg/kg
Cadmium (Cd) Concentration	≤ 10 mg/kg
Mercury (Hg) Concentration	≤ 0.2 mg/kg
Water Insoluble Matter	≤ 0.1%
Particle Size (Powder Grade)	≥ 95% passing 250 µm sieve

Key Features and Agronomic Benefits

One of the primary advantages of utilizing this agriculture grade sulfate is its superior solubility compared to oxide-based manganese sources. This high solubility facilitates rapid nutrient delivery when applied as a foliar spray or within hydroponic systems, allowing for immediate correction of visible deficiency symptoms. The granular form, conversely, is optimized for uniform distribution when mechanically applied to soil or blended with NPK fertilizers, preventing nutrient segregation during transport and application.

Moreover, the low concentration of heavy metals—specifically arsenic, lead, cadmium, and mercury—ensures compliance with international agricultural regulations and environmental safety guidelines. By minimizing these contaminants, the product supports sustainable farming practices and protects the long-term productivity of the soil. The consistent particle size distribution further enhances the blending uniformity, which is essential for achieving precise nutrient application rates in compound fertilizer formulations.

Primary Applications and Usage

The versatility of manganese sulfate monohydrate allows for its application across a broad spectrum of agricultural sectors. In soil correction programs, it serves as a reliable agent to restore optimal manganese levels, which are vital for the activation of numerous enzymes and the synthesis of chlorophyll. It is particularly effective for high-value crops such as cereals, vegetables, and fruits that exhibit high sensitivity to manganese availability.

In the fertilizer manufacturing industry, this product acts as a foundational micronutrient component for both solid and liquid NPK blends. Its compatibility with various fertilizer technologies, including controlled-release systems and water-soluble formulations, makes it a preferred choice for specialized crop nutrition programs. Additionally, its application in greenhouse and hydroponic environments ensures that plants receive a steady and controlled supply of manganese, which is crucial for maintaining metabolic balance in intensive cultivation systems.

Packaging, Storage, and Supply Logistics

BTLnewmaterial provides standardized packaging solutions to maintain product integrity during international transit and long-term storage. The standard offering consists of 25 kg kraft paper bags equipped with a polyethylene (PE) inner liner to protect against moisture ingress. For large-scale industrial requirements, 1000 kg jumbo bags are available upon request.

Feature	Details
Standard Packaging	25 kg Kraft Paper Bags with PE Liner
Bulk Packaging	1000 kg Jumbo Bags (Optional)
Logistics Options	Palletized 20'GP or 40'HQ Container Shipments
Storage Conditions	Cool, dry, well-ventilated area; Keep containers sealed
Shelf Life	24 months when stored under optimal conditions

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