

Safety Data Sheet (SDS)

Prepared in accordance with the Globally Harmonized System (GHS)

Section 1: Identification of the Substance and the Supplier

The product identified in this document is Agriculture Grade Manganese Sulfate Monohydrate, a vital micronutrient source utilized primarily in the agricultural and fertilizer industries. The chemical is provided by BTLnewmaterial, located at Room 706, No. 154, Wuyi East Road, Niezhou Residential Committee, Caizichi Sub-district Office, Leiyang City, Hengyang City, Hunan Province, China. For technical inquiries or emergency assistance, the supplier can be contacted via email at lixifirm@outlook.com or by telephone at +8618273793022. Further information regarding the product line is available at manganesesupply.com.

Section 2: Hazard Identification

Under the Globally Harmonized System of Classification and Labelling of Chemicals (GHS), this substance is classified as posing a significant risk of serious eye damage (Category 1) and potential organ toxicity through repeated exposure (Category 2), specifically affecting the brain and central nervous system. Furthermore, the substance is categorized as a chronic aquatic hazard (Category 2) due to its long-term toxic effects on aquatic ecosystems.

Label Element	Description
Signal Word	Danger
Hazard Statements	H318: Causes serious eye damage; H373: May cause organ damage through prolonged exposure; H411: Toxic to aquatic life.
Prevention	P260: Do not breathe dust; P273: Avoid environmental release; P280: Wear protective gear.
Response	P305+P351+P338: Rinse eyes cautiously; P310: Immediately call a poison center.

Section 3: Composition and Information on Ingredients

This product consists of high-purity Manganese Sulfate Monohydrate. The chemical identity and concentration levels are maintained to ensure agronomic efficacy while adhering to safety regulations.

Component	CAS No.	EC No.	Concentration
Manganese Sulfate Monohydrate	10034-96-5	232-089-9	≥ 98.0%

Section 4: First-Aid Measures

In the event of inhalation, the affected individual should be moved to an area with fresh air immediately. If respiratory distress occurs, oxygen should be administered by trained personnel, and medical attention must be sought. For skin contact, the affected area should be washed thoroughly with soap and water, and contaminated clothing should be removed. If the substance enters the eyes, they must be rinsed with copious amounts of water for at least 15 minutes, ensuring the eyelids are held open; immediate consultation with an ophthalmologist is mandatory. Ingestion requires rinsing the mouth with water and seeking professional medical advice; emesis should not be induced unless directed by medical staff.

Section 5: Fire-Fighting Measures

Manganese Sulfate Monohydrate is non-combustible. However, when involved in a fire, it may decompose to release hazardous vapors, including sulfur oxides and manganese oxides. Suitable extinguishing media include water spray, alcohol-resistant foam, dry chemical, or carbon dioxide, depending on the surrounding fire conditions. Firefighters should be equipped with self-contained breathing apparatus (SCBA) and full protective clothing to prevent contact with decomposition products.

Section 6: Accidental Release Measures

To manage accidental releases, personnel should utilize appropriate personal protective equipment (PPE) to avoid skin and eye contact. The formation of dust must be minimized by using vacuum systems or wet sweeping methods. Prevent the material from entering drainage systems or natural water bodies, as it poses a threat to aquatic life. Collected material should be placed in secure, labeled containers for subsequent disposal according to local environmental regulations.

Section 7: Handling and Storage

Handling of this substance should occur in well-ventilated areas to prevent the accumulation of airborne dust. Protective eyewear and gloves are essential to mitigate the risk of irritation or injury. Storage facilities should be cool, dry, and well-ventilated. As the product is hygroscopic,

containers must remain tightly sealed when not in use to prevent moisture absorption and caking. It should be stored away from incompatible materials, such as strong oxidizing agents.

Section 8: Exposure Controls and Personal Protection

Occupational exposure limits are generally set at a Time-Weighted Average (TWA) of 0.2 mg/m³ for manganese compounds. Engineering controls, such as local exhaust ventilation, are recommended to maintain concentrations below these limits. Personal protective equipment should include safety goggles or a face shield, chemically resistant gloves, and a dust respirator (e.g., N95 or P1 filter) if dust levels exceed permissible limits.

Section 9: Physical and Chemical Properties

The substance appears as a white to slightly pink crystalline solid, available in both powder and granular forms. It is odorless and exhibits a pH range of 3.0 to 3.5 in a 50 g/l aqueous solution.

Property	Value
Physical State	Solid (Powder or Granules)
Melting Point	700 °C (Decomposes)
Density	2.95 g/cm ³
Solubility in Water	Approximately 762 g/l at 20°C
Manganese Content	≥ 31.8%

Section 10: Stability and Reactivity

Manganese Sulfate Monohydrate is chemically stable under standard ambient conditions of temperature and pressure. It does not undergo hazardous polymerization. However, it is sensitive to moisture and should be protected from humid environments. Incompatible materials include strong oxidizing agents, which may react vigorously. Thermal decomposition will result in the emission of toxic sulfur and manganese oxides.

Section 11: Toxicological Information

The acute oral toxicity (LD50) in rats is reported at 2,150 mg/kg. The primary acute hazard is serious eye damage. Chronic exposure via inhalation may lead to manganese poisoning, known

as manganism, which manifests as neurological impairment similar to Parkinson’s disease. The substance is not classified as a carcinogen by IARC, but it is recognized for its specific target organ toxicity through repeated exposure.

Section 12: Ecological Information

This substance is classified as toxic to aquatic life with long-lasting effects. It may cause significant damage to aquatic organisms if released into the environment in large quantities. While manganese is a naturally occurring element, elevated concentrations in water bodies can disrupt metabolic processes in fish and other aquatic species. Data on bioaccumulation and soil mobility are limited but suggest that the substance should be handled with caution to avoid environmental contamination.

Section 13: Disposal Considerations

Waste material and contaminated packaging should be disposed of in accordance with local, regional, and national environmental regulations. It is recommended to engage a licensed waste disposal service to handle surplus quantities. Contaminated containers should be treated as hazardous waste unless thoroughly decontaminated.

Section 14: Transport Information

For the purposes of transportation, Manganese Sulfate Monohydrate is classified as a dangerous good due to its environmental hazards.

Mode	Identification	Class	Packing Group
ADR/RID	UN 3077	9	III
IMDG	UN 3077	9	III
IATA	UN 3077	9	III

Proper Shipping Name: Environmentally Hazardous Substance, Solid, N.O.S. (Manganese sulphate monohydrate).

Section 15: Regulatory Information

This Safety Data Sheet complies with the criteria established by Regulation (EC) No. 1907/2006 (REACH) and the Globally Harmonized System (GHS). Users are advised to check local regulations as additional requirements may apply depending on the jurisdiction.

Section 16: Other Information

This document was prepared on August 11, 2026. The information provided herein is based on the current state of our knowledge and is intended to describe the product for the purposes of health, safety, and environmental requirements. It should not be construed as guaranteeing any specific property of the product. BTLnewmaterial assumes no responsibility for injury or damage resulting from the misuse of the product or from hazards inherent in the nature of the product.