

Creatine Monohydrate MSDS

Product Name and Identification

Product Name: [Creatine Monohydrate](#)

Synonyms: Methylguanidine-acetic acid monohydrate

CAS Number: 6020-87-7

Chemical Formula: C₄H₉N₃O₂·H₂O

Product Use: Commonly used as a dietary supplement to enhance physical performance by supporting muscle energy production.

Manufacturer Information: [Provide specific details if applicable]

Composition/Ingredients

Chemical Name: Creatine Monohydrate

Concentration: ≥99%

CAS Number: 6020-87-7

EC Number: 200-306-6

Molecular Weight: 149.15 g/mol

Hazards Identification

Classification of the Substance:

This product is not classified as hazardous under OSHA Hazard Communication Standard (29 CFR 1910.1200).

Labeling:

- **Signal Word:** None required
- **Hazard Statements:** Non-hazardous under normal conditions of use.
- **Precautionary Statements:**
 - P264: Wash hands thoroughly after handling.
 - P280: Wear gloves and eye protection as a precaution during large-scale handling.

Additional Hazards:

Dust generated from large quantities may cause minor mechanical irritation to eyes or respiratory passages.

First Aid Measures

General Advice: Overall, Creatine Monohydrate presents minimal risk, but adverse reactions may occur in sensitive individuals. Seek medical advice if symptoms arise.

- **Eye Contact:** Rinse thoroughly with water for at least 15 minutes. Remove contact lenses if present and continue rinsing. Seek medical attention if redness or irritation persists.
- **Skin Contact:** Wash affected area with soap and water. If irritation or rash develops, consult a doctor.
- **Inhalation:** Move to fresh air. If discomfort, coughing, or difficulty breathing occurs, seek medical attention.
- **Ingestion:** Rinse mouth with water and drink a glass of water. Seek medical advice if symptoms develop or persist.

Key Symptoms and Effects: May cause minor irritation in some individuals with prolonged exposure to dust or large doses.

Handling and Storage

Handling:

- Avoid creating or inhaling dust.
- Use in a well-ventilated area.
- Avoid contact with skin and eyes during handling of large quantities.

Storage:

- Store in a cool, dry, and well-ventilated area.
- Keep containers tightly sealed to protect from moisture and contamination.
- Avoid exposure to direct sunlight, heat, and humidity to maintain product quality.

Specific Storage Conditions: Store at room temperature, away from incompatible materials such as strong oxidizers.

Exposure Controls/Personal Protection

Exposure Limits:

No specific exposure limits established.

Engineering Controls:

Ensure adequate ventilation if handling large quantities in confined settings to minimize dust exposure.

Personal Protective Equipment (PPE):

- **Eye Protection:** Safety goggles if working in dusty conditions.
 - **Skin Protection:** Gloves may be used when handling large amounts.
 - **Respiratory Protection:** Use a dust mask or respirator if dust levels exceed normal limits.
 - **General Hygiene Measures:** Wash hands thoroughly after handling. Avoid eating, drinking, or smoking near the material.
-

Physical and Chemical Properties

- **Physical State:** Solid (powder or crystalline form)
 - **Appearance:** White, odorless powder
 - **Odor:** Odorless
 - **Melting Point:** Decomposes on heating
 - **Boiling Point:** Not applicable
 - **Density:** Approximately 1.33 g/cm³
 - **Solubility:** Freely soluble in water; insoluble in most organic solvents
 - **pH (1% solution):** Approximately 7
 - **Vapor Pressure:** Negligible at room temperature
 - **Flash Point:** Not flammable
 - **Molecular Weight:** 149.15 g/mol
-

Stability and Reactivity

Chemical Stability: Stable under normal conditions of use and storage.

Conditions to Avoid: Avoid exposure to high humidity, direct sunlight, or elevated temperatures for extended periods.

Materials to Avoid: Avoid strong oxidizing agents and reactive chemicals.

Hazardous Decomposition Products: None under normal handling and storage conditions.

Reactivity: Non-reactive under standard temperature and pressure.

Toxicological Information

Routes of Exposure:

- Skin contact
- Eye contact
- Dust inhalation
- Accidental ingestion

Acute Toxicity:

- **Oral LD50 (Rat):** > 2000 mg/kg (low toxicity)
- **Dermal LD50:** Not established but expected to be low risk.

Chronic Effects: No evidence of significant long-term effects from recommended use.

Irritation: Dust can cause temporary eye or respiratory irritation.

Carcinogenicity: Not classified as carcinogenic by OSHA, IARC, or NTP.

Other Health Effects: Prolonged excessive ingestion may cause dehydration or gastrointestinal discomfort in sensitive individuals.

Disposal Considerations

General Disposal Guidelines:

Appropriate disposal practices depend on local regulations. Dispose of unused or contaminated product through an authorized waste management provider.

Specific Disposal Instructions:

- Prevent entry into waterways or sewer systems.
- Dispose of as non-hazardous waste if no contamination has occurred.

Recycling Information: Recycling is unlikely to apply but consult local authorities before disposal.