

Material Safety Data Sheet (MSDS)

Product Name: Calcium Citrate Malate Powder USP Grade

MSDS Generate Date: 20-05-2017

Revision Date: 30-12-2024

Supplier:

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1. Identification of the Substance and Company

Product Name: Calcium Citrate Malate Powder USP Grade

Chemical Name: Calcium Citrate Malate

Synonyms: CCM, Calcium Citrate-Malate Complex

CAS Number: Mixture (No single CAS assigned)

Chemical Family: Calcium Salt of Citric Acid and Malic Acid

Grade: United States Pharmacopeia (USP)

Recommended Use:

Pharmaceutical excipient, calcium supplement, nutraceutical ingredient, dietary supplements, food fortification, and mineral enrichment.

2. Hazard Identification

GHS Classification: The product is **not classified as hazardous** according to the Globally Harmonized System (GHS).

Potential Health Effects:

Inhalation: Dust may cause temporary irritation of the nose, throat, and upper respiratory tract.

Skin Contact: Prolonged contact may cause slight irritation or dryness.

Eye Contact: Dust particles may cause temporary redness, watering, and mechanical irritation.

Ingestion: Low toxicity under normal conditions of use. Excessive ingestion may cause mild gastrointestinal discomfort.

Environmental Hazards: No significant environmental hazards are anticipated.

Precautionary Statements:

- Avoid breathing dust.
- Avoid excessive dust generation.
- Wear suitable personal protective equipment when handling large quantities.
- Wash hands thoroughly after handling.

3. Composition / Information on Ingredients

Calcium Citrate Malate Powder USP Grade is a highly purified calcium salt complex produced from citric acid, malic acid, and calcium sources under controlled manufacturing conditions.

The product consists primarily of calcium citrate malate and complies with the applicable United States Pharmacopeia (USP) requirements. Minor residual moisture and trace impurities, if present, remain within pharmacopoeial specification limits

4. First Aid Measures

Inhalation: Move the affected person to fresh air. Seek medical attention if irritation persists.

Skin Contact: Wash the affected area thoroughly with soap and water.

Eye Contact: Immediately flush eyes with plenty of clean water for at least 15 minutes. Remove contact lenses if present. Obtain medical attention if irritation continues.

Ingestion: Rinse mouth thoroughly with water. Drink sufficient water. Seek medical advice if discomfort develops.

Most Important Symptoms:

- Mild eye irritation
- Temporary respiratory irritation from dust
- Mild gastrointestinal discomfort following excessive ingestion

5. Fire Fighting Measures

Suitable Extinguishing Media:

- Water spray
- Carbon dioxide (CO₂)
- Dry chemical powder
- Foam

Fire Hazards: The product is non-combustible and does not support combustion.

Hazardous Decomposition Products: Upon thermal decomposition, calcium oxide and carbon oxides may be produced.

Protective Equipment: Firefighters should wear self-contained breathing apparatus and full protective clothing.

6. Accidental Release Measures

Personal Precautions:

- Avoid dust formation.
- Ensure adequate ventilation.
- Wear suitable respiratory protection if necessary.

Environmental Precautions: Prevent excessive quantities from entering drains or natural waterways.

Cleanup Methods: Carefully sweep or vacuum the material while minimizing dust generation. Transfer to suitable containers for recovery or disposal.

7. Handling and Storage

Handling

- Avoid inhalation of dust.
- Avoid excessive dust generation.
- Practice good industrial hygiene.
- Use adequate ventilation.

Storage

Store in tightly closed containers in a cool, dry, and well-ventilated place.

Protect from moisture, direct sunlight, excessive heat, and contamination.

8. Exposure Controls / Personal Protection

- **Engineering Controls:** Provide adequate ventilation and local exhaust where dust may be generated.

Personal Protective Equipment

- **Respiratory Protection:** Dust respirator where airborne dust concentrations are excessive.
- **Eye Protection:** Safety glasses or chemical safety goggles.
- **Hand Protection:** Protective gloves.
- **Skin Protection:** Protective clothing where required.

9. Physical and Chemical Properties

Appearance: White to off-white fine powder

Odor: Odorless

Physical State: Solid powder

pH (10% Suspension): Approximately 5.5–8.0

Melting Point: Decomposes upon heating

Boiling Point: Not applicable

Bulk Density: Varies depending on particle size

Specific Gravity: Approximately 2.0–2.5

Solubility: Slightly soluble in water; readily soluble in dilute mineral acids

Flash Point: Not applicable

Auto-Ignition Temperature: Not applicable

Explosive Properties: None

Oxidizing Properties: None

Vapor Pressure: Not applicable

Vapor Density: Not applicable

10. Stability and Reactivity

Reactivity: Stable under recommended storage conditions.

Chemical Stability: Stable during normal handling and storage.

Conditions to Avoid: Excessive heat, Moisture, Strong acids in concentrated form.

Incompatible Materials: Strong acids and strong oxidizing agents.

Hazardous Decomposition Products: Calcium oxide, carbon monoxide, and carbon dioxide under high-temperature decomposition.

11. Toxicological Information

Acute Toxicity: Low acute toxicity.

Skin Irritation: May cause slight mechanical irritation.

Eye Irritation: Dust may cause temporary irritation.

Respiratory Effects: Dust may cause mild respiratory irritation.

Carcinogenicity: Not classified as carcinogenic.

Mutagenicity: No known mutagenic effects.

Reproductive Toxicity: No known reproductive toxicity.

12. Ecological Information

Ecotoxicity: No significant adverse environmental effects expected.

Persistence and Degradability: Naturally occurring mineral salts are not considered environmentally hazardous.

Bioaccumulative Potential: Not expected to bioaccumulate.

Mobility: Limited mobility in soil; partially soluble in water.

13. Disposal Considerations

Dispose of unused product and contaminated packaging in accordance with local, regional, and national regulations.

Avoid unnecessary release into drains, sewers, or natural water bodies.

14. Transport Information

Calcium Citrate Malate Powder USP Grade is not classified as dangerous goods under national and international transportation regulations. The product is a stable, non-flammable, non-toxic mineral nutritional ingredient intended for pharmaceutical, nutraceutical, and food applications.

When transported in appropriate packaging, it presents no significant hazards during handling or shipment.

UN Number: Not regulated.

UN Proper Shipping Name: Not regulated.

Transport Hazard Class: Not regulated.

Packing Group: Not regulated.

Environmental Hazard: Not classified as environmentally hazardous.

Marine Pollutant: No.

Road Transport (ADR/RID): The product is not regulated as dangerous goods for road or rail transportation. It should be transported in tightly sealed HDPE bags, fiber drums, laminated bags, or other suitable pharmaceutical-grade containers. Protect the packaging from moisture, tearing, contamination, and physical damage.

Sea Transport (IMDG): The product is not classified as dangerous goods under the International Maritime Dangerous Goods (IMDG) Code. It is not considered a marine pollutant and requires no special transport labeling. Containers should remain dry, tightly closed, and protected from seawater, excessive humidity, and contamination throughout shipment.

Air Transport (IATA): Calcium Citrate Malate Powder USP Grade is not regulated as dangerous goods under International Air Transport Association (IATA) regulations. Standard commercial packaging is acceptable provided that the product is securely packed to prevent leakage, contamination, and dust release during air transportation.

Special Transport Precautions:

- Transport only in clean, dry, tightly sealed containers.
- Protect from rain, moisture, and excessive humidity.
- Prevent damage to packaging during loading and unloading.
- Avoid excessive dust generation during handling.
- Keep away from strong acids and incompatible materials.
- Secure cargo properly to prevent movement during transportation.
- Maintain good housekeeping practices throughout transport and storage.

Transport in Bulk According to MARPOL Annex II and IBC Code: Not applicable.

Emergency Transport Information: In case of accidental spillage during transportation, avoid generating airborne dust. Collect spilled material by sweeping or vacuuming into suitable containers for reuse or disposal. Prevent entry into drains, sewers, and watercourses. Personnel performing cleanup should wear appropriate personal protective equipment, including

respiratory protection where excessive dust is present. Dispose of recovered material according to applicable environmental regulations.

15. Regulatory Information

- This product is manufactured to comply with applicable United States Pharmacopeia (USP) quality requirements where specified.
 - The product is not classified as hazardous according to the Globally Harmonized System (GHS).
 - Handle in accordance with applicable occupational safety and environmental regulations.
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16. Other Information

The information contained in this Material Safety Data Sheet is based on current scientific knowledge and industrial experience. It is intended to provide guidance for the safe handling, storage, transportation, and disposal of the product. This information does not constitute a warranty of product properties or suitability for any particular application. Users are responsible for ensuring compliance with all applicable regulations.

- **MSDS Generate Date:** 20-05-2017
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- **Website:** www.rawpharmabiz.com
- MSDS are based on the manufacturer's provided information.