

Material Safety Data Sheet (MSDS)

Product Name: Microcrystalline Cellulose-102 IP/BP/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: Microcrystalline Cellulose-102 IP/BP/USP Grade

Chemical Name: Microcrystalline Cellulose

Synonyms: MCC PH-102, Purified Cellulose, Cellulose Powder

CAS Number: 9004-34-6

EC Number: 232-674-9

Molecular Formula: $(C_6H_{10}O_5)_n$

Molecular Weight: Polymer (Variable)

Recommended Use:

Pharmaceutical excipient for tablets and capsules, binder, diluent, disintegrant, food additive, nutraceutical formulations, cosmetics, and industrial applications.

2. Hazard Identification

GHS Classification: Microcrystalline Cellulose-102 IP/BP/USP Grade 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 respiratory tract.

Skin Contact: May cause mild mechanical irritation after prolonged or repeated contact.

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

Ingestion:: Low toxicity. Ingestion under normal conditions is not expected to cause adverse health effects.

Physical Hazards: Fine dust may form combustible dust-air mixtures if dispersed in high concentrations in confined spaces.

Environmental Hazards: No significant environmental hazards are known under normal conditions of use.

Precautionary Statements:

- Avoid breathing dust.
- Prevent excessive dust generation.
- Ensure adequate workplace ventilation.
- Wear suitable eye protection.
- Wash hands after handling.

3. Composition / Information on Ingredients

Chemical Name: Microcrystalline Cellulose

CAS Number: 9004-34-6

EC Number: 232-674-9

Molecular Formula: $(C_6H_{10}O_5)_n$

Chemical Family: Cellulosic Polymer

Purity: Complies with IP/BP/USP specifications (typically $\geq 99\%$)

The product consists of purified, partially depolymerized cellulose obtained from alpha-cellulose. It contains no hazardous additives under normal pharmaceutical-grade manufacturing specifications.

4. First Aid Measures

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

Skin Contact: Wash affected skin thoroughly with soap and water. Remove contaminated clothing.

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

Ingestion: Rinse mouth with water. Drink water if conscious. Medical attention is generally not required unless large quantities have been consumed.

Most Important Symptoms:

- Mild respiratory irritation
- Temporary eye irritation
- Mechanical skin irritation

5. Fire Fighting Measures

Suitable Extinguishing Media: Water spray, Dry chemical powder, Carbon dioxide (CO₂), Foam.

Fire Hazards: Organic powder may burn under fire conditions. Fine dust may create a combustible dust explosion hazard.

Hazardous Combustion Products: Carbon monoxide, carbon dioxide, and irritating smoke.

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

6. Accidental Release Measures

Personal Precautions:

- Avoid dust generation.
- Ensure adequate ventilation.
- Wear suitable personal protective equipment.

Environmental Precautions: No special environmental hazards are anticipated. Avoid unnecessary release into drains.

Cleanup Methods: Sweep or vacuum carefully while minimizing dust formation. Place recovered material into suitable containers for reuse or disposal.

7. Handling and Storage

Handling

- Avoid inhalation of dust.
- Prevent dust accumulation.

- Use good industrial hygiene practices.
- Wash hands thoroughly after handling.

Storage

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

Protect from moisture, excessive humidity, direct sunlight, and sources of ignition.

8. Exposure Controls / Personal Protection

- **Engineering Controls:** Provide adequate local exhaust ventilation where dust is generated.
- **Personal Protective Equipment**
- **Respiratory Protection:** Dust mask or approved particulate respirator where airborne dust levels are excessive.
- **Eye Protection:** Safety glasses or chemical safety goggles.
- **Hand Protection:** Protective gloves.
- **Skin Protection:** Protective clothing where necessary.

9. Physical and Chemical Properties

Appearance: White to almost white fine, free-flowing powder

Odor: Odorless

Physical State: Solid powder

pH (Suspension): Approximately 5.0–7.5

Melting Point: Does not melt; decomposes upon heating

Boiling Point: Not applicable

Bulk Density: Approximately 0.30–0.45 g/cm³

Specific Gravity: Approximately 1.5–1.6

Solubility: Insoluble in water, ethanol, ether, and most organic solvents; swells in water

Flash Point: Not applicable

Auto-Ignition Temperature: Approximately 300°C (dust dependent)

Explosive Properties: Fine dust may form combustible dust-air mixtures

Oxidizing Properties: None

Vapor Pressure: Not applicable

Vapor Density: Not applicable

10. Stability and Reactivity

Reactivity: Stable under recommended handling and storage conditions.

Chemical Stability: Stable under normal temperatures and pressures.

Conditions to Avoid: Excessive heat, Open flames, Dust accumulation, Moisture.

Incompatible Materials: Strong oxidizing agents.

Hazardous Decomposition Products: Carbon monoxide, carbon dioxide, and smoke.

11. Toxicological Information

Acute Toxicity: Low toxicity.

Skin Irritation: May cause mild mechanical irritation.

Eye Irritation: Dust may cause temporary irritation.

Respiratory Effects: Excessive dust may irritate the respiratory tract.

Carcinogenicity: Not classified as carcinogenic.

Mutagenicity: No known mutagenic effects.

Reproductive Toxicity: No known reproductive hazards.

12. Ecological Information

Ecotoxicity: Not expected to present significant environmental hazards.

Persistence and Degradability: Readily biodegradable.

Bioaccumulative Potential: Not expected to bioaccumulate.

Mobility: Low mobility in soil; insoluble 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, waterways, or the environment.

14. Transport Information

Microcrystalline Cellulose-102 IP/BP/USP Grade is not classified as dangerous goods under ADR/RID, IMDG, IATA, or other applicable international transport regulations. The product is stable, non-toxic, non-corrosive, and non-reactive under normal transportation conditions. Although it presents no significant transport hazard, the powder should be protected from moisture, contamination, excessive heat, and physical damage during shipment. Fine dust should be minimized during loading and unloading because combustible dust-air mixtures may occur under certain industrial conditions.

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 transport. Transport in clean, dry, tightly sealed HDPE bags, fiber drums, paper bags with polyethylene liners, or approved pharmaceutical containers. Protect packages from rain, humidity, contamination, and mechanical damage.

Sea Transport (IMDG): Not regulated under the International Maritime Dangerous Goods (IMDG) Code. Containers should remain tightly sealed and protected from seawater, moisture, and contamination throughout shipment. Maintain dry storage conditions during marine transport.

Air Transport (IATA): Not regulated as dangerous goods under International Air Transport Association (IATA) regulations. Standard commercial packaging is acceptable provided the containers remain tightly sealed and protected against physical damage and moisture.

Special Transport Precautions:

- Keep containers tightly sealed during transportation.
- Protect from moisture, excessive humidity, and direct sunlight.
- Prevent contamination with foreign materials.

- Avoid generating excessive dust during loading and unloading.
- Keep away from strong oxidizing agents and ignition sources.
- Secure cargo properly to prevent package movement and damage.
- Handle packages carefully to preserve pharmaceutical-grade quality.

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

Emergency Transport Information: In case of accidental spillage during transportation, isolate the affected area if necessary and avoid creating airborne dust. Sweep or vacuum the material carefully into suitable containers for recovery or disposal. Prevent excessive dust accumulation. Personnel involved in cleanup should wear appropriate dust masks, gloves, safety glasses, and protective clothing. Dispose of collected material in accordance with applicable environmental regulations.

15. Regulatory Information

- This product should be handled in accordance with applicable pharmaceutical, occupational safety, environmental protection, and chemical handling regulations.
 - Microcrystalline Cellulose-102 IP/BP/USP Grade is not classified as hazardous under the Globally Harmonized System (GHS).
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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. It does not constitute a warranty of product characteristics or suitability for any particular application. Users are responsible for ensuring compliance with all applicable laws and regulations.

- **MSDS Generate Date:** 20-05-2017
- **Revision Date:** 30-12-2024
- **Website:** www.rawpharmabiz.com
- MSDS are based on the manufacturer's provided information.