

Material Safety Data Sheet (MSDS)

Part 1: Chemicals and Company Identification

Product Name: Chitosan Quaternary Ammonium Salt

Generic Name/Synonyms: Hydroxypropyltrimethylammonium chloride chitosan, Quaternized chitosan, HACCP

CAS Number: (123896-84-2)

Chemical Formula: $(C_6H_{11}O_4N-C_6H_{16}NOCl)_n$ - A high molecular weight polymer

Company Name: Shaanxi Saïen Biotechnology Co., Ltd.

Address: Room 301, Unit B, Building 2, Chang'an University Science Park, East Section of Fengcheng Fifth Road, Weiyang District, Xi'an, Shaanxi Province

Emergency Contact Number: 18003483509

Part 2: Hazard Identification

GHS Classification: Not normally classified as a hazardous material.

GHS Label Elements:

Pictogram: Usually not required.

Signal Words: None

Hazard Statement: None

Precautions: Not mandatory.

Other Hazards: May form combustible dust under certain conditions (e.g., high temperature, open flame). No known significant environmental hazards.

Part 3: Ingredient/Composition Information.

Material: Chemically modified polymer

Main component: Chitosan quaternary ammonium salt: $\geq 90\%$

Other components: Moisture, small amount of inorganic salts, etc.

Part 4: First Aid Measures

Inhalation: Move to fresh air. If you feel unwell, seek medical attention. Inhalation is usually not harmful.

Skin contact: Wash with soap and plenty of water. If irritation occurs, seek medical attention.

Eye contact: Rinse eyes with plenty of water for at least 15 minutes, keeping eyelids up. If discomfort or irritation persists, seek medical attention.

Ingestion: Rinse mouth and drink plenty of water. Do not induce vomiting. If you feel unwell, seek medical attention immediately.

Part 5: Firefighting Measures

Extinguishing media: Use water mist, dry powder, carbon dioxide, or foam extinguishers.

Special hazards of fire: This product is not flammable, but may decompose under high heat, releasing toxic fumes, including nitrogen oxides, carbon monoxide, and hydrogen chloride.

Advice for firefighters: Wear self-contained breathing apparatus and full protective clothing.

Part 6: Leakage Emergency Response

Personal Protective Measures: Wear a dust mask, goggles, and gloves.

Environmental Precautions: Prevent product from entering sewers or water sources.

Cleanup Methods: Use a shovel to collect any dried spills into a covered container. Clean up any residue with a damp cloth or mop. Avoid generating dust.

Part 7: Handling and Storage

Handling: Proceed in a well-ventilated area. Avoid dust formation. Take measures to prevent electrostatic discharge.

Storage: Store in a cool, dry, well-ventilated place. Keep container tightly closed. Keep away from incompatible substances.

Part 8: Exposure Controls/Personal Protection

Engineering Controls: Provide adequate ventilation. Local exhaust ventilation may help control dust.

Personal Protective Equipment:

Respiratory Protection: If dust concentration is high, use a dust mask (e.g., N95).

Hand Protection: Wear protective gloves.

Eye Protection: Wear safety goggles.

Skin and Body Protection: Wear dustproof work clothes.

Part 9: Physical and Chemical Properties

Appearance: White to pale yellow powder or flaky solid.

Odor: Odorless or with a slight characteristic odor.

pH (1% aqueous solution): Approximately 6.0 - 8.0 (near neutral)

Melting point/Freezing point: No definite melting point; decomposes upon heating.

Boiling point: Not applicable.

Flash point: Not applicable.

Upper and lower explosive limits: Not applicable.

Vapor pressure: Negligible.

Solubility: Easily soluble in water. Insoluble in organic solvents such as ethanol and acetone.

Part 10: Stability and Reactivity

Stability: Stable under normal environmental and storage conditions.

Conditions to avoid: Strong oxidizers, strong acids, strong bases, high temperatures, and open flames.

Incompatible substances: Strong oxidizers.

Hazardous decomposition products: Decomposes at high temperatures, potentially producing carbon monoxide, carbon dioxide, nitrogen oxides, and hydrogen chlor.

Part 11: Toxicological Information

Acute toxicity: Low toxicity via oral and dermal routes. LD50 (rat, oral) is typically > 2000 mg/kg.

Skin irritation/corrosion: Generally non-irritating to skin.

Eye irritation: Dust may cause mild mechanical irritation.

Sensitization: No information known.

Repeated exposure toxicity: No data available, but based on its biocompatibility, the risk is generally considered low.

Part 12: Ecological Information

Ecotoxicity: Low toxicity to aquatic organisms.

Durability and degradability: Biodegradable, but degrades more slowly than chitosan.

Bioaccumulation: Low bioaccumulation potential due to its high molecular weight polymer nature.

Part 13: Waste Disposal

Products: Dispose of in accordance with local, regional, and national regulations. Incineration or disposal by a qualified waste management company may be considered.

Contaminated packaging: After emptying, recycle or dispose of as general waste.

Part 14: Transportation Information

UN Number: Unlisted.

Official Transport Name: Non-dangerous Goods.

Transport Danger Class: Not classified as dangerous goods.

Packaging Group: Not applicable.

Part 15: Regulatory Information

China's existing list of chemical substances: If already declared, it will be included.

Other regulations: This product may be used in cosmetics, pharmaceuticals, water treatment, and other fields, and must comply with the relevant regulations (such as the "Cosmetic Safety Technical Specifications").

Part 16: Other Information

Disclaimer: The information provided in this MSDS is based on our current knowledge and data and is intended as a safety operating guide only. It does not constitute a guarantee of product performance. Users are responsible for judging and using this information based on their own specific circumstances.