

## Material Safety Data Sheet (MSDS)

**Product Name:** Quaternary Chitosan

**According to Regulation (EC) No. 1907/2006 (REACH)**

**Prepared for:** Promecens Entosystems Private Limited

**Revision Date:** 11.06.2025      **Version:** 1.0

### SECTION 1: Identification of the Substance and Supplier

**Product Name:** Quaternary Chitosan

**Synonyms:** N-[(2-Hydroxy-3-trimethylammonium) propyl] chitosan chloride (HTCC), Quat-Chitosan

**Molecular Formula:** (C<sub>6</sub>H<sub>11</sub>NO<sub>4</sub>)<sub>n</sub> with quaternary ammonium substitution

**CAS Number:** 51395-94-1

**EC Number:** Not assigned

**HS Code:** 3913 9000

**Shelf Life:** 3–5 years (under recommended storage)

#### Identified Uses:

- Antimicrobial coatings
- Agriculture (biostimulant & antifungal applications)
- Biomedical and pharmaceutical materials
- Food packaging films
- Cosmetic ingredients

#### Supplier:

**Promecens Entosystems Private Limited**

3196, Sector-15, Sonapat, Haryana, India 131001

Venture Center, 100 NCL Innovation Park, Pune, Maharashtra, India 411008

**Emergency Contact:** +91-88130-35220 / +91-99966-40773 / +44 7917410065

### SECTION 2: Hazards Identification

#### Classification (CLP Regulation EC No. 1272/2008):

- Not classified as hazardous.

#### Label Elements:

- No hazard pictogram or signal word required.
- No hazard or precautionary statements.

#### Other Hazards:

- Not PBT/vPvB
- May cause mild mechanical irritation to eyes, skin, or respiratory tract in dust form

### SECTION 3: Composition / Information on Ingredients

Component	CAS No.	Concentration
Quaternary Chitosan	51395-94-1	≥ 90%
Impurities (moisture, ash, unreacted chitosan)	-	≤ 10%

## SECTION 4: First Aid Measures

- **Inhalation:** Move to fresh air. Seek medical attention if discomfort occurs.
- **Skin Contact:** Wash with soap and water.
- **Eye Contact:** Rinse thoroughly with water. Remove contact lenses if present.
- **Ingestion:** Rinse mouth. Do not induce vomiting. Seek medical attention if unwell.

### Symptoms:

- Dust may cause mild irritation of eyes, throat, or skin.

## SECTION 5: Firefighting Measures

- **Extinguishing Media:** Water spray, dry chemical, foam, CO<sub>2</sub>
- **Combustion Products:** CO, CO<sub>2</sub>, NO<sub>x</sub>, and other nitrogenous compounds
- **Firefighting PPE:** Full protective clothing with SCBA recommended

## SECTION 6: Accidental Release Measures

- **Personal Precautions:** Avoid dust formation. Use PPE including dust mask and gloves.
- **Environmental Precautions:** Prevent release into drains or waterways.
- **Cleanup Method:** Carefully sweep or vacuum without creating airborne dust. Store in a sealed container for disposal.

## SECTION 7: Handling and Storage

### Safe Handling:

- Minimize dust generation. Ensure proper local ventilation.

### Storage Conditions:

- Store in a tightly sealed container in a dry, cool, well-ventilated area (<30°C).
- Avoid humidity, strong oxidizing agents, and UV exposure.

## SECTION 8: Exposure Controls / Personal Protection

- **Occupational Exposure Limits:** None established
- **Engineering Controls:** Use local exhaust ventilation to minimize exposure
- **Personal Protective Equipment (PPE):**
  - **Eyes:** Safety goggles
  - **Skin:** Protective gloves (e.g., nitrile)
  - **Respiratory:** Dust mask (N95 or equivalent) in dusty environments
  - **Hygiene:** Wash hands and exposed areas thoroughly after handling

## SECTION 9: Physical and Chemical Properties

Property	Value
Appearance	White to pale yellow powder

<b>Odour</b>	Odourless
<b>Solubility</b>	Soluble in water at acidic pH
<b>pH (1% solution)</b>	4.5 – 6.0
<b>Moisture Content (KF)</b>	≤ 10%
<b>Ash Content</b>	≤ 1%
<b>Flash Point</b>	Not applicable
<b>Bulk Density</b>	~0.2 – 0.5 g/cm <sup>3</sup>
<b>Stability</b>	Stable under recommended storage

## SECTION 10: Stability and Reactivity

- **Chemical Stability:** Stable under normal storage conditions
- **Incompatible Materials:** Strong oxidizing agents
- **Conditions to Avoid:** Humidity, direct sunlight
- **Decomposition Products:** CO, CO<sub>2</sub>, NO<sub>x</sub> under fire conditions

## SECTION 11: Toxicological Information

- **Acute Oral Toxicity (rat):** LD<sub>50</sub> > 5000 mg/kg (estimated)
- **Irritation/Sensitization:** Mild mechanical irritation possible
- **Carcinogenicity / Mutagenicity:** Not classified
- **Reproductive Effects:** No known effects
- **Other:** Not sensitizing; no aspiration hazard expected

## SECTION 12: Ecological Information

- **Aquatic Toxicity:** Limited data; likely low toxicity
- **Persistence & Degradability:** Biodegradable
- **Bioaccumulation Potential:** Low
- **PBT/vPvB Assessment:** Not applicable
- **Other Adverse Effects:** None expected under normal conditions

## SECTION 13: Disposal Considerations

- **Product Waste:** Dispose through licensed waste contractor. Avoid landfill when incineration is an option.
- **Packaging Waste:** Decontaminate and recycle if possible, or dispose as hazardous waste in accordance with local regulations

## SECTION 14: Transport Information

Mode	UN Number	Proper Shipping Name	Hazard Class	Packaging Group	Marine Pollutant
<b>ADR/RID</b>	Not regulated	Not dangerous goods	-	-	No
<b>IMDG</b>	Not regulated	Not dangerous goods	-	-	No
<b>IATA</b>	Not regulated	Not dangerous goods	-	-	No

## SECTION 15: Regulatory Information

- **REACH Regulation (EC) No. 1907/2006:** Compliant
- **CLP Regulation (EC) No. 1272/2008:** Not classified
- **TSCA / DSL / AICS:** Check country-specific requirements

## **SECTION 16: Other Information**

### **Disclaimer:**

The information provided in this Safety Data Sheet is believed to be correct as of the date of publication. It is offered in good faith but without warranty. Promecens Entosystems Private Limited shall not be held liable for any damage resulting from handling or contact with this product.