PROMECENS ENTOSYSTEMS PRIVATE LIMITED

MATERIAL SAFETY DATA SHEET (MSDS)

WATER-SOLUBLE CHITOSAN

Prepared in accordance with Regulation (EC) No. 1907/2006 (REACH aligned) and GHS principles

SECTION 1 - Identification of the Substance and Company

Product Name: Water-Soluble Chitosan
Chemical Name: Deacetylated Chitin / Poly(D-glucosamine)
CAS Number: 70694-72-3
EC Number: -
Molecular Formula: ($C_{18}H_{39}ClN_4O_{13}$)
HS Code: 39139090

Recommended Uses:

- Biomaterials research
- Biopolymer formulations
- Cosmetics & cosmeceuticals
- Agricultural biostimulants & coatings
- Biomedical and industrial R&D applications

Supplier:
Promecens Entosystems Private Limited
3196, Sector-15, Sonipat, Haryana, India, 131001

Venture Center, 100 NCL Innovation Park, Dr. Homi Bhabha Rd, Pune, Maharashtra, India, 411008
(Advanced Biopolymer & Biomaterials Manufacturer)

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Shelf Life: 2 years (sealed, dry storage conditions)

SECTION 2 - Hazard Identification

- Classification: Not classified as hazardous according to EC 1272/2008.
- Label Elements: No hazard pictograms required.
- PBT/vPvB: Not considered persistent, bioaccumulative, or toxic at relevant concentrations.

General Statement:
Material is considered low toxicity and non-hazardous under normal industrial handling conditions.

SECTION 3 - Composition / Information on Ingredients

Component	CAS	Concentration
Chitosan (Water-Soluble Grade)	70694-72-3	≥98%

No hazardous additives declared.

SECTION 4 - First Aid Measures

Inhalation: Move to fresh air; seek medical advice if irritation persists.
Skin Contact: Wash with soap and water.
Eye Contact: Rinse cautiously with water for several minutes.
Ingestion: Rinse mouth; consult physician if discomfort occurs.

SECTION 5 - Fire Fighting Measures

Suitable Extinguishing Media:

- Water spray
- Dry chemical
- Carbon dioxide
- Alcohol-resistant foam

Hazardous Combustion Products: Carbon oxides and nitrogen oxides.

SECTION 6 - Accidental Release Measures

- Avoid dust formation.
- Use mechanical collection methods.
- Prevent entry into drains or water bodies.
- Dispose according to local regulations.

SECTION 7 - Handling and Storage

Handling:

- Avoid inhalation of fine powder.
- Ensure adequate ventilation where dust may form.

Storage:

- Store below 30 °C
- Keep container tightly closed
- Dry, cool, well-ventilated area recommended

SECTION 8 - Exposure Controls / Personal Protection

Engineering Controls: Standard industrial hygiene practices.

PPE Recommended:

- Gloves (nitrile suggested)

- Eye protection
- Dust mask where airborne particulates may occur

SECTION 9 - Physical and Chemical Properties

Property	Value
Appearance	Off-white to light brown powder/flakes
Solubility	Soluble in water (~1 g in 20 mL at room temperature)
Odour	Mild / characteristic
Physical State	Solid powder
Ash Content	≤1.0%
Moisture	≤10%
Degree of Deacetylation	≥98%

SECTION 10 - Stability and Reactivity

- Chemically stable under recommended storage conditions.
- Avoid strong oxidizing agents.
- No hazardous reactions expected under normal use.

SECTION 11 - Toxicological Information

- Low acute toxicity (Oral LD50 >10,000 mg/kg in rat studies).
- No known carcinogenicity or mutagenicity.
- No significant skin or eye irritation reported under normal handling.

SECTION 12 - Ecological Information

- Biodegradable natural polymer.
- Avoid large releases into aquatic systems.
- Toxicity values available for aquatic species (rainbow trout, daphnia).

SECTION 13 - Disposal Considerations

Dispose via licensed waste disposal providers in accordance with local regulations. Contaminated packaging should be treated as unused product waste.

SECTION 14 - Transport Information

- Not classified as dangerous goods (ADR/RID, IMDG, IATA).

SECTION 15 - Regulatory Information

Prepared following REACH (EC No. 1907/2006) and applicable safety guidelines. Chemical safety assessment not required for this material class.

SECTION 16 - Additional Notes

This material is part of the **Promecens advanced biopolymer portfolio**, intended for high-performance applications in:

- Biomedicine
- Sustainable materials
- Cosmeceuticals
- Packaging systems
- Advanced biomaterial research

The information presented is based on available knowledge and intended for professional use by qualified personnel.