

## PROMECENS ENTOSYSTEMS PRIVATE LIMITED

### MATERIAL SAFETY DATA SHEET (MSDS)

#### WATER-SOLUBLE CHITOSAN LACTATE

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 (Lenzites Betulina)

**Chemical Name:** Chitosan Oligosaccharide Lactate

**CAS Number:** 148411-57-8

**EC Number:** 604-631-8

**Molecular Formula:** (C<sub>12</sub>H<sub>24</sub>N<sub>2</sub>O<sub>9</sub>)<sub>n</sub>

**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)

#### Emergency Contact:

([abhinav@promecens.com](mailto:abhinav@promecens.com), +91 8813035220, +91 9996640773)

**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) | 148411-57-8 | ≥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) |
| Odor                    | 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 for professional use by qualified personnel.