



NEWAY SINOPHC TECH. LIMITED

ADD:RM. 204, BUILDING 3, NO. 188, AONA RD., CHINA (SHANGHAI) PILOT FREE TRADE ZONE.
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Safety Data Sheet (MSDS)

Safety Data Sheet (MSDS)(According to GB/T 16483 and GB/T 17519; Adapts to GHS, IMDG, IATA Standards)

Pectin (Food Grade, High Methoxyl)

SECTION 1: Identification of the Substance/Mixture and of the Company/Undertaking

1.1 Product Identifiers

- Product Name: Pectin (Food Grade)
- Product Number: PEC-20260225
- Brand: SIGALD
- CAS-No.: 9000-69-5 (Registry No.:180-27-0)
- Synonyms: Fruit Pectin; Food Grade Pectin; 果胶（食品级）

1.2 Details of the supplier of the safety data sheet

- Company: NEWAY SINOPHC TECH. LIMITED
- RM. 204, BUILDING 3, NO. 188, AONA RD., CHINA (SHANGHAI) PILOT FREE TRADE ZONE.
- Telephone: +86-021-50350029
- Fax: +86-021-50350029

1.3 Emergency telephone

Emergency Phone #: +86-021-50350029 (CHEMTREC)

1.4 Relevant Identified Uses of the Substance or Mixture and Uses Advised Against

- Identified Uses: Food additive (gelling agent, thickener, stabilizer, emulsifier) for jam, jelly, beverage, dairy, bakery, candy and canned food; cosmetic thickener (non-food grade).
- Uses Advised Against: Not for pharmaceutical injection; no restricted uses for food grade when used in compliance with national dosage standards.

SECTION 2: Hazards Identification

Summary of Emergency Measures	Off-white free-flowing powder. Non-hazardous. After inhalation: Move to fresh air if dust discomfort occurs. In case of skin contact: Rinse skin with water; no special treatment needed. After eye contact: Rinse with plenty of water for 5-10 minutes; consult a doctor if irritation persists. After swallowing: Rinse mouth with water; no induced vomiting required. Non-combustible. No risk of explosion.
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2.1 GHS Classification

Not a hazardous substance or mixture (GHS 0 category)

2.2 GHS Label Elements

- Hazard Pictogram: None
- Signal Word: None
- Hazard Statements: None
- Precautionary Statements: P261, P271, P302+P352, P405, P501

2.3 Physical and Chemical Hazards

Based on current information: No physical or chemical hazards under normal food use and storage conditions; non-combustible, no explosion risk; stable in acidic food systems.

2.4 Health Hazards

Based on current information: No acute or chronic health hazards; mild respiratory/corneal irritation may occur in sensitive individuals due to dust inhalation or powder contact with eyes. No toxic effect on human body at food dosage; dietary fiber-like properties, non-digestible.

2.5 Environmental Hazards

Based on current information: Environmentally friendly; fully biodegradable; no adverse effects on aquatic/terrestrial organisms; no bioaccumulation potential.

2.6 Other Hazards

No additional hazards identified.

SECTION 3: Composition/Information on Ingredients

- Substance / Mixture: Pure natural plant polysaccharide (extracted from citrus peel/apple pomace)

3.1 Main Components

Formula	Heteropolysaccharide composed of galacturonic acid units (C ₆ H ₁₀ O ₇) _n
Molecular Weight	5×10 ⁴ - 3×10 ⁵ Da
CAS-No.:	9000-69-5
Registry No.:	180-27-0
EC-No.:	232-553-0

Hazardous Ingredients

Component	Classification	Concentration (w/w)
Pectin (Food Grade)	Non-hazardous	≥85.0%
Citric Acid (Stabilizer)	Non-hazardous	1.0-2.0%
Moisture	Non-hazardous	≤10.0%
Ash (Inorganic Salts)	Non-hazardous	≤5.0%
Total Hazardous Ingredients	0%	0%

SECTION 4: First Aid Measures

4.1 Description of First-Aid Measures

- If Inhaled: Move victim to fresh air and rest. No special treatment required if no discomfort; consult a doctor if cough or chest tightness persists.
- In Case of Skin Contact: Rinse skin with running water for 3-5 minutes to remove residual powder. Remove contaminated clothing; wash clothing before reuse. No irritation for normal skin contact.
- In Case of Eye Contact: Rinse eyes thoroughly with plenty of running water for 5-10 minutes (hold eyes open). Remove contact lenses if present. Consult a doctor if redness or irritation occurs.



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- If Swallowed: Rinse mouth with water and drink a small amount of warm water. Do not induce vomiting. No toxic effect for food dosage ingestion; consult a doctor only if gastrointestinal discomfort occurs (extremely rare).

4.2 Most Important Symptoms and Effects, Both Acute and Delayed

- Acute Effects: Mild respiratory irritation (cough) from bulk dust inhalation; mild eye irritation from powder contact in sensitive individuals; no other acute toxic effects.
- Delayed Effects: No known delayed toxic effects based on current data and long-term food use.

4.3 Indication of Any Immediate Medical Attention and Special Treatment Needed

No specific medical treatment required; treat symptomatically if mild irritation occurs.

4.4 Notes to Physician

Inform the physician of the product composition if medical consultation is required.

SECTION 5: Firefighting Measures

5.1 Extinguishing Media

- Suitable Extinguishing Media: Water spray, foam, carbon dioxide (CO₂), dry chemical powder.
- Unsuitable Extinguishing Media: No limitations of extinguishing agents.

5.2 Special Hazards Arising from the Substance or Mixture

- Non-combustible; no hazardous combustion gases or smoke generated at common fire temperature; decomposes only at ultra-high temperature (>300°C) to produce trace non-toxic carbon dioxide and water; no secondary fire/explosion hazard.

5.3 Advice for Firefighters

- No special protective equipment required; wear standard fire-fighting gear (gloves, goggles, dust mask) to prevent dust inhalation during fire fighting; ensure good ventilation at fire scene.

SECTION 6: Accidental Release Measures

6.1 Personal Precautions, Protective Equipment and Emergency Procedures

- No special personal precautions needed for small spills; wear FFP1 dust mask and non-slip shoes for large spills to prevent dust inhalation and slipping on powder.
- Evacuate non-essential personnel if large amount of dust is generated; ensure good ventilation in the area.

6.2 Environmental Precautions

- No special environmental precautions; the product is fully biodegradable and non-polluting. Sweep up spilled powder to avoid direct entry into drinking water sources (no environmental risk if entered).

6.3 Methods and Materials for Containment and Cleaning Up

- Small Spill: Gently sweep up with a brush, collect in a sealed plastic container for reuse; wipe the floor with a damp cloth to suppress dust and prevent resuspension.
- Large Spill: Contain with plastic barriers to prevent spread; transfer to sealed HDPE drums for recycling or disposal; clean the area with a damp mop (avoid dry sweeping).

6.4 Reference to Other Sections

For disposal, see Section 13.

SECTION 7: Handling and Storage

7.1 Precautions for Safe Handling

- Operate in a well-ventilated area; use low-speed mixing during dissolution to avoid dust dispersion and clumping (key for uniform gelling).
- Dissolution Tip: Add powder slowly to stirring water/syrup (do not add water to powder) to prevent formation of insoluble lumps; heat to 60-80°C to accelerate dissolution and gel formation.
- Avoid contact with strong alkalis (pH>8.0) and high temperature (>120°C) for long time to prevent degradation; no reaction with common food acids and sugars.
- Hygiene Measures: Wash hands with soap and water after handling; wear dust mask during bulk processing; do not eat/drink/smoke while operating the product to avoid dust ingestion.

7.2 Conditions for Safe Storage, Including Any Incompatibilities

- Storage Conditions: Store in a cool, dry, well-ventilated food-grade warehouse. Keep container tightly closed to prevent moisture absorption (moisture causes caking and gel strength reduction). Storage temperature ≤30°C, relative humidity ≤65%.
- Incompatibilities: Strong alkalis (pH>8.0), high-concentration strong oxidants; compatible with all common food additives (sugars, acids, sweeteners, preservatives) in food pH range.
- Storage Class (TRGS 510): 13 (Non-Hazardous Solids)
- Shelf Life: 24 months (unopened, under specified storage conditions); 12 months after opening (re-seal tightly and store in dry environment).

SECTION 8: Exposure Controls/Personal Protection

8.1 Control Parameters

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Component	CAS-No.	Value	Control Parameters	Basis
Pectin (Food Grade)	9000-69-5	No occupational exposure limits	-	No relevant national/international exposure standards for food grade

8.2 Exposure Controls

- Engineering Controls: Local exhaust ventilation (LEV) and dust suppression mist spray for large-scale powder processing; closed mixing equipment for dissolution to reduce dust; maintain good ventilation in production area.
- Personal Protective Equipment (PPE):
 - Eye/Face Protection: Safety glasses with side shields recommended for large-scale handling to avoid powder entering eyes.
 - Skin Protection: Nitrile rubber gloves (food grade, ≥0.11mm) recommended for prolonged contact to prevent powder adhesion.

- Respiratory Protection: FFP1 dust mask required for bulk processing/dust cleaning to prevent inhalation; no respiratory protection for small-scale use.
- Foot Protection: Non-slip food-grade safety shoes mandatory for all handling to prevent slipping from spilled powder.
- Control of Environmental Exposure: No special environmental exposure controls.

SECTION 9: Physical and Chemical Properties

9.1 Information on Basic Physical and Chemical Properties

a) Physical State: Solid (powder) b) Color: Off-white to pale yellow c) Odor: Odorless (food grade, no peculiar smell) d) Melting Point/Freezing Point: N/A (decomposes at >300°C, no melting) e) Initial Boiling Point and Boiling Range: N/A (decomposes before boiling) f) Flammability (Liquid/Gas): Non-combustible (solid powder) g) Upper/Lower Flammability or Explosive Limits: Not applicable h) Flash Point: Not applicable i) Autoignition Temperature: >300°C j) Decomposition Temperature: ≥120°C (long-term exposure causes degradation; >300°C for complete decomposition) k) pH Value (25°C): 2.8-4.0 (1% aqueous solution) l) Viscosity (25°C, 1% aq. sol): 50-200 mPa·s | mPa·s | Rotational Viscometry | m) Water Solubility: Soluble in hot water/syrup (forms viscous colloid/gel); insoluble in cold water, ethanol, ether and other organic solvents n) Partition Coefficient (n-octanol/water): < -3.0 (highly hydrophilic) o) Vapor Pressure (25°C): Negligible (<0.00001 hPa) p) Density (25°C, solid): 1.4-1.6 g/cm³ q) Bulk Density: 0.4-0.6 g/cm³ r) Particle Characteristics: 80-120 mesh free-flowing powders s) Explosive Properties: Not explosive (no explosion risk under any normal condition) t) Oxidizing Properties: None (no oxidizing/reducing properties)

9.2 Other Safety Information

Gel formation requires sugar (≥50%) and acidic conditions (pH 2.8-4.0) for high methoxyl pectin; low methoxyl pectin gels with divalent metal ions (Ca²⁺) without high sugar.

SECTION 10: Stability and Reactivity

10.1 Chemical Stability

Stable under recommended storage and food use conditions; excellent stability in acidic systems (pH 2.8-4.0); gel strength remains stable in food processing (pasteurization, boiling); no hydrolysis or decomposition in normal food storage.

10.2 Possibility of Hazardous Reactions

No hazardous reactions under normal food production/use conditions; no polymerization, no decomposition in food pH/temperature range; no reaction with common food additives, metals or non-metal processing equipment.

10.3 Conditions to Avoid

High humidity (moisture absorption/caking), strong alkalis (pH>8.0), high-concentration strong oxidants, long-term high temperature (>120°C), direct sunlight (long-term exposure reduces gel strength).

10.4 Incompatible Materials

Concentrated strong alkalis (NaOH, KOH), high-concentration strong oxidants (KMnO₄, H₂O₂), organic solvents (ethanol >80%); no incompatibility with food-grade raw materials/additives in normal use ratio.

10.5 Hazardous Decomposition Products

Trace non-toxic carbon dioxide and water at ultra-high temperature (>300°C); no hazardous decomposition products under normal food storage/use conditions.

SECTION 11: Toxicological Information

11.1 Information on Toxicological Effects

- Acute Toxicity:
 - Oral (Rat, LD₅₀): >50,000 mg/kg (practically non-toxic, highest level)
 - Dermal (Rabbit, LD₅₀): >20,000 mg/kg
 - Inhalation (Rat, LC₅₀): >50 mg/m³ (4-hour exposure)
- Skin Corrosion/Irritation: No irritation (Rabbit test, 24-hour continuous exposure); no corrosivity, no allergic reaction.
- Serious Eye Damage/Eye Irritation: Mild transient irritation (Rabbit test) only from direct powder contact; no eye damage, irritation reversible after rinsing.
- Respiratory or Skin Sensitization: No skin/respiratory sensitization (long-term human/animal use data, FAO/WHO certified); no allergic reaction in any population (including allergic constitution).
- Germ Cell Mutagenicity: No mutagenic effects (Ames test, chromosome aberration test); negative results in all genetic toxicity tests.
- Carcinogenicity: Not classified as carcinogenic by IARC, EPA, or NTP; FDA/CFDA GRAS certified (no carcinogenic risk).
- Reproductive Toxicity: No adverse reproductive/developmental effects in animal tests; safe for pregnant/lactating women, infants and children at all food dosages.
- Specific Target Organ Toxicity (Single/Repeated Exposure): No target organ toxicity for any population; non-digestible polysaccharide, passes through the digestive tract unchanged (dietary fiber-like), no absorption, no calorie intake.
- Aspiration Hazard: Low (free-flowing powder with moderate bulk density, dust inhalation causes mild cough only).

11.2 Additional Information

Approved by FAO/WHO/Codex Alimentarius, ADI: Unrestricted (no daily intake limit); the toxicological properties have been sufficiently studied for safe food and industrial use with long-term proven safety.

SECTION 12: Ecological Information

12.1 Toxicity

- Fish (Zebrafish, LC₅₀): >100,000 mg/L (96-hour exposure)
- Daphnia (EC₅₀): >50,000 mg/L (48-hour exposure)

- Algae (EC₅₀): >100,000 mg/L (72-hour exposure) No toxic effects on aquatic organisms at any concentration; non-toxic to soil microorganisms, plants and terrestrial animals; can be used as microbial nutrient.

12.2 Persistence and Degradability

Fully biodegradable (BOD₅ /COD >0.90) in aquatic/soil environments; degraded by microorganisms (pectinase-producing bacteria/fungi) into monosaccharides and inorganic salts within 5-7 days; further decomposed into CO₂ and water; no residual pollution, no persistent organic pollutants.

12.3 Bioaccumulative Potential

None; high molecular weight polysaccharide, cannot be absorbed by organisms; rapidly degraded by microorganisms in the environment; no bioaccumulation in food chain, aquatic/terrestrial organisms or soil.

12.4 Mobility in Soil

Low mobility (powder state, insoluble in cold water); dissolved colloid is rapidly degraded by soil microbes; no long-term accumulation, no groundwater pollution risk.

12.5 Results of PBT and vPvB Assessment

Not classified as PBT/vPvB (fully biodegradable, practically non-toxic, no bioaccumulation); environmentally friendly plant polysaccharide derived from renewable agricultural by-products.

12.6 Other Adverse Effects

Degrades into microbial nutrients, promotes the growth of beneficial soil/aquatic microorganisms; no adverse impact on ecosystem balance; raw materials (citrus peel/apple pomace) are agricultural by-products, realizing resource recycling.

SECTION 13: Disposal Considerations

13.1 Waste Treatment Methods

- Product Waste: Uncontaminated waste can be fully reused as food additive; slightly contaminated waste can be used as microbial culture nutrient (polysaccharide source) or animal feed additive; heavily contaminated waste can be disposed of as non-hazardous solid waste in accordance with local regulations; aqueous colloid waste can be directly treated by biological wastewater treatment systems (rapidly biodegradable).
- Packaging Waste: Rinse empty containers with pure water (rinse water usable for food production if qualified); dispose of rinsed packaging as food-grade non-hazardous waste or recycle (HDPE/paper/aluminum foil/carton); no special disposal requirements.

13.2 Disposal Notes

No special disposal requirements; incineration is acceptable (produces only CO₂ and water, no toxic fumes); landfilling is also acceptable (rapidly degraded by soil microorganisms); no neutralization or other pretreatment needed for any waste (non-toxic, non-corrosive).

SECTION 14: Transport Information

14.1 UN Number

ADR/RID: -; IMDG: -; IATA-DGR: -

14.2 UN Proper Shipping Name

ADR/RID: Not dangerous goods; IMDG: Not dangerous goods; IATA-DGR: Not dangerous goods

14.3 Transport Hazard Class(es)

ADR/RID: -; IMDG: -; IATA-DGR: -

14.4 Packaging Group

ADR/RID: -; IMDG: -; IATA-DGR: -

14.5 Environmental Hazards

ADR/RID: No; IMDG Marine Pollutant: No; IATA-DGR: No

14.6 Special Precautions for User

Transport at $\leq 30^{\circ}\text{C}$; use sealed, moisture-proof food-grade packaging; avoid rain, moisture, direct sunlight and package collision (prevent moisture absorption/caking and package damage); use pallets for loading to avoid ground contact and moisture absorption.

14.7 Incompatible Materials

Avoid transport with strong alkalis, high-concentration strong oxidants and organic solvents (separate loading); can be transported with other food additives/food raw materials (no separation required).

Further Information: Not classified as dangerous under transport regulations.

SECTION 15: Regulatory Information

15.1 Safety, Health and Environmental Regulations/Legislation Specific for the Substance or Mixture

- National Regulations (China):
 - Hazardous Chemical Safety Management Regulation (Non-hazardous classification)
 - National Food Safety Standard for Food Additives (GB 2760-2021) – approved as gelling agent, thickener, stabilizer, emulsifier (**ADI unrestricted, no dosage limit**)
 - National Food Safety Standard for Pectin (GB 1886.248-2016) – strict quality requirements for food grade
 - Food Hygiene Law of the People's Republic of China
- International Regulations:
 - GHS Classification (Rev. 9): Non-hazardous
 - REACH (EU): Registered; not in SVHC Candidate List; complies with EC 1333/2008 (ADI unrestricted)
 - TSCA (US): Listed on the TSCA Inventory; FDA GRAS certified (21 CFR 172.660); no dosage limit
 - Codex Alimentarius (FAO/WHO): Approved as food gelling agent/thickener (Codex STAN 192-1995), ADI: Unrestricted (no daily intake limit)

15.2 Other Regulations



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Comply with local food safety/transport/environmental regulations; follow GB 1886.248-2016 for food grade quality control; no special labeling requirement for finished food (non-toxic, no allergen).

SECTION 16: Other Information

- Further Information: This MSDS is based on current scientific knowledge and complies with GB/T 16483, GB/T 17519, and GHS standards. It is intended for safe handling, storage, transport, and disposal of food-grade Pectin. The supplier is not liable for damage caused by improper use, storage or non-compliance with safety precautions.
- Revision Date: 25 FEB 2026

