Safety Data Sheet (MSDS)

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

Xanthan gum (Food Grade)

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

1.1 Product Identifiers

- Product Name: Xanthan gum (Food Grade)
- Product Number: XG-20260220
- Brand: SIGALD
- CAS-No.: 11138-66-2
- Synonyms: Xanthan polysaccharide; Food Grade Xanthan gum; 黄原胶（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 (thickener, stabilizer, emulsifier, suspending agent) for beverage, dairy, condiment, bakery, meat product and aquatic product; cosmetic/industrial 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.**

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.

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.

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 microbial polysaccharide (fermented by Xanthomonas campestris)

3.1 Main Components

Formula	High molecular weight anionic polysaccharide $(C_{35}H_{49}O_{29})_n$
Molecular Weight	2×10^6 - 5×10^6 Da
CAS-No.:	11138-66-2
EC-No.:	234-394-2

Hazardous Ingredients

Component	Classification	Concentration (w/w)
Xanthan gum (Food Grade)	Non-hazardous	≥92.0%
Potassium/Sodium Chloride (Neutralizer)	Non-hazardous	5.0-7.0%
Moisture	Non-hazardous	≤10.0%
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.

- 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 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 (CO_2), 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℃) 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 dissolution).
- Dissolution Tip: Add powder slowly to stirring water (do not add water to powder) to prevent formation of insoluble lumps; can be dissolved in cold/hot water (stable viscosity).
- Avoid contact with strong oxidants and high temperature (>120℃) for long time to prevent viscosity reduction; no reaction with common food additives.
- 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 viscosity reduction). Storage temperature ≤30℃, relative humidity ≤65%.
- Incompatibilities: Strong oxidants (high concentration), strong mineral acids (pH<2.0); compatible with all common food additives (sugars, sweeteners, acidulants, 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

Component	CAS-No.	Value	Control Parameters	Basis
Xanthan gum (Food Grade)	11138-66-2	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 yellowc) Odor: Odorless (food grade, no peculiar smell)d) Melting Point/Freezing Point: N/A (decomposes at >300℃, 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 applicableh) Flash Point: Not applicablei) Autoignition Temperature: >300℃j) Decomposition Temperature: ≥120℃ (long-term exposure causes viscosity reduction; >300℃ for complete decomposition)k) pH Value (25℃): 6.0-8.0 (1% aqueous solution)l) Viscosity (25℃): ≥1200 mPa·s (1% aqueous solution); stable viscosity in 0-100℃ waterm) Water Solubility: Soluble in cold/hot water (forms transparent viscous colloid); insoluble in ethanol, ether, chloroform and other organic solventsn) Partition Coefficient (n-octanol/water): < -3.0 (highly hydrophilic)o) Vapor Pressure (25℃): Negligible (<0.00001 hPa)p) Density (25℃, solid): 1.5-1.7 g/cm³q) Bulk Density: 0.5-0.7 g/cm³r) Particle Characteristics: 80-120 mesh free-flowing powders) Explosive Properties: Not explosive (no explosion risk under any normal condition)t) Oxidizing Properties: None (no oxidizing/reducing properties)

9.2 Other Safety Information

No additional safety-related physical/chemical data.

SECTION 10: Stability and Reactivity

10.1 Chemical Stability

Stable under recommended storage and food use conditions; excellent temperature/pH/shear stability (viscosity remains stable in 0-100℃ water, pH 2.0-11.0 food system and high shear mixing); no hydrolysis or decomposition in normal food processing and storage.

10.2 Possibility of Hazardous Reactions

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

10.3 Conditions to Avoid

High humidity (moisture absorption/caking), high concentration strong oxidants, strong mineral acids (pH<2.0), long-term high temperature (>120℃), direct sunlight (long-term exposure reduces viscosity).

10.4 Incompatible Materials

Concentrated strong mineral acids (HCl, H_2SO_4), high-concentration strong oxidants ($KMnO_4$, H_2O_2), 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℃); no hazardous decomposition products under normal food storage/use conditions.

SECTION 11: Toxicological Information

11.1 Information on Toxicological Effects

- Acute Toxicity:
  - Oral (Rat, LD_{50}): >50,000 mg/kg (practically non-toxic, highest level)
  - Dermal (Rabbit, LD_{50}): >20,000 mg/kg
  - Inhalation (Rat, LC_{50}): >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, LC_{50}): >100,000 mg/L (96-hour exposure)
- Daphnia (EC_{50}): >50,000 mg/L (48-hour exposure)

- Algae (EC_{50}): >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 (BOD_5 /COD >0.90) in aquatic/soil environments; degraded by microorganisms (xanthan lyase-producing bacteria/fungi) into monosaccharides and inorganic salts within 5-7 days; further decomposed into CO_2 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, low water solubility in undissolved state); 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 microbial polysaccharide derived from renewable raw materials.

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 for fermentation are renewable, no resource depletion risk.

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 CO_2 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 ≤30℃; 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 acids, 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 thickener, stabilizer, emulsifier, suspending agent (**ADI unrestricted, no dosage limit**)
  - National Food Safety Standard for Xanthan gum (GB 1886.182-2016) – 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 172.695); no dosage limit
  - Codex Alimentarius (FAO/WHO): Approved as food thickener/stabilizer (Codex STAN 192-1995), ADI: Unrestricted (no daily intake limit)

15.2 Other Regulations

Comply with local food safety/transport/environmental regulations; follow GB 1886.182-2016 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 Xanthan gum. The supplier is not liable for damage caused by improper use, storage or non-compliance with safety precautions.
- Revision Date: 20 FEB 2026