

Technical Data Sheet (TDS)

1. Product Overview

- Product Name: Xanthan gum (Food Grade)
- English Name: Xanthan gum
- CAS Number: 11138-66-2
- Formula: $(C_{35} H_{49} O_{29})_n$
- Molecular Weight: $2 \times 10^6 - 5 \times 10^6$ Da
- Product Characteristics: Food-grade Xanthan gum is a high molecular weight anionic polysaccharide fermented by *Xanthomonas campestris* with corn starch as raw material, refined by extraction, purification, drying and crushing. It is an excellent multifunctional food additive with **excellent thickening, stabilizing, emulsifying and suspending properties**, and unique temperature/pH/shear stability. Dissolves in cold/hot water to form transparent viscous colloid, non-toxic, tasteless, ADI unrestricted (FAO/WHO), safe for all population. Fully biodegradable, environmentally friendly, widely used in global food industry.

2. Technical Specifications (Complies with Industrial Standards)

Item	Specification
Appearance	Off-white to pale yellow free-flowing powder, no caking
Xanthan gum Content	≥ 92.0%
Moisture Content	≤ 10.0%
Ash Content (as Na ₂ O)	10.0-16.0%
pH Value (25°C, 1% aqueous solution)	6.0-8.0
Viscosity (25°C, 1% aq. sol)	≥ 1200 mPa·s
Insoluble Substances in Water	≤ 1.0%
Heavy Metals (Pb)	≤ 0.5 ppm
Heavy Metals (As)	≤ 0.1 ppm
Total Bacterial Count	≤ 1000 CFU/g
Yeast & Mold	≤ 100 CFU/g
E. coli / Salmonella	Negative
Water Solubility	Soluble in cold/hot water (viscous colloid), insoluble in organic solvents
Temperature Stability	Stable in 0-100°C (viscosity retention ≥95%)
pH Stability	Stable in pH 2.0-11.0 (viscosity retention ≥90%)
Shear Stability	Excellent (viscosity recovers quickly after high shear)

3. Product Advantages

1. **Excellent Comprehensive Performance:** Integrates thickening, stabilizing, emulsifying and suspending functions; one product replaces multiple food additives, reduces production cost and formula complexity, and improves product quality stability.
2. **Unique Stability:** Unmatched temperature/pH/shear stability – viscosity remains stable in cold/hot water (0-100°C), wide pH range (2.0-11.0) and high shear mixing; no viscosity loss in food processing (boiling, sterilization, homogenization) and storage.
3. **Good Solubility:** Dissolves quickly in **cold water and hot water** (no need for heating), forms transparent colloid with no precipitation; easy to use, suitable for various food production processes.
4. **Ultra-Safe & Wide Adaptability:** FAO/WHO ADI unrestricted (no daily intake limit); safe for all population including infants, pregnant women and allergic constitution; can be used in all types of food with no dosage limit.
5. **Good Compatibility:** Compatible with all common food additives (sugars, sweeteners, acidulants, preservatives, emulsifiers, other colloids) and food raw materials; no reaction with metal/non-



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metal processing equipment (no corrosion, no residue); synergistic effect with carrageenan, konjac gum, guar gum to improve performance.

- 6. **Environmental Friendly & Renewable:** Fermented by renewable corn starch, fully biodegradable (no residual pollution); waste can be used as microbial nutrient/animal feed – green and sustainable.
- 7. **Long Shelf Life & Easy Storage:** Free-flowing powder with low bulk density, no caking under dry storage conditions; 24 months long shelf life for unopened products, low storage cost.

4. Application Fields

Food-grade Xanthan gum is a universal multifunctional food colloid (ADI unrestricted, no dosage limit), suitable for **all types of food and beverage** (including infant food and functional food), with core applications in thickening, stabilizing, emulsifying and suspending:

- **Beverage Industry:** Fruit juice, fruit tea, plant protein drink (soy milk, almond milk), carbonated beverage, sports drink, dairy beverage; as stabilizer/suspending agent, prevents pulp/particle/oil precipitation, improves mouthfeel and stability, resists high shear homogenization.
- **Dairy & Dessert Industry:** Yogurt, ice cream, pudding, jelly, mousse, cream; as thickener/stabilizer, improves smoothness and creaminess, prevents ice crystal formation (ice cream), avoids whey precipitation (yogurt), enhances structural stability.
- **Condiment Industry:** Soy sauce, vinegar, salad dressing, tomato sauce, hot pot base, mayonnaise, mustard; as thickener/emulsifier, improves viscosity and emulsification stability, prevents oil-water separation, enhances coating property and taste, stable in acid/alkali/salt system.
- **Meat & Aquatic Product Industry:** Sausage, ham, meat ball, fish ball, canned aquatic products; as binder/stabilizer, improves water retention and oil retention, enhances product elasticity and tenderness, prevents disintegration during cooking and storage.

5. Usage Methods

Food Type	Recommended Dosage	Core Function
Beverage/Plant Protein Drink	0.05-0.3%	Stabilization/suspension
Yogurt/Ice Cream/Pudding	0.1-0.5%	Thickening/stabilization
Salad Dressing/Tomato Sauce/Hot Pot Base	0.2-1.0%	Thickening/emulsification
Meat Ball/Fish Ball/Sausage	0.3-1.5%	Binding/water retention
Cake/Filling/Jam	0.1-0.8%	Thickening/water retention
Infant Nutritious Food/Solid Beverage	0.05-0.2%	Thickening/suspension

6. Packaging & Storage

- Small Batch: 1kg/5kg/10kg – Food-grade aluminum foil vacuum bags (moisture-proof, oxygen-free) with outer carton; for small-scale production/laboratory/retail use.
- Standard Batch: 25kg – Food-grade HDPE plastic drums (sealed) with inner plastic film, or woven bags with inner aluminum foil bag; free-flowing powder, for medium/large-scale food production.
- Bulk Batch: 500kg/1000kg – Food-grade FIBC bulk bags (moisture-proof PE liner, sealed valve); for large-scale industrial production and export.
- Custom Packaging: 200g/500g food-grade small vacuum bags available upon request for household and small-batch food preparation.

7. Safety & Protection

- The product is food-grade, non-toxic, non-irritating; wear **FFP1 dust mask, safety goggles and nitrile rubber gloves** during bulk processing (prevent dust inhalation and powder adhesion); wear non-slip food-grade safety shoes to prevent slipping.
- Operate in a well-ventilated area with dust suppression facilities (mist spray); avoid dry sweeping of spilled powder (reduce dust dispersion); wash hands with soap and water after handling.
- Avoid direct contact of powder with eyes for sensitive individuals; rinse with plenty of water for 5-10 minutes if contact occurs; consult a doctor if irritation persists.