

Technical Data Sheet (TDS)

- Xylo-Oligosaccharide 50% (Powder)

Product Name: Xylo-Oligosaccharide 50% (Powder) **English Name:** Xylo-Oligosaccharide 50% (Powder) **CAS Number:** 87-89-8 (Xylose, monomer reference) **Main Components:** Xylo-oligosaccharides (DP 2-10, ≥50%), Food-grade anhydrous anti-caking excipient **Molecular Weight:** Variable (280.24 - 1501.38 Da) **Revision Date:** 28 FEB 2026

1. Product Overview

SIGALD Xylo-Oligosaccharide 50% (Powder) is a food-grade natural prebiotic powder produced by enzymatic hydrolysis of non-GMO corncob/hardwood xylan, followed by purification, concentration and spray-drying with food-grade anhydrous anti-caking excipient. The product is a free-flowing white powder with mild sweet taste, containing high-purity xylo-oligosaccharides (DP 2-10) that are not digested by human/animal digestive enzymes but selectively fermented by beneficial gut flora.

As a high-efficiency prebiotic, it is 10-20 times more effective than inulin/FOS in promoting the growth of Bifidobacteria and Lactobacilli. This powder formulation features excellent storage stability, anti-caking performance and easy incorporation into solid food/feed/supplement systems. It is gluten-free, non-GMO, Halal & Kosher certified, and complies with GB/T 23532, FDA GRAS and EU food regulations, suitable for a wide range of food, dietary supplement and animal feed applications.

Core Advantages:

- **High-efficiency Prebiotic:** Selective proliferation of beneficial gut flora, improves intestinal microecology.
- **Low Calorie:** ~0.7 kcal/g, 40% the sweetness of sucrose, ideal for low-sugar/reduced-calorie products.
- **Excellent Stability:** Heat/acid stable (121 °C autoclaving, pH 2.5-8.0), suitable for all food processing technologies.
- **Easy to Use:** Free-flowing powder, no caking, readily soluble in water, compatible with all solid food/feed ingredients.
- **Tooth-friendly:** Non-cariogenic (not metabolized by oral bacteria that cause dental caries).
- **Environmentally Friendly:** Readily biodegradable, no environmental pollution risk.

2. Technical Specifications (Complies with GB/T 23532 & Food Grade Standard)

Parameter	Specification	Test Method
Appearance	White to off-white free-flowing powder	Visual Inspection
Odor/Taste	Mild sweet, no off-odor/taste	Sensory Evaluation
Xylo-Oligosaccharide (DP 2-10)	≥50.0% (Typical:56.2%)	HPLC-RID
Xylose Content	≤5.0% (Typical:1.8%)	HPLC-RID
Moisture Content	≤8.0% (Typical:4.5%)	Karl Fischer Titration
Ash Content	≤0.5% (Typical:0.15%)	Gravimetric (550°C)
pH Value (5% aqueous, 25°C)	4.0-6.0 (Typical:5.0)	Digital pH Meter
Particle Size (D50)	80-120 mesh	Sieve Method
Bulk Density	0.60-0.75 g/cm ³	Pycnometer Method
Heavy Metals (Pb)	≤0.1 ppm	ICP-MS
Heavy Metals (As)	≤0.05 ppm	ICP-MS
Microbiology	Total Plate Count ≤100 CFU/g	GB 4789.2
	Yeast & Mold ≤10 CFU/g	GB 4789.15
	E. coli/Salmonella: Negative	GB 4789.3/4
Heat Stability	≥90% retention at 121 °C (30mins)	HPLC-RID
Acid Stability	≥90% retention at pH 2.5 (25°C, 24h)	HPLC-RID

3. Application Fields & Recommended Dosage



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The product is a versatile functional prebiotic powder suitable for food, dietary supplements, baby food and animal feed. **Dosage can be adjusted according to product type and functional requirements.**

Industry	Application Scenario	Recommended Dosage (%)	Core Function
Bakery & Confectionery	Bread, cake, biscuit, candy, chocolate	0.5-3.0	Prebiotic, low-calorie sweetener, texture modifier
Dairy Products	Yogurt, milk powder, cheese, ice cream	1.0-5.0	Prebiotic synergy with probiotics, gut health
Dietary Supplements	Tablets, capsules, powder sachets, health food	5.0-60.0	Core prebiotic ingredient, intestinal regulation
Baby Food	Infant formula milk powder, complementary food	0.5-1.0	Gentle prebiotic, intestinal health (follow local regs)
Snack Food	Nutrition bars, instant cereal, puffed food	1.0-4.0	Functional fortification, low-sugar improvement
Animal Feed	Livestock/poultry feed, pet food, aquafeed	0.1-1.0	Improve animal intestinal health, promote growth

4. Usage Guidelines & Processing

- Solubility:** Freely soluble in water (dissolves instantly without clumping); insoluble in organic solvents (ethanol/ether).
- Solid System Incorporation:** Can be directly mixed with other solid ingredients (flour, milk powder, excipients) at any stage of production; uniform mixing is recommended for consistent efficacy.
- Liquid System Incorporation:** Dissolve in water first (any ratio) then add to liquid formulations (beverages, dairy); dissolves rapidly at room temperature (no heating required).
- Processing Compatibility:** Suitable for all food processing technologies (baking, boiling, sterilization, extrusion, freeze-drying); no degradation at high temperature ($\leq 121^{\circ}\text{C}$) or acidic pH (≥ 2.5).

5. Packaging & Storage

Grade	Packaging	Application Scenario
Sample	100g/500g Aluminum Foil Bags	Formulation testing, small-batch trial
Commercial	1kg/5kg Aluminum Foil Vacuum Bags	Food factory small-batch production, supplement processing
Bulk	20kg/25kg Kraft Paper Composite Drums (inner aluminum foil)	Industrial large-scale production, feed manufacturing
Custom	Customized packaging (50g-10kg)	According to customer requirements (OEM/ODM)

6. Quality Assurance & Regulatory Compliance

- Manufacturing Standards:** Produced in ISO 22000 (HACCP), ISO 9001 and GMP certified food-grade facilities; spray-drying process meets food safety requirements, no solvent residues.
- Raw Material Control:** Derived from non-GMO corncob/hardwood xylan; no pesticides, herbicides or heavy metal contaminants; food-grade anti-caking excipient (compliant with GB 2760).
- Regulatory Compliance:**
 - China: GB 2760-2021, GB/T 23532, SC/QS certified; approved prebiotic food/feed additive.
 - US: FDA GRAS (GRN No.173), TSCA listed, Kosher certified, 21 CFR compliant.
 - EU: REACH registered, EU Novel Food Regulation compliant, Halal certified, EC 1333/2008 compliant.
 - International: Codex Alimentarius compliant, no global regulatory restrictions.