Technical Data Sheet (TDS)

- Maltodextrin (Food Grade)
Issue Date: 27 FEB 2026 | Version: V1.0

1. Product Overview

- **Product Name**: Maltodextrin (Food Grade)
- **CAS Number**: 9050-36-6
- **EINECS/EC Number**: 232-940-4
- **Chemical Formula**: $(C_6H_{10}O_5)_n \cdot xH_2O$ (n=3-20, DE 10-20)
- **DE Value (Dextrose Equivalent)**: 10-20
- **Product Characteristics**: High-purity food-grade maltodextrin (DE 10-20) produced by enzymatic hydrolysis of corn starch and spray drying; white free-flowing powder, odorless, mild sweet taste, slightly hygroscopic and 100% soluble in water. As a **multi-functional natural food additive**, it has excellent bulking, thickening, sweetening, moisture retention and film-forming properties; low sweetness (20-30% of sucrose), low calorie, easily digested and absorbed. It is a neutral carbohydrate, compatible with all common food ingredients, stable under various food processing conditions, and widely used as a core additive in food formulation. FDA GRAS/EC E1400 certified; compliant with GB 1886.294-2021/GB 2760/FDA/EC/CAC standards, the most commonly used bulking agent in food industry.
- **Core Application**: Food additive (bulking agent, sweetener, thickener, moisture retainer) for dairy, bakery, confectionery, beverage, meat, seasoning, infant food, functional food and processed food industries; carrier for food additives (flavors, pigments, vitamins), film-forming agent for coated food, anti-caking agent for powder food.

2. Technical Specifications (Compliant with GB 1886.294-2021 & FCC/USP)

Item	Standard Requirement
Appearance	White free-flowing powder, no caking
Odor/Taste	Odorless, mild sweet, no off-taste
DE Value	10.0-20.0
Moisture (Loss on Drying)	≤6.0%
Ash Content	≤0.5%
pH Value (10% aqueous solution, 25℃)	4.5-6.5
Reducing Sugars (as Dextrose)	≤20.0%
Total Carbohydrates	≥98.0%
Water Solubility	100% soluble, clear solution
Heavy Metals (as Pb)	≤1 ppm
Arsenic (As)	≤0.5 ppm
Cadmium (Cd)	≤0.05 ppm
Mercury (Hg)	≤0.01 ppm
Iron (Fe)	≤10 ppm
Total Bacterial Count	≤1000 CFU/g
Yeast & Mold	≤100 CFU/g
E. coli	Negative in 1g
Salmonella	Negative in 25g
Temperature Stability	Stable at 0-120℃ (food processing temperature)
pH Stability	Stable at 3.0-8.0
Storage Stability	24 months (unopened), 6 months (after opening)

3. Product Advantages

1. **Mild Sweetness & Low Calorie**: Sweetness only 20-30% of sucrose, low calorie (3.8 kcal/g); suitable for low-sugar, low-calorie food formulation, no bitter aftertaste.

2. **Excellent Bulking Property**: Fine powder with good flowability; ideal bulking agent for powder food, tablets and capsules; improves product texture and appearance without affecting original flavor.
3. **Strong Moisture Retention**: Absorbs and retains moderate moisture; prevents food from drying, hardening and caking; extends food shelf life by 30-50%.
4. **Good Thickening & Film-Forming**: Forms a transparent viscous solution in water; acts as a mild thickener for liquid food; forms a thin protective film on food surface (coated food), preventing oxidation and moisture loss.

4. Application Fields & Recommended Dosage

(Adjust dosage according to food type, formulation requirement and processing technology; all dosages are **w/w** based on food raw materials, comply with GMP dosage limits for all food categories.)

Application Field	Typical Products	Recommended Dosage	Core Effect
Beverage	Fruit juice, plant beverage,	2.0-8.0%	Thickening, stabilization,
Dairy Products	Yogurt, ice cream,	3.0-10.0%	Moisture retention, texture
Bakery	Bread, cake, pastry,	5.0-15.0%	Bulking, moisture retention,
Confectionery	Candy, chocolate, jelly,	10.0-30.0%	Bulking, sweetness adjustment,
Meat & Aquatic	Ham, sausage, frozen	1.0-5.0%	Water retention, fat binding,
Seasoning & Sauce	Powder seasoning, sauce,	5.0-20.0%	Bulking, thickening, anti-
Infant Food &	Infant formula, nutritional	5.0-25.0%	Bulking, energy supplement,
Coated Food	Nuts, candy, fried food	2.0-8.0%	Film-forming, anti-oxidation,

5. Usage Methods & Formulation Guidelines

Key Tip: Maltodextrin is 100% soluble in water with good flowability; it can be directly dissolved in water for liquid food or dry mixed with solid ingredients for powder food; no special dissolution conditions (cold/hot water all applicable), no clumping when added slowly.

1. **Aqueous Dissolution Method (Liquid Food)**: Add maltodextrin powder to room temperature/hot food-grade water (50-80℃ for faster dissolution) with stirring; stir for 3-5 minutes until fully dissolved (clear solution, no precipitation); add the solution to food and mix evenly.
2. **Dry Mixing Method (Solid Food)**: Premix maltodextrin powder with other dry food ingredients (flour, starch, sugar, salt, seasoning) at any ratio; mix thoroughly to ensure uniform dispersion (good flowability, no agglomeration).

6. Packaging, Storage & Transportation

- **Small Packaging**: 1 kg/5 kg food-grade sealed paper bags with inner PE liner (for small food factories, catering and laboratory use)
- **Standard Packaging**: 25 kg food-grade HDPE plastic drums or paper bags (inner PE liner, sealed cover; for industrial batch production)
- **Bulk Packaging**: 500 kg/1000 kg food-grade jumbo bags (moisture-proof film, dust-proof; for large food factories with bulk handling)
- **Labeling**: All packages are labeled with product name, CAS number, DE value, net weight, "Keep Dry" and storage instructions.

7. Quality Assurance & Technical Support

1. **Production Standards**: Manufactured in a GMP/HACCP-compliant food-grade production workshop; adopts advanced enzymatic hydrolysis and spray drying technology (no chemical solvents/additives); meets ISO 9001 (Quality Management) and ISO 22000 (Food Safety) standards; DE value 10-20, high purity and good flowability.
2. **Batch Testing**: Every batch of maltodextrin is subject to **strict multi-index testing** (physical, chemical, microbiological, DE value, heavy metals); a detailed Certificate of Analysis (COA) is provided with each shipment to ensure compliance with GB 1886.294-2021/FCC/USP standards.