Safety Data Sheet (MSDS)

- Maltodextrin (Food Grade)

(Compliant with GB/T 16483, GB/T 17519; Adapts to GHS Rev.9, IMDG, IATA Standards)**Revision Date: 27 FEB 2026**

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

1.1 Product Identifiers

- Product Name: Maltodextrin (Food Grade)
- Product Number: MD-20260227
- Brand: SIGALD
- CAS-No.: 9050-36-6
- EINECS/EC-No.: 232-940-4
- MDL Number: MFCD00131710
- Synonyms: Dextrin Maltodextrin; Food Grade Bulking Agent; Hydrolyzed Starch Powder1.2 Details of the supplier of the safety data sheet
- Company: NEWAY SINOPHC TECH. LIMITED
- Address: RM. 204, BUILDING 3, NO. 188, AONA RD., CHINA (SHANGHAI) PILOT FREE TRADE ZONE
- Telephone: +86-021-50350029
- Fax: +86-021-503500291.3 Emergency telephone
- Emergency Phone #: +86-021-50350029 (CHEMTREC)1.4 Relevant Identified Uses and Uses Advised Against
- Identified Uses: Food additive (bulking agent, sweetener, thickener, film-forming agent, moisture retainer) for dairy, bakery, confectionery, beverage, meat, seasoning, infant food and processed food industries; also used as a carrier for food additives and dietary supplement raw material.
- Uses Advised Against: Avoid excessive inhalation of dust for asthmatic individuals; no restricted uses for food-grade application.

SECTION 2: Hazards Identification

2.1 GHS ClassificationNot a hazardous substance or mixture (GHS 0 category); mild eye/respiratory irritation may occur from bulk dust inhalation (no formal GHS classification); no acute/chronic toxicity at normal food use doses.2.2 GHS Label Elements

- Hazard Pictograms: None
- Signal Word: None
- Hazard Statements: None
- Precautionary Statements:
  - P261: Avoid breathing dust
  - P304+P340: If inhaled: Move person to fresh air and keep comfortable for breathing
  - P337+P313: If eye irritation persists: Get medical advice/attention

- P271: Use only outdoors or in a well-ventilated area2.3 Physical and Chemical HazardsNo physical/chemical hazards; non-combustible (slow burning at high temperature), no explosion risk, no oxidative properties; slightly hygroscopic, stable under normal food processing and storage conditions; 100% soluble in water, insoluble in ethanol and organic solvents.2.4 Health Hazards
- No acute/chronic systemic toxicity at normal food use doses; mild transient eye/respiratory irritation in sensitive individuals from bulk dust contact; no skin irritation/sensitization, no known allergenicity.
- Carbohydrate polymer (hydrolyzed starch), easily digested and absorbed by the human body; provides low-calorie energy, no adverse metabolic effects; excessive oral ingestion may cause mild gastrointestinal discomfort (bloating, diarrhea) with no long-term adverse effects.
- Natural starch derivative, widely used in food industry with confirmed food safety, suitable for all population groups including children and the elderly.2.5 Environmental Hazards
- Low environmental risk; fully biodegradable (decomposed by microorganisms to CO_2 and H_2O); no toxic effects on aquatic/terrestrial organisms at normal release levels.
- No acute aquatic toxicity (Zebrafish LC_{50} ,96h >20000 mg/L); no bioaccumulation potential (carbohydrate, rapid microbial degradation); no soil/water pollution at normal use.2.6 Other HazardsSlight hygroscopicity may cause minor caking under high humidity; dust may form slippery surfaces when wet; no other hazards for food-grade application.

SECTION 3: Composition/Information on Ingredients

- Substance / Mixture: Pure carbohydrate polymer (starch hydrolysate)
- Chemical Name: Maltodextrin
- Formula: $(C_6H_{10}O_5)_n \cdot xH_2O$ (n=3-20, DE 10-20)
- CAS-No.: 9050-36-6

Component	Classification	Concentration (w/w)	CAS No.	Hazard Statements
Maltodextrin (DE 10-20)	Non-hazardous	≥98.0%	9050-36-6	None
Moisture	Non-hazardous	≤6.0%	7732-18-5	None
Ash (Inorganic Salts)	Non-hazardous	≤0.5%	-	None
Dextrose (trace)	Non-hazardous	≤2.0%	50-99-7	None

SECTION 4: First Aid Measures

4.1 Description of First-Aid Measures

- **Inhalation**: Move victim to fresh air, keep airway open. Rinse mouth with water; no special treatment if no discomfort. Consult a doctor if coughing/irritation persists for more than 2 hours.
- **Skin Contact**: Brush off residual powder, rinse affected area with running water for 3-5 minutes. Dry skin thoroughly; no further treatment needed (no skin irritation).
- **Eye Contact**: Rinse eyes cautiously with plenty of running water for 5-10 minutes (hold eyelids open). Remove contact lenses if present and easy to do. Consult a doctor only if mild irritation persists.

- **Ingestion**: Rinse mouth with water, drink plenty of plain water (do not induce vomiting). No special treatment for normal ingestion; consult a doctor if excessive intake causes severe gastrointestinal discomfort (bloating/diarrhea).4.2 Most Important Symptoms and Effects
- Acute: Mild transient eye/respiratory irritation from bulk dust; mild bloating from excessive oral ingestion.
- Delayed: No known delayed toxic effects based on comprehensive toxicological testing.4.3 Indication of Immediate Medical AttentionNo immediate medical attention required for normal food-grade handling/ingestion; consult a doctor only if irritation symptoms persist or excessive intake causes severe discomfort.

SECTION 5: Firefighting Measures

5.1 Extinguishing Media

- **Suitable**: All common fire-extinguishing media (water spray, CO_2, dry chemical powder, foam).
- **Unsuitable**: None (no significant fire hazards associated with the product).5.2 Special Hazards Arising from the Substance or Mixture
- Non-combustible under normal conditions; slow burning at high temperature (>300℃) to produce non-toxic carbon dioxide and water; no hazardous gases or combustion products produced during fire or normal heating.
- Dust may form explosive mixtures in air at **extremely high concentrations** (no food processing/storage risk).5.3 Advice for Firefighters
- Wear standard fire-fighting gear (self-contained breathing apparatus if dust concentration is high); fight fire from upwind.
- Cool exposed containers with water spray if near fire (prevent thermal expansion); avoid dust inhalation during firefighting.

SECTION 6: Accidental Release Measures

6.1 Personal Precautions

- Wear N95 dust mask and disposable food-grade nitrile gloves for large spills; ensure good ventilation in the spill area (prevent dust accumulation).
- No open flames/sparks required (no fire risk); no special PPE for small spills.6.2 Environmental Precautions
- No special environmental precautions; the product is biodegradable and non-toxic. Sweep up spilled powder to avoid entry into drains (no clogging risk).6.3 Methods and Materials for Containment and Cleaning Up
- **Small Spill**: Sweep into a sealed HDPE container for reuse; wipe the area with a dry cloth (dispose as general waste).
- **Large Spill**: Collect with a dust-free vacuum cleaner or shovel into sealed food-grade drums for reuse; no need for neutralization (non-corrosive, non-toxic).
- **Note**: Avoid wetting the powder during cleanup (prevents slippery surfaces).6.4 Reference to Other SectionsSee Section 13 for waste disposal; Section 8 for PPE details.

SECTION 7: Handling and Storage

7.1 Precautions for Safe Handling

- Operate in a well-ventilated area with dust collection equipment (prevent dust inhalation/accumulation).
- Use dry food-grade equipment/tools (HDPE, stainless steel) for weighing/mixing; avoid generating excessive dust.
- Hygiene Measures: Wash hands/face thoroughly with soap and water after handling; do not eat/drink/smoke in the processing area.7.2 Conditions for Safe Storage
- **Storage Type**: Store in a cool, dry, well-ventilated food-grade warehouse; temperature ≤25℃, relative humidity ≤65% (prevents hygroscopic caking).
- **Containers**: Sealed food-grade HDPE plastic drums or paper bags with inner PE liner; label clearly with product name, batch number, DE value and "Keep Dry" mark.
- **Incompatibilities**: No significant incompatibilities; stable with all food ingredients/additives (acids, alkalis, salts, preservatives, sweeteners); avoid long-term contact with strong oxidizing agents (industrial grade only).
- **Separation**: Store separately from odorous substances (no odor absorption); no special separation requirements for other food raw materials/additives.
- **Shelf Life**: **24 months** (unopened, in specified storage conditions); 6 months after opening (seal tightly after each use to avoid moisture and contamination).7.3 Specific End UseOnly for food production as bulking agent and sweetener; compliant with GB 2760/FDA/EC dosage limits (GMP for all food categories).

SECTION 8: Exposure Controls/Personal Protection

8.1 Control Parameters

- No official occupational exposure limits (OEL) for food-grade maltodextrin; follow general industrial dust limit (10 mg/m³ TWA) for bulk handling (national occupational health standards).
- No PEL/REL established by US OSHA/NIOSH (non-hazardous substance).8.2 Exposure Controls
- **Engineering Controls**: Local exhaust ventilation (air exchange rate ≥6 times/hour) for bulk handling/loading/unloading; closed mixing systems to minimize dust release.
- **Personal Protective Equipment (PPE)**:
  - **Respiratory Protection**: N95 dust mask (for bulk dust handling; no respirator required for normal use).
  - **Eye/Face Protection**: Food-grade safety glasses (recommended for large-scale dust handling).
  - **Skin Protection**: Disposable food-grade nitrile gloves (optional for normal handling; mandatory for large-quantity processing).
  - **Other**: Dust-proof food-grade overalls and non-slip shoes (for industrial processing).8.3 Environmental Exposure Controls
- No special environmental exposure controls; use closed transfer systems to prevent dust release; no wastewater/air pollution associated with handling.

SECTION 9: Physical and Chemical Properties

Property	Details (25℃, 1 atm)
Physical State	White free-flowing powder
Color	Pure white
Odor	Odorless
Taste	Mild sweet, no bitter/astringent aftertaste
Melting Point	Decomposes >200℃ (no melting)
Boiling Point	Not applicable (solid, decomposes)
Flammability	Non-combustible (NFPA Flammability: 0)
Flash Point	Not applicable
Autoignition Temperature	>300℃
Vapor Pressure	<0.0001 kPa (25℃)
Vapor Density	Not applicable (solid)
Relative Density (Water=1)	1.2-1.4
pH Value (10% aqueous solution)	4.5-6.5
Water Solubility	100% soluble, clear colorless solution
Solubility	Insoluble in ethanol, methanol, ether, benzene and organic solvents
Hygroscopy	Slightly hygroscopic
Viscosity	10% aq. sol: 5-15 mPa·s (25℃); increases with concentration
Bulk Density	0.5-0.7 g/cm³
Corrosivity	Non-corrosive to metal/plastic/glass (food-grade materials)

SECTION 10: Stability and Reactivity

10.1 Chemical Stability: **Highly stable** under all normal food processing and storage conditions (starch derivative); stable in acidic/neutral/weak alkaline food systems (pH 3.0-8.0); stable at low/high temperatures (freezing to 120℃ sterilization).10.2 Possibility of Hazardous Reactions:

- No hazardous reactions with water, food ingredients or common food additives under any normal food processing conditions.
- Hydrolyzes to glucose at extremely high temperature (>200℃) or strong acid conditions (**industrial conditions only, no food use**).10.3 Conditions to Avoid: High humidity (caking), extreme pH (<3.0/>8.0), strong oxidizing agents (industrial use); no adverse conditions for food-grade application.10.4 Incompatible Materials: Concentrated strong acids/alkalis, strong oxidizing agents (industrial grade only); no incompatible materials for food-grade use.10.5 Hazardous Decomposition Products: Non-toxic carbon dioxide and water (decomposes >200℃); no toxic gases produced at food processing temperatures.10.6 Hazardous Polymerization: Will not occur under any conditions (carbohydrate polymer, no polymerization).

SECTION 11: Toxicological Information

11.1 Information on Toxicological Effects

- **Acute Toxicity**: Oral (Rat, LD_{50}) >20000 mg/kg; Dermal (Rabbit, LD_{50}) >20000 mg/kg; Inhalation (Rat, LC_{50}) >5000 mg/m³/4h – **Practically non-toxic**.

- **Skin Corrosion/Irritation**: No skin irritation (Rabbit, 24h exposure; GHS 0 category); no corrosion, no sensitization.
- **Serious Eye Damage/Irritation**: Mild transient eye irritation from bulk dust (GHS 0 category); no irreversible eye damage.
- **Respiratory Irritation**: Mild transient respiratory irritation from bulk dust (GHS 0 category).
- **Germ Cell Mutagenicity**: Negative (Ames test, chromosome aberration test; no genotoxicity).
- **Carcinogenicity**: IARC Group 3 (not classifiable as to carcinogenicity to humans; no evidence of carcinogenicity).
- **Reproductive Toxicity**: No reproductive/developmental toxicity (rat feeding test at 10000 mg/kg/day; safe for maternal/fetal health).
- **Specific Target Organ Toxicity**: No single/chronic target organ toxicity at normal dietary levels; easily digested carbohydrate, provides energy with no adverse metabolic effects.11.2 Additional InformationMaltodextrin is a natural starch hydrolysate approved by FAO/WHO, FDA, EFSA and CFSA as a safe food additive; no adverse health effects at normal food application doses; suitable for low-sugar, low-calorie food formulation.

SECTION 12: Ecological Information

12.1 Toxicity:

- Aquatic: Zebrafish LC_{50} (96h) >20000 mg/L, Daphnia EC_{50} (48h) >20000 mg/L – **Non-toxic**; no adverse effects on aquatic organisms at any normal use level.
- Terrestrial: No toxic effects on soil microorganisms/plants; acts as a carbon source for soil microbes, promotes microbial activity (no negative environmental impact).12.2 Persistence and Degradability: **Fully biodegradable**; degraded by soil/aquatic microbes to CO_2 and H_2O within 7-14 days; no environmental persistence.12.3 Bioaccumulative Potential: Log Kow = -3.8 (estimated) – **No bioaccumulation potential** (water-soluble carbohydrate, no adsorption to biological tissues/organisms).12.4 Mobility in Soil: High mobility (soluble in water); no leaching risk to groundwater (rapid microbial degradation).12.5 PBT/vPvB Assessment: Not classified as PBT/vPvB (fully biodegradable, non-toxic, no bioaccumulation); meets all environmental safety criteria.12.6 Other Adverse Effects: No known long-term ecological effects; no soil/water pollution at normal food-grade application and disposal.

SECTION 13: Disposal Considerations

13.1 Waste Treatment Methods

- **Uncontaminated Product Waste**: Reuse directly (no quality degradation if dry); expired/contaminated waste can be disposed of as general solid waste (non-hazardous) or composted (biodegradable).
- **Packaging Waste**: Rinse containers thoroughly with water (meet food hygiene standards); recycle/dispose of as non-hazardous plastic/paper waste (no residual hazards).13.2 Disposal Compliance: Comply with China General Solid Waste Pollution Control Law, Food Safety Law and local environmental regulations; no hazardous waste disposal procedures required.

SECTION 14: Transport Information

14.1 UN Number: None (non-hazardous substance)14.2 UN Proper Shipping Name: None (not a hazardous good)14.3 Transport Hazard Class(es): None14.4 Packaging Group: None14.5 Environmental Hazards: IMDG Marine Pollutant: **No**; ADR/RID: No14.6 Special Precautions for User

- Transport in sealed food-grade packaging (HDPE drums, paper bags) to prevent dust release, hygroscopic caking and contamination.
- Use covered dry transport vehicles; avoid rain, snow, moisture and direct sunlight during transport (maintain relative humidity ≤65%).
- Secure containers to prevent tipping/collision; avoid rough handling (prevents packaging damage and dust release).
- Do not mix with toxic/harmful/odorous substances or strong oxidizing agents in the same vehicle; transport with other non-hazardous food additives/raw materials is allowed.
- No special transport documentation required (non-hazardous food additive); comply with general food raw material transport regulations.

SECTION 15: Regulatory Information

15.1 National/International Regulations

- **China**: Compliant with GB 2760 (National Food Safety Standard for Food Additives), GB 1886.294-2021 (Food Additive Maltodextrin); classified as non-hazardous chemical; approved for use in **all food categories** with GMP dosage limits.
- **EU**: Compliant with EC 1333/2008; E1400 (food additive code); REACH registered (no SVHC); approved for food use with GMP dosage limits.
- **US**: TSCA listed (CAS 9050-36-6); FDA GRAS (21 CFR Part 184.1442); approved for use in all food and beverage categories with no dosage limit (GMP).
- **International**: Compliant with Codex Alimentarius Commission (CAC) standards; FCC/USP certified (food grade); approved by FAO/WHO JECFA; recognized as a safe natural food additive worldwide.15.2 Other Regulations: Comply with local food safety, occupational health and environmental regulations; food production use must meet GMP/HACCP standards.

SECTION 16: Other Information

- **Further Information**: This MSDS is for **Food Grade Maltodextrin (DE 10-20, CAS 9050-36-6)**, compliant with GB/T 16483, GB/T 17519 and GHS Rev.9. It applies to safe handling, storage, transport and disposal of the product for food production use. The supplier is not liable for damage caused by improper industrial use (non-food) or non-compliance with storage/handling precautions.
- **Revision Date**: 27 FEB 2026
- **Version**: V1.0