



NEWAY SINOPHC TECH. LIMITED

ADD:RM. 204, BUILDING 3, NO. 188, AONA RD., CHINA (SHANGHAI) PILOT FREE TRADE ZONE.
Email:marketing01@newayphc.com; Phone:+86-021-50350029 <https://www.newayphc.com>

Safety Data Sheet (MSDS)

- Trehalose (Food Grade)

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

Date: 28 FEB 2026

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

1.1 Product Identifiers

- Product Name: Trehalose (Food Grade)
- Product Number: T-20260228
- Brand: SIGALD
- CAS-No.: 99-20-7
- EINECS/EC-No.: 202-739-6
- MDL Number: MFCD00006522
- Synonyms: α,α -Trehalose; D(+)-Trehalose dihydrate; Mushroom sugar; Food Grade Sweetener

1.2 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: +86-021-50350029

1.3 Emergency telephone

- Emergency Phone #: +86-021-50350029 (CHEMTREC)

1.4 Relevant Identified Uses and Uses Advised Against

- Identified Uses: Food additive (sweetener, humectant, cryoprotectant, stabilizer, anti-aging agent) for bakery, confectionery, dairy, beverage, meat, aquatic products, snack food and prepared food industries; also used as a texture improver and flavor protectant.
- 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 Classification Not a hazardous substance or mixture (GHS 0 category); mild eye/respiratory irritation may occur from bulk dust inhalation (no formal GHS classification).

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
- 2.3 Physical and Chemical Hazards
No physical/chemical hazards; non-combustible, no explosion risk, no oxidative

properties; low hygroscopicity, stable under normal food processing and storage conditions; highly soluble in water, slightly soluble in ethanol.

- 2.4 Health Hazards
- No acute/chronic systemic toxicity; mild transient eye/respiratory irritation in sensitive individuals from bulk dust contact; no skin irritation/sensitization, no known allergenicity.
 - Excessive oral ingestion may cause mild gastrointestinal discomfort (bloating, diarrhea) due to low digestibility; no cumulative toxicity, genotoxicity, carcinogenicity or reproductive toxicity at food-grade application levels.
 - Natural disaccharide, widely present in nature (mushrooms, seaweed, insects), metabolized in the human body by trehalase.
- 2.5 Environmental Hazards
- Environmentally friendly; fully biodegradable (microbial degradation to glucose and CO₂/H₂O); no toxic breakdown products.
 - No acute aquatic toxicity (Zebrafish LC₅₀, 96h >20000 mg/L); no bioaccumulation potential; no soil/water pollution risk.
- 2.6 Other Hazards
- Low hygroscopicity, no caking under normal storage conditions; no other hazards for food-grade application.

SECTION 3: Composition/Information on Ingredients

- Substance / Mixture: Pure substance (food grade)
- Chemical Name: α,α-Trehalose
- Formula: C₁₂H₂₂O₁₁
- Molecular Weight: 342.30 Da
- CAS-No.: 99-20-7
- EINECS/EC-No.: 202-739-6

Component	Classification	Concentration (w/w)	CAS No.	Hazard Statements
Trehalose (Food Grade)	Non-hazardous	≥99.0%	99-20-7	None
Glucose (trace)	Non-hazardous	≤0.5%	50-99-7	None
Water	Non-hazardous	≤0.5%	7732-18-5	None
Other monosaccharides (trace)	Non-hazardous	≤0.2%	-	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.



NEWAY SINOPHC TECH. LIMITED

ADD:RM. 204, BUILDING 3, NO. 188, AONA RD., CHINA (SHANGHAI) PILOT FREE TRADE ZONE.
Email:marketing01@newayphc.com; Phone:+86-021-50350029 <https://www.newayphc.com>

- **Ingestion:** Rinse mouth with water, drink plenty of water (do not induce vomiting). No special treatment if no discomfort; consult a doctor if abdominal pain/bloating/diarrhea occurs (only for excessive ingestion).4.2 Most Important Symptoms and Effects
- Acute: Mild transient eye/respiratory irritation from bulk dust; mild gastrointestinal discomfort 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/accidental contact; consult a doctor only if irritation symptoms persist or excessive amounts are ingested with severe discomfort.

SECTION 5: Firefighting Measures

5.1 Extinguishing Media

- **Suitable:** All common fire-extinguishing media (water spray, CO₂, dry chemical powder, foam).
- **Unsuitable:** None (no fire hazards associated with the product).5.2 Special Hazards Arising from the Substance or Mixture
- Non-combustible; decomposes at high temperature (>200°C) to produce non-toxic carbon dioxide, water and small amounts of caramel; no hazardous combustion products.
- No flammable vapors/gases produced during normal storage and handling.5.3 Advice for Firefighters
- Wear standard fire-fighting gear (no special protective equipment required); fight fire from upwind.
- Cool exposed containers with water spray if near fire (prevent thermal expansion); no special firefighting precautions needed.

SECTION 6: Accidental Release Measures

6.1 Personal Precautions

- Wear N95 dust mask and disposable food-grade nitrile gloves for large spills (to avoid dust inhalation/skin contact); ensure good ventilation in the spill area.
- 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 non-toxic and biodegradable. Prevent large spills from entering drains/sewers only to avoid slight clogging (no pollution 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 into sealed food-grade drums for reuse; no need for neutralization (non-corrosive, non-toxic).
- **Note:** Avoid wetting the powder during cleanup (prevents sticky slurry formation).6.4 Reference to Other SectionsSee Section 13 for waste disposal; Section 8 for PPE details.

SECTION 7: Handling and Storage



NEWAY SINOPHC TECH. LIMITED

ADD:RM. 204, BUILDING 3, NO. 188, AONA RD., CHINA (SHANGHAI) PILOT FREE TRADE ZONE.
Email:marketing01@newayphc.com; Phone:+86-021-50350029 <https://www.newayphc.com>

7.1 Precautions for Safe Handling

- Operate in a well-ventilated area to prevent dust accumulation (may cause mild irritation).
- 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 $\leq 25^{\circ}\text{C}$, relative humidity $\leq 60\%$ (maintains free-flowing property).
- **Containers:** Sealed food-grade HDPE plastic drums/aluminum foil bags; label clearly with product name, batch number and storage instructions.
- **Incompatibilities:** No significant incompatibilities; stable with most food ingredients/additives; avoid long-term contact with strong acids/alkalines at high temperature (minor hydrolysis).
- **Separation:** No special separation requirements for common food raw materials/additives; store separately from strong corrosive chemicals (non-food grade).
- **Shelf Life:** 36 months (unopened, in specified storage conditions); 6 months after opening (if resealed tightly).

7.3 Specific End Use Only for food production as sweetener, humectant and stabilizer; compliant with GB 2760/FDA/EC dosage limits (GMP for most food categories).

SECTION 8: Exposure Controls/Personal Protection

8.1 Control Parameters

- No official occupational exposure limits (OEL) for food-grade trehalose; follow general industrial dust limit ($10 \text{ mg}/\text{m}^3$ 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 (**only** for bulk dust handling; no respirator required for normal use).
 - **Eye/Face Protection:** Food-grade safety glasses (recommended for large-scale dust handling; no face shield required).
 - **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°C, 1 atm)
Physical State	White crystalline powder
Color	Pure white
Odor	Odorless
Taste	Mild sweet (about 45% sweetness of sucrose)
Melting Point	203°C (decomposition)
Boiling Point	N/A (decomposes before boiling)
Flammability	Non-combustible
Flash Point	Not applicable
Autoignition Temperature	>200°C (decomposes)
Vapor Pressure	<0.0001 kPa (25°C)
Vapor Density	N/A (solid, no vapor)
Relative Density (Water=1)	1.512
pH Value (5% aqueous solution)	5.0-7.0
Water Solubility	Highly soluble (88.2 g/100mL at 25°C)
Solubility	Slightly soluble in ethanol; insoluble in ether/benzene/chloroform
Hygroscopy	Low (far lower than sucrose/glucose)
Viscosity	N/A (solid; 5% aqueous solution: 2-3 mPa·s)
Refractive Index	1.544 (crystal)
Corrosivity	Non-corrosive to metal/plastic/glass (food-grade materials)
Sweetness	~45% of sucrose (10% aqueous solution)

SECTION 10: Stability and Reactivity

10.1 Chemical Stability: **Highly stable** under recommended storage/handling conditions (dry, sealed, ≤25°C); no decomposition under normal food processing conditions (0-121°C); stable in acidic/neutral food systems (pH 3.0-7.0).

10.2 Possibility of Hazardous Reactions:

- Minor hydrolysis to glucose under strong acid/alkaline conditions and high temperature (>121°C for long time) (non-hazardous).
 - No hazardous reactions with water, food ingredients or common food additives (sweeteners, acidulants, stabilizers, preservatives).
- 10.3 Conditions to Avoid: High temperature (>200°C, decomposition), long-term contact with strong acids/alkalines at high temperature (hydrolysis), excessive moisture (no caking but affects flowability).
- 10.4 Incompatible Materials: Concentrated strong acid/alkaline solutions (industrial grade); no other significant incompatibilities for food-grade use.
- 10.5 Hazardous Decomposition Products: Non-toxic carbon dioxide (CO₂), water (H₂O) and caramel at >200°C; no toxic decomposition products.
- 10.6 Hazardous Polymerization: Will not occur under any conditions (food-grade trehalose).

SECTION 11: Toxicological Information

11.1 Information on Toxicological Effects

- **Acute Toxicity:** Oral (Rat, LD₅₀) >10000 mg/kg; Dermal (Rabbit, LD₅₀) >20000 mg/kg; Inhalation (Rat, LC₅₀) >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 5000 mg/kg/day; safe for maternal/fetal health).
- **Specific Target Organ Toxicity:** No single/chronic target organ toxicity; low digestibility, no blood sugar spike, suitable for low-sugar food formulation. 11.2 Additional Information Trehalose is a natural disaccharide present in mushrooms, seaweed, yeast and insects; it has a protective effect on biological macromolecules (protein, starch); metabolized by trehalase in the small intestine, no accumulation in the human body; suitable for all population groups including diabetics, infants and the elderly.

SECTION 12: Ecological Information

12.1 Toxicity:

- Aquatic: Zebrafish (LC₅₀, 96h) >20000 mg/L (non-toxic); Daphnia (EC₅₀, 48h) >20000 mg/L (non-toxic); Algae (EC₅₀, 72h) >10000 mg/L (non-toxic).
 - Terrestrial: No toxic effect on soil microorganisms/plants; decomposed into glucose by soil microbes, which can be used as microbial/plant nutrient sources.
- 12.2 Persistence and Degradability: Fully biodegradable (BOD₅ /COD >0.95); degraded by aerobic/anaerobic microorganisms into CO₂ and H₂O within 3-5 days (no environmental persistence).
- 12.3 Bioaccumulative Potential: Log K_{ow} = -3.87 (no bioaccumulation potential; highly water-soluble, rapidly degraded by organisms).
- 12.4 Mobility in Soil: Moderate mobility; highly soluble in water, no adsorption to soil particles, but rapidly degraded by soil microbes, no leaching risk to groundwater.
- 12.5 PBT/vPvB Assessment: Not classified as PBT/vPvB (biodegradable, non-toxic, no bioaccumulation, low persistence).
- 12.6 Other Adverse Effects: No known long-term ecological effects; no soil/water pollution risk; degraded products are natural nutrients for microbes/plants.

SECTION 13: Disposal Considerations

13.1 Waste Treatment Methods

- **Uncontaminated Product Waste:** Reuse directly (even if slightly agglomerated, grind and use); expired waste can be disposed of as general solid waste (non-hazardous) or mixed with organic fertilizer (decomposes to microbial nutrients).
- **Contaminated Waste:** Collect in sealed HDPE containers, dispose of through licensed general waste treatment facilities (no hazardous waste treatment required).



NEWAY SINOPHC TECH. LIMITED

ADD:RM. 204, BUILDING 3, NO. 188, AONA RD., CHINA (SHANGHAI) PILOT FREE TRADE ZONE.
Email:marketing01@newayphc.com; Phone:+86-021-50350029 <https://www.newayphc.com>

- **Packaging Waste:** Rinse containers thoroughly with water (meet food hygiene standards); recycle/dispose of as non-hazardous plastic/foil 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): None 14.4 Packaging Group: None 14.5 Environmental Hazards: IMDG Marine Pollutant: **No**; ADR/RID: No 14.6 Special Precautions for User

- Transport in sealed food-grade HDPE drums/aluminum foil bags to prevent dust release and maintain flowability.
- Use covered dry transport vehicles; avoid rain, snow, moisture and direct sunlight during transport (maintain relative humidity $\leq 60\%$).
- Secure containers to prevent tipping/collision; no mixing with strong acid/alkaline chemicals (non-food grade) in the same vehicle.
- No special transport documentation required (non-hazardous food additive); comply with general food raw material transport regulations. 14.7 Further Information: Complies with ADR/RID, IMDG, IATA-DGR regulations for non-hazardous goods; no special transport restrictions.

SECTION 15: Regulatory Information

15.1 National/International Regulations

- **China:** Compliant with GB 2760 (National Food Safety Standard for Food Additives), GB 1886.279-2021 (Food Additive Trehalose); classified as non-hazardous chemical (Hazardous Chemical Safety Management Regulation); approved for use in all food categories with GMP dosage limits.
- **EU:** Compliant with EC 1333/2008 (Food Additive Regulation); E968 (food additive code); REACH registered (no SVHC); approved for food use with GMP dosage limits.
- **US:** TSCA listed (CAS 99-20-7); FDA GRAS (21 CFR Part 184.1879); approved for food use as sweetener/humectant/stabilizer with no dosage limit (GMP).
- **International:** Complies with Codex Alimentarius Commission (CAC) standards; FCC/USP certified (food grade); recognized as a safe food additive worldwide, widely used in functional and low-sugar food production. 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 Trehalose ($\geq 99.0\%$)** (CAS 99-20-7), 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



NEWAY SINOPHC TECH. LIMITED

ADD:RM. 204, BUILDING 3, NO. 188, AONA RD., CHINA (SHANGHAI) PILOT FREE TRADE ZONE.
Email:marketing01@newayphc.com; Phone:+86-021-50350029 <https://www.newayphc.com>

by improper use (e.g., high-temperature strong acid/alkaline treatment) or non-compliance with storage precautions.

- **Revision Date:** 28 FEB 2026
- **Version:** V1.0



纳维盈医化科技
NEWAY SINOPHC TECH