



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)

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

Name: Aspartame (Food Grade, Anhydrous)**Revision Date:** 26 FEB 2026

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

1.1 Product Identifiers

- Product Name: Aspartame (Food Grade, Anhydrous)
- Product No.: ASP-20260228
- Brand: SIGALD
- CAS-No.: 22839-47-0
- Synonyms: N-L-a-Aspartyl-L-phenylalanine 1-methyl ester; APM; Food Grade Aspartame; 阿斯巴甜（无水食品级）

1.2 Supplier Details

- 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 Cooperative Line)

1.4 Identified Uses & Uses Advised Against

- **Identified Uses:** Food additive (zero-calorie high-intensity sweetener, flavor enhancer); raw material for low-sugar/zero-sugar food, beverage, dairy, confectionery, seasoning, health food; food processing auxiliary material.
- **Uses Advised Against:** Avoid use in high-temperature baking/sterilization (>120°C, decomposition); avoid long-term contact with strong acid/alkali (hydrolysis); not for use by individuals with phenylketonuria (PKU); no other restricted uses for food grade.

SECTION 2: Hazards Identification

2.1 GHS Classification

Not a hazardous substance or mixture (GHS 0 Category)

2.2 GHS Label Elements

- Hazard Pictogram: None
- Signal Word: None
- Hazard Statements: None
- Precautionary Statements: P261, P271, P302+P352, P405, P501 (key: P201 - Read label before use)

2.3 Hazard Summary

White crystalline powder, odorless, clean sweet taste (relative sweetness ≈200 times sucrose).

Non-toxic, non-irritating under normal food use conditions; no skin/eye/respiratory irritation, no acute/chronic toxicity for normal population. **Contraindicated for phenylketonuria (PKU)**

patients (contains phenylalanine); excessive oral ingestion may cause mild gastrointestinal discomfort (nausea) in sensitive individuals (no long-term harm). Decomposes at high temperature/strong acid/alkali, non-combustible, no explosion risk. Zero-calorie, no blood sugar impact; environmentally friendly, fully biodegradable.

2.4 Physical & Chemical Hazards

No physical/chemical hazards under normal storage/use; non-combustible, decomposes at >120°C to produce non-toxic amino acid derivatives; hydrolyzes in strong acid/alkali (pH<3.0 or pH>9.0) to aspartic acid and phenylalanine; slightly hygroscopic (caking in high humidity).

2.5 Health Hazards

No acute/chronic toxic effects for normal population at food intake dosages; no sensitization, mutagenicity, carcinogenicity or reproductive toxicity (FAO/WHO, FDA certified); zero-calorie, no blood sugar fluctuation (suitable for diabetics/obese people). **Critical Note:** Contains phenylalanine, unsafe for PKU patients (cannot metabolize phenylalanine); mild gastrointestinal discomfort may occur in sensitive individuals with excessive ingestion.

2.6 Environmental Hazards

No adverse effects on aquatic/terrestrial organisms; fully biodegradable (BOD₅ /COD >0.90) by microorganisms; no bioaccumulation potential, no eutrophication risk; decomposes into natural amino acids in the environment, no residual pollution.

SECTION 3: Composition/Information on Ingredients

- **Substance Type:** Pure dipeptide chemical substance (synthetic food-grade high-intensity sweetener, non-natural but food-safe)

3.1 Main Component

Component	Content (w/w)	CAS No.	Formula
Aspartame (Anhydrous)	≥99.0%	22839-47-0	C ₁₄ H ₁₈ N ₂ O ₅

3.2 Non-Hazardous Auxiliary Ingredients

- Food-grade anticaking agent (Silicon Dioxide): ≤0.5% (trace)
- Deionized water (trace): ≤0.5%
- **Total Hazardous Ingredients:** 0%
- **Key Component Note:** Contains L-phenylalanine (integral structural unit), marked for PKU patients.

SECTION 4: First Aid Measures

4.1 First-Aid for Different Exposure Routes

- **If Inhaled:** Move to fresh air if slight dust discomfort occurs; no special treatment needed (no respiratory irritation, dust expels spontaneously).
- **In Case of Skin Contact:** Rinse skin with running water for 3-5 minutes if needed; no irritation, no residual effect, no emollients required.
- **In Case of Eye Contact:** Rinse eyes with plenty of clean water for 5 minutes (hold eyes open) if powder enters; no eye damage/irritation, no long-term effect.

- **If Swallowed:** Normal ingestion (food dosage) is safe for non-PKU population; rinse mouth with water and drink warm water if excessive ingestion causes mild nausea. **PKU Patients:** Seek medical attention immediately if accidentally ingested (even small amount).

4.2 Most Important Symptoms & Effects

- Normal population: No acute toxic symptoms; mild, temporary gastrointestinal discomfort (nausea) in sensitive individuals with excessive ingestion.
- PKU patients: Accidental ingestion may cause phenylalanine accumulation, leading to neurological symptoms (headache, dizziness) – requires immediate medical intervention.

4.3 Medical Attention Note

No specific treatment for normal population under any exposure; consult a doctor only if gastrointestinal discomfort persists >24h (extremely rare). **PKU patients must seek immediate medical help** if ingested, and inform doctors of the ingredient (phenylalanine).

SECTION 5: Firefighting Measures

5.1 Suitable Extinguishing Media

Water spray, foam, carbon dioxide (CO₂), dry chemical powder – all applicable with no limitations; water spray is preferred to cool and prevent thermal decomposition.

5.2 Special Hazards from the Substance

Non-combustible; decomposes at >240°C to produce non-toxic amino acid derivatives and trace carbon monoxide; no explosive gases, no burning residues, no secondary hazards; hydrolysis in fire water (mild acid/alkali) produces natural amino acids (no toxic by-products).

5.3 Advice for Firefighters

Wear standard fire-fighting protective gear (gloves, goggles, dust respirator); avoid inhalation of thermal decomposition fumes in large-scale high-temperature conditions; fight fire from a safe distance and ensure good ventilation; use water to cool surrounding containers to prevent decomposition.

SECTION 6: Accidental Release Measures

6.1 Personal Precautions

Wear non-slip shoes for large spills (powder may cause slippery floors); FFP1 dust mask is optional for heavy dust generation (no irritation risk); no other PPE required for normal spills.

6.2 Environmental Precautions

No special environmental measures; the product is biodegradable and non-polluting; sweep up spilled powder to avoid direct entry into drinking water sources (decomposes into natural amino acids if entered, no environmental risk).

6.3 Containment & Cleaning Up

- **Small Spill:** Gently sweep up with a brush, collect in a sealed plastic container for reuse; wipe the floor with a dry/damp cloth to prevent slipping and dust resuspension.



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>

- **Large Spill:** Contain with plastic barriers to prevent spread; transfer to sealed HDPE drums for recycling/disposal; clean the area with a mop and dry thoroughly to avoid caking from moisture absorption.

6.4 Disposal Reference

See Section 13 for waste disposal requirements.

SECTION 7: Handling and Storage

7.1 Safe Handling Precautions

- Operate in a well-ventilated, dry area; use dust suppression measures (low-speed mixing) during bulk mixing/transfer to avoid fine powder formation and dust dispersion.
- **Critical:** Avoid high-temperature processing ($>120^{\circ}\text{C}$) and long-term contact with strong acid/alkali ($\text{pH}<3.0$ or $\text{pH}>9.0$) to prevent decomposition/hydrolysis; do not mix with PKU-specific food raw materials.
- **Hygiene Measures:** Wash hands with soap and water after handling; do not eat/drink/smoke while operating the product; keep the operating area dry to avoid caking of spilled powder.

7.2 Safe Storage Conditions

- **Storage:** Cool, dry, well-ventilated food-grade warehouse; keep container tightly sealed with inner plastic lining to prevent moisture absorption, caking, decomposition and contamination.
- **Temperature & Humidity:** Storage temp $\leq 25^{\circ}\text{C}$, relative humidity $\leq 60\%$; install dehumidification and temperature control equipment for long-term storage (≥ 12 months); avoid direct sunlight.
- **Incompatibilities:** Strong mineral acids ($\text{HCl}/\text{H}_2\text{SO}_4$), strong alkalis (NaOH/KOH), high-temperature processing equipment ($>120^{\circ}\text{C}$); no incompatibility with common food additives (erythritol, stevia, acidulants in neutral range).
- **Storage Class:** TRGS 510 Class 13 (Non-Hazardous Solids)
- **Shelf Life:** 24 months (unopened, specified conditions); 12 months after opening (seal tightly, dry storage, use as soon as possible) – shorter shelf life due to slight hygroscopicity.
- **Labeling Requirement:** Mark storage area/container with "**Contains Phenylalanine - Not for PKU Patients**".

SECTION 8: Exposure Controls/Personal Protection

8.1 Occupational Exposure Limits

No specific OEL for food-grade Aspartame; follow general food additive dust exposure limit (TWA $10\text{ mg}/\text{m}^3$) for bulk processing only.

8.2 Exposure Controls & PPE

- **Engineering Controls:** Local exhaust ventilation (LEV) for large-scale powder processing; dust collection system; dehumidification/temperature control equipment for storage/operating areas; keep production area dry and away from high-temperature/acid-alkali equipment.
- **Personal Protective Equipment:**
 - Eye/Face: Safety goggles with side shields (optional for bulk handling, only to prevent powder from entering eyes).

- o Skin: Nitrile rubber gloves (food grade, ≥ 0.11 mm) for prolonged contact (optional, no skin irritation).
- o Respiratory: FFP1 dust mask for bulk powder processing (only to prevent dust inhalation, no toxic risk); no respiratory protection for small-scale use.
- o Foot: Non-slip food-grade safety shoes (mandatory for all handling to prevent slipping from spilled powder).
- o Hygiene: Food-grade hand washing facilities with pure water and soap at the workplace; dry hand towels provided to avoid moisture on hands causing powder caking.

SECTION 9: Physical and Chemical Properties

a) Physical State: White crystalline powder
b) Color: White, no yellowing or discoloration
c) Odor: Odorless
d) Taste: Clean, sweet taste, no bitter aftertaste, relative sweetness $\approx 200\times$ sucrose (0.5% aqueous solution)
e) Melting Point: 246-248°C (decomposes)
f) Boiling Point: N/A (decomposes before boiling)
g) Flammability: Non-combustible
h) Flash Point: $>200^\circ\text{C}$ (Closed Cup)
i) Autoignition Temperature: $>450^\circ\text{C}$
j) pH Value (25°C, 1% aq. solution): 4.5-6.0 (weakly acidic)
k) Solubility: Sparingly soluble in water (≈ 10 g/L at 25°C, increases with temperature); slightly soluble in ethanol (≈ 0.5 g/L); insoluble in ether/chloroform
l) Density (25°C, solid): 1.347 g/cm³
m) Bulk Density: 0.6-1.0 g/cm³ (varies with particle size)
n) Hygroscopy: Slightly hygroscopic (absorbs moisture and cakes in RH $>60\%$)
o) Vapor Pressure (25°C): Negligible (<0.00001 hPa)
p) Viscosity: N/A (solid); 1.02 mPa·s (1% aqueous solution, 25°C)
q) Partition Coefficient (log Kow): -1.7 (hydrophilic)
r) Explosive Properties: Not explosives
Oxidizing Properties: None

SECTION 10: Stability and Reactivity

10.1 Chemical Stability

Stable under recommended storage/use conditions; stable in neutral food systems (pH 3.0-9.0) at room temperature; stable in low-temperature processing ($<80^\circ\text{C}$). Decomposes at $>120^\circ\text{C}$ (baking/sterilization) and hydrolyzes in strong acid/alkali (pH <3.0 or pH >9.0) to aspartic acid and phenylalanine (natural amino acids, no toxic by-products).

10.2 Hazardous Reactions

No hazardous reactions under normal food production use; no polymerization; decomposition/hydrolysis produces only natural amino acids (no dangerous by-products); no reaction with common food additives in neutral pH range.

10.3 Conditions to Avoid

High temperature ($>120^\circ\text{C}$, decomposition), strong mineral acids/alkalis (hydrolysis), prolonged high humidity (RH $>60\%$, caking), direct contact with high-temperature processing equipment.

10.4 Incompatible Materials

Concentrated strong mineral acids (HCl, H₂SO₄), concentrated strong alkalis (NaOH, KOH), high-temperature oxidizing agents; compatible with erythritol, xylitol, stevia, monk fruit sweetener and neutral food additives.

10.5 Hazardous Decomposition Products

L-aspartic acid, L-phenylalanine (natural amino acids, non-toxic); trace carbon monoxide and carbon residue (only at >240°C); no hazardous by-products under normal food use/storage conditions.

SECTION 11: Toxicological Information

11.1 Key Toxicological Effects

- **Acute Toxicity:** Oral (Rat, LD₅₀) >10,000 mg/kg (practically non-toxic); Dermal (Rabbit, LD₅₀) >50,000 mg/kg; Inhalation (Rat, LC₅₀) >50 mg/m³ (4h).
- **Skin/Eye Irritation:** No irritation (Rabbit test, 24h continuous exposure); no corrosivity, no allergic reaction.
- **Sensitization:** No skin/respiratory sensitization (long-term human/animal use data, FAO/WHO certified); no allergic reaction in normal population.
- **Mutagenicity/Carcinogenicity:** No mutagenic effects (Ames test, chromosome aberration test); IARC Class 3 (not classifiable as carcinogenic to humans); FDA GRAS certified (no carcinogenic risk).
- **Reproductive Toxicity:** No adverse reproductive/developmental effects in animal tests; safe for pregnant/lactating women (non-PKU) at normal food dosages.
- **Target Organ Toxicity:** No target organ toxicity for normal population; metabolized into aspartic acid, phenylalanine and methanol (trace, rapidly metabolized) in the human body – zero-calorie, no blood sugar impact.
- **PKU Critical Note:** Contains phenylalanine, PKU patients lack phenylalanine hydroxylase, leading to phenylalanine accumulation in blood/brain, causing neurological damage (permanent if prolonged).
- **Aspiration Hazard:** Low (crystalline powder, moderate bulk density, no aspiration risk).

11.2 Additional Information

Approved by FAO/WHO/Codex Alimentarius, ADI: 0-40 mg/kg body weight; zero-calorie high-intensity sweetener, 200× sweeter than sucrose; safe for diabetics/obese people (non-PKU); widely used in global food industry with proven long-term safety for normal population.

SECTION 12: Ecological Information

12.1 Ecotoxicity

- Fish (Zebrafish, LC₅₀): >10,000 mg/L (96h)
- Daphnia (EC₅₀): >5,000 mg/L (48h)
- Algae (EC₅₀): >10,000 mg/L (72h) No toxic effects on aquatic organisms at normal concentrations; non-toxic to soil microorganisms, plants and terrestrial animals; decomposes into natural amino acids that act as microbial nutrients.

12.2 Persistence & Degradability

Fully biodegradable (BOD₅/COD >0.90) in aquatic/soil environments; degraded by microorganisms (peptidase-producing bacteria/fungi) into aspartic acid, phenylalanine and

methanol within 5-7 days; further decomposed into CO₂ and water; no residual pollution, no persistent organic pollutants.

12.3 Bioaccumulative Potential

None; highly hydrophilic, rapidly degraded by organisms; no bioaccumulation in food chain, aquatic/terrestrial organisms or soil; decomposes into natural nutrients with no accumulation risk.

12.4 Mobility in Soil

Moderate mobility (sparingly soluble in water); dissolves in soil water and is rapidly degraded by soil microbes; no long-term accumulation, no groundwater pollution risk (degraded before migration).

12.5 PBT/vPvB Assessment

Not classified as PBT/vPvB (fully biodegradable, practically non-toxic, no bioaccumulation); an environmentally friendly zero-calorie food sweetener.

12.6 Other Ecological Effects

Decomposes into natural amino acids that promote the growth of beneficial soil microorganisms; no adverse impact on ecosystem balance; safe for use in food production with no environmental side effects.

SECTION 13: Disposal Considerations

13.1 Waste Treatment Methods

- **Product Waste:** Uncontaminated waste can be fully reused as food sweetener; slightly contaminated waste can be used as microbial culture nutrient (amino acid source); heavily contaminated waste can be disposed of as non-hazardous solid waste in accordance with local food safety regulations; aqueous waste can be directly treated by biological wastewater treatment systems (rapidly biodegradable).
- **Packaging Waste:** Rinse empty containers with pure water (rinse water usable for food production if qualified); dispose of rinsed packaging as food-grade non-hazardous waste or recycle (HDPE/paper/aluminum foil/carton).

13.2 Disposal Notes

No special disposal requirements; incineration is acceptable (produces CO₂, water and trace amino acid residues, no toxic fumes); landfilling is also acceptable (rapidly degraded by soil microorganisms); no neutralization or other pretreatment needed for any waste.

SECTION 14: Transport Information

14.1 UN Classification & Number

ADR/RID/IMDG/IATA-DGR: **Not dangerous goods** (no UN number)

14.2 Transport Details

- UN Proper Shipping Name: Non-dangerous goods (Food Additive - Aspartame)
- Transport Hazard Class: None
- Packaging Group: None



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>

- Marine Pollutant: No (IMDG)

14.3 Transport Precautions

- Transport at $\leq 25^{\circ}\text{C}$; use sealed, moisture-proof food-grade packaging (inner plastic lining + outer carton/drum); avoid rain, moisture, direct sunlight and package collision.
- Prevent powder leakage and caking; use pallets for loading to avoid ground contact, moisture absorption and contamination.
- **Critical:** Avoid transport with concentrated strong acids/alkalis and high-temperature hazardous chemicals; no special separation required from other food additives (excluding PKU-specific food raw materials).
- Mark package with "**Food Grade**", "**Moisture Proof**", "**Non-Dangerous Goods**" and "**Contains Phenylalanine - Not for PKU Patients**".

SECTION 15: Regulatory Information

15.1 National Regulations (China)

- Hazardous Chemical Safety Management Regulation (Non-hazardous classification)
- National Food Safety Standard for Food Additives (GB 2760-2021) – approved as food sweetener/flavor enhancer (limited dosage: 0.01-0.5% according to food type)
- Food Hygiene Law of the People's Republic of China
- **Mandatory Labeling:** All food containing Aspartame must be marked with "**Contains Phenylalanine**" (GB 7718-2011)

15.2 International Regulations

- GHS Rev.9: Non-hazardous (0 Category)
- REACH (EU): Registered; not in SVHC Candidate List; complies with EC 1333/2008 (ADI 0-40 mg/kg bw)
- TSCA (US): Listed on Inventory; FDA GRAS certified (21 CFR 172.804); mandatory PKU labeling (FDA Food Labeling Act)
- Codex Alimentarius (FAO/WHO): Approved as food sweetener (Codex STAN 192-1995), ADI: 0-40 mg/kg body weight; mandatory PKU labeling.

15.3 Other Requirements

Comply with local food safety/transport/environmental regulations; follow GB 2760-2021 dosage limits for different food types; avoid high-temperature processing ($>120^{\circ}\text{C}$); mandatory PKU labeling for all finished food products; no use in infant food for PKU high-risk groups.

SECTION 16: Other Information

16.1 Document Validity

This MSDS is based on current scientific and technical knowledge, compliant with international and national standards. It is for the safe handling, storage, transport and disposal of food-grade Aspartame, with special attention to PKU contraindication and high-temperature/acid-alkali stability.

16.2 Revision History



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>

First Version - 26 FEB 2026 (No subsequent revisions)

