



MATERIAL SAFETY DATA SHEET

1.IDENTIFICATION OF THE SUBSTANCES/PREPARATION AND OF THE

COMPANY/UNDERTAKING:

Product name: Aspartame

Chemical name: Aspartame

Synonyms: L-Phenylalanine, N-L- α -aspartyl-1-methyl-ester

Molecular formula: $C_{14}H_{18}N_2O_5$

Molecular weight: 293.4

Substance/preparation: This product is a pure substance.

Use of the substance/preparation: This substance is used as a sweetener and a flavor enhancer (food ingredient).

Contact Information:

Company: Aurora Industry Co.,Ltd.

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2.COMPOSITION AND INFORMATION ON INGREDIENTS

Chemical name	CAS no.
Aspartame	22839-47-0

3. HAZARD IDENTIFICATION

Physical/chemical hazards: Finely dispersed particles are sensitive to dust explosion.

Environment hazards: Generally no water pollutant.

Human health hazards: This substance is not toxic.

4. FIRST AID MEASURES:

Inhalation:

Effects: Exposure to high concentrations may result in irritation.

Symptoms: No specific symptoms are known.

First aid: Remove victim to fresh air. Keep victim at rest. Consult a doctor in event of any complaints.

Skin:

Effects: Aspartame is hygroscopic and its drying character is believed to be responsible for most reported skin irritation.

Repeated or prolonged exposure may in rare case cause allergic reactions, these persons must receive medical attention from occupational health specialist.

Symptoms: No specific symptoms are known.

First aid: Remove contaminated clothing. Wash off affected skin with plenty of water and soap. Consult a doctor in event of any complaints.

Eyes:

Effects: Exposure to high exposure may result in irritation.

Symptoms: Redness.

First aid: Wash out with plenty of water with the eyelid held wide open. Consult with a doctor in event of any complaints.

Ingestion:



Effects: Is unlikely to be dangerous. (Aspartame is a food ingredient). Excessive ingestion is unlikely (Aspartame is intensely sweet), however, if this is suspected contact a medical doctor as a precaution.

Symptoms: No specific symptoms are known.

First aid: Wash out mouth with water. Consult a doctor.

5. FIRE-FIGHTING MEASURES

Extinguishing measures

Suitable: Water spray, carbon dioxide snow (CO₂), foam, dry chemicals.

Not suitable: -

Thermal de (composition) products: Aspartame can emit toxic fumes under fire conditions.

Protective equipment: Self-contained breathing apparatus.

Specific hazards: Finely dispersed particles are sensitive to dust explosion. Aspartame dust deposits can not be ignited by hot surfaces (the aspartame melts and will not continue to burn or smoulder).

6. ACCIDENTAL RELEASE MEASURES

Personal precautions: Use appropriate personal protection. Prevent forming of dust clouds.

Environmental precautions: Do not allow to enter natural water or oil.

Methods for cleaning up: Use appropriate personal protection. Collect spilled material. Remove all kinds of dust layers. Prevent forming of dust clouds. Finely dispersed particles are sensitive to dust explosion. Clean up affected area with water.

7. HANDLING AND STORAGE

Handling: Use appropriate personal protection. Appropriate measures should be taken to minimize dust generation (potential hazard of hazard explosion). Local exhaust recommended.

Storage: Keep in a cool, dry place. Store away from other chemicals. Storage temperature <20°C. Keep unused product sealed. Do not leave unsealed product exposed to relative humidity greater than 45%.

Packaging materials: Well sealed moisture-barrier packaging.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Avoid exposure first of all by technical and/or organizational measures

Occupational exposure limits

MAC value: Not established.

Other exposure limits: No specific exposure limit has been established for aspartame.

Respiratory protection: although not a substitute for effective dust control measures, dust masks should be worn during short-term operations where dust control by other means is not possible. Type to be selected depends on local circumstances and degree of exposure. See expert advice.

Hand protection: Rubber gloves.

Breakthrough time: Replace damaged gloves.

Eye protection: Safety goggles.

Skin protection: No special requirements, but avoid prolonged exposure of unprotected skin to aspartame, as the powder is hygroscopic and can cause skin irritation.



Environmental exposure controls: Avoid release to the environment.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Powder.

Color: White.

Odor: Odorless.

pH: Between 4.5 and 6.0 (0.8%(w/w) in water).

Boiling point/range: Not applicable.

Melting point/range: NO reproducible melting point. Aspartame cyclizes to produce diketopiperazine (DKP) and methanol before melting. DKP melts at 246°C.

Flash point: Information not available.

Flammability: BZ 1 (Brennzahl or "burn value")

Explosive properties:

Min. ignition temperature: 400°C

Min. ignition energy: 10mJ/20°C for fine powder. Higher for coarser powders.

Lower explosion limit: 13g/m³ in air.

Upper explosion limit: Information not available.

Auto ignition temperature: Information not available.

Oxidizing properties: Information not available.

Vapour pressure: Not applicable.

Relative density: 1.33(water=1)

Bulk density: 200-650kg/ m³

Solubility in water: 1%(weight/weight)(20°C)

Soluble in : Information not available.

Partition coefficient: Log Pow=0.07(calculated)

Viscosity: Not applicable.

Vapour density(air=1): Not applicable.

Conductivity: specific resistance 3.7×10^{13} ohm.m

Critical pressure: Not applicable.

Critical temperature: Not applicable.

Evaporation heat: Not applicable.

Specific heat: Not applicable.

10. STABILITY AND REACTIVITY

General : Stable under storage conditions (see section 7)

Condition to avoid: Exposure to sources of heat. Prevent forming of dust clouds.

Materials to avoid: Information not available.

Hazardous decomposition: Normally none, can emit toxic fumes under fire conditions.

11. TOXICOLOGICAL INFORMATION

Irritation

Eyes: Exposure to large amounts may be irritating.

Skin: Exposure to large amounts may be irritating.

Respiratory system: Exposure to large amounts may be irritating.

Acute toxicity



Oral : LD₅₀ rat:>4000mg/kg. The substance is not toxic.

Dermal: LD₅₀ rabbit: >5000mg/kg.

Inhalation: LC₅₀ 4hours rat: >5mg/l (dust)

Chronic toxicity

Oral: Regulatory authorities all over the world, including the EC Scientific Committee on Food (SCF), the Joint Expert Committee on Food Additives(JECFA) of the FA/WHO, as well as the US Food and Drug Administration(FDA) and the Health Protection Branch(HPB) in Canada, have concluded that aspartame's usage as a high intensity sweetener is safe. Aspartame has been assigned as ADI of 50 mg/kg body weight by the US FDA and of 40 mg/kg body weight by the WHO and regulatory authorities in Europe and Canada.

Dermal: Information not available.

Inhalation: Information not available.

Other information: Long term exposure may be irritating to respiratory tract, eyes and skin. The substance is not sensitizing (see section 4).

Carcinogenicity: Not carcinogenic.

Mutagenicity: Not mutagenic.

Reproduction toxicity: No reprotoxicity.

12. ECOLOGICAL INFORMATION:

Eco-toxicity: None; aspartame lacks specific toxicity since it consists of amino acids. When Aspartame enters the aquatic environment in high amounts due to an accident, it may cause oxygen depletion due to fast oxygen consumption by microbial biodegradation like any other food component.

Mobility: Information not available.

Persistence degradability: The substance is readily biodegradable.

Bio accumulative potential: Bioaccumulation in aquatic organisms is not expected.

Other adverse effects: Information not available.

13. DISPOSAL CONSIDERATONS

Please check the consequences of national regulations on this product yourself

Methods of disposal: Wash into approved sewage system (aspartame is biodegradable) or, in compliance with local laws, incinerate or place in approved landfill.

Contaminated packaging: Treat as industrial garbage.

Danger(s): Finely dispersed particles are sensitive to dust explosion.

14. TRANSPORT INFORMATION

Special precautions: -

Proper shipping name: No dangerous good according to transport regulations.

15. REGULATORY INFORMATION

Please check the consequences of national regulations on this product yourself.

Contains: aspartame

16. OTHER INFORMATION:

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Aspartame contains phenylalanine, therefore phenylketonurics should control their intake.