

MATERIAL SAFETY DATA SHEET**ASPARTIC ACID**

PRODUCT CODE NUMBER(S): 2060-5

PRODUCT IDENTIFICATION

Chemical Name and Synonyms: *Aspartic acid*
Chemical Family: *Amino acids*
Chemical Formula: $C_4H_7NO_4$
Product Use: *Laboratory reagent*
Manufacturer's Name and Address:
Caledon Laboratories Ltd.
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HAZARDOUS INGREDIENTS OF MATERIALS

Ingredients	%	TLV Units	CAS No.
<i>Aspartic acid</i>	<i>>98</i>	<i>Not established</i>	<i>56-84-8</i>

PHYSICAL DATA

Physical State: *Solid*
Odour and Appearance: *Colourless crystals, odourless*
Odour Threshold (ppm): *Not applicable*
Vapour Pressure (mm Hg): *Negligible*
Vapour Density (Air = 1): *Not applicable*
Evaporation Rate: *Negligible*
Boiling Point (degrees C): *Not available*
Melting Point (degrees C): *278-280°C (decomposes)*
pH: *2.5 to 3.5 (10% aqueous solution)*
Specific Gravity: *1.663*
Coefficient of Water/Oil distribution: *Not available*

SHIPPING DESCRIPTION

UN: *Not regulated*
T.D.G. Class: *Not regulated*
Pkg. Group: *Not regulated*

REACTIVITY DATA

Chemical Stability: *Stable under normal conditions of use and storage.*
Incompatibility with other substances: *May react violently or explosively with strong oxidizers.*
Reactivity: *Avoid excessive heat, ignition sources, all incompatible materials, generation of dust.*
Hazardous Decomposition Products: NO_x , CO_x

FIRE AND EXPLOSION DATA

Flammability: *May be combustible if strongly heated. As with most organic compounds, fine dust dispersed in air in*

the presence of an ignition source is a potential dust explosion hazard.

Extinguishing Media: *Water fog or spray, alcohol foam, dry chemical, carbon dioxide. Water spray can also be used to cool containers, prevent dust formation, flush chemical away from fire. Firefighters must wear protective equipment and clothing sufficient to prevent inhalation of dust or fumes, and contact with skin and eyes.*

Flash Point (Method Used): *Not applicable*

Autoignition Temperature: *Not applicable*

Upper Flammable Limit (% by volume): *Not applicable*

Lower Flammable Limit (% by volume): *Not applicable*

Hazardous Combustion Products: CO_x , NO_x

Sensitivity to Impact: *None identified*

Sensitivity to Static discharge: *As with most organic powders, mixtures of dust with air may be sensitive under certain conditions, when ignited by an electrostatic or other high-voltage spark, or other ignition source.*

TOXICOLOGICAL PROPERTIES AND HEALTH DATA

To the best of our knowledge, the physical, chemical and toxicological properties of this substance have not yet been thoroughly investigated. A naturally occurring nonessential amino acid.

Toxicological Data:

LD₅₀: *(ipr, mouse) 6 g/kg*

LC₅₀: *Not available*

Effects of Acute Exposure to Product:

Inhaled: *May be irritating. May cause coughing, shortness of breath. Inhalation of large amounts may be harmful.*

In contact with skin: *Concentrated solutions may be irritating. Dust is not expected to irritate. Probably not absorbed through skin.*

In contact with eyes: *Concentrated solutions may be irritating to eye tissue. Dust may cause mechanical irritation.*

Ingested: *Low in oral toxicity. Large doses may be irritating, causing nausea and vomiting.*

Effects of Chronic Exposure to Product:

Carcinogenicity: *Probably not carcinogenic*

Teratogenicity: *No human or animal information available. Not expected to be teratogenic.*

Reproductive Effects: *No human or animal information available. Not expected to be a reproductive hazard.*

Mutagenicity: *Some laboratory tests have shown mutagenic effects; results inconclusive.*

Synergistic Products: *None known*

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PREVENTIVE MEASURES

Engineering Controls: Local exhaust ventilation recommended.

Respiratory Protection: Dust/mist mask. For conditions where dust or mist is present, to the maximum use specified by the respirator supplier, NIOSH/OSHA approved half-face high-efficiency dust/mist filter respirator, or NIOSH/OSHA approved full face-piece high-efficiency dust/mist filter respirator. Higher or unknown concentrations, or for fire or spill conditions, self-contained breathing apparatus, or full face-piece, positive-pressure supplied-air respirator.

Eye Protection: Chemical safety glasses. Do not wear contact lenses when working with chemicals.

Skin Protection: Wear protective gloves and clean body-covering clothing, long-sleeved shirt, trousers, apron or lab coat.

Other Personal Protective Equipment: Safety shower and eye-wash fountain in work area.

Leak and Spill Procedure: Ventilate area. Eliminate ignition sources. Cleanup personnel should wear protective equipment and clothing sufficient to prevent inhalation of dust or mist, and contact with skin and eyes. Gather up in a manner that does not raise dust. Transfer into containers and arrange removal by disposal company. Wash site of spillage thoroughly with water and detergent.

Waste Disposal: Follow all federal, provincial and local regulations for disposal.

Handling Procedures and Equipment: COMBUSTIBLE as DUST. Workers using this chemical must be properly trained in its hazards and its safe use, and must wear appropriate protective equipment and clothing. Avoid generating dust. If there is dust, keep away from heat, sparks, and all sources of ignition; avoid the accumulation of static charge, use anti-sparking tools and ground and bond equipment and containers. Handle with extreme care. Use the smallest amount possible for the purpose, in a designated area with adequate ventilation. Use good housekeeping to prevent accumulations of dust. Avoid all contact and inhalation. Wash thoroughly after handling.

Storage Requirements: Store in suitable, labelled containers, in a cool, dry, well-ventilated area, out of direct sunlight. Keep containers tightly closed when not in use and when empty. Protect from damage. Store away from incompatible materials.

FIRST AID MEASURES**Specific Measures:**

Eyes: Flush eyes thoroughly with gently running water, holding eyelids open while flushing, for five to ten (5-10) minutes, or until no trace of chemical remains. Get medical advice if irritation develops.

Skin: Remove contaminated clothing. Brush or wipe off dry material. Flush skin with plenty of running water until no evidence of chemical remains. If irritation develops get medical attention.

Inhalation: Remove to fresh air. Give oxygen and get medical attention for any breathing difficulty.

Ingestion: If victim is alert and NOT convulsing, rinse mouth, give several glasses of water to drink to dilute. If discomfort occurs, or if a large amount has been ingested, get medical attention.

REFERENCES USED

Budavari: *The Merck Index*, 12th ed., 1997

Sax, Lewis: *Hawley's Condensed Chemical Dictionary*, 11th ed., 1987

Suppliers' Material Safety Data Sheets

ADDITIONAL INFORMATION

Date Issued: July 1999

Revision: June 2011

MSDS: 2060-5

Proposed Whmis Designation: Insufficient information available

Prepared by: Caledon Laboratories Ltd. (905) 877-0101
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