



SIGMA-ALDRICH

## Material Safety Data Sheet

Date Printed: 12/13/2008  
Date Updated: 03/23/2006  
Version 1.100

### Section 1 - Product and Company information

<b>Product Name</b>	L-Aspartic acid, 98+%		
<b>Product Number</b>	A93100		
<b>Brand</b>	Aldrich Chemical		
<b>Company</b>	Sigma-Aldrich		
<b>Address</b>	3050 Spruce Street		
<b>City, State, Zip, Country</b>	SAINT LOUIS, MO 63103 US		
<b>Technical Phone:</b>	800-325-5832	<b>Emergency Phone:</b>	314-776-6555
<b>Fax:</b>	800-325-5052		

### Section 2 - Composition/Information on Ingredient

<u>Substance Name</u>	<u>CAS #</u>	<u>SARA 313</u>	<u>EC no</u>	<u>Annex I Index Number</u>
L-ASPARTIC ACID	56-84-8	No	200-291-6	

**Formula** C<sub>4</sub>H<sub>7</sub>NO<sub>4</sub>  
**Synonyms** (S)-Aminobutanedioic acid, L-Aminosuccinic acid, Asparagic acid, L-Asparagic acid, Asparaginic acid, L-Asparaginic acid, ASPARAGINSAEURE (German), Aspartic acid, (L)-Aspartic acid, (S)-Aspartic acid, Butanedioic acid, amino-, (S)-, H-Asp-OH

### Section 3 - Hazards Identification

**Emergency Overview**  
Caution: Avoid contact and inhalation.

**HMIS Rating**  
Health: 1      Flammability: 0      Reactivity: 0

**NFPA Rating**  
Health: 1      Flammability: 0      Reactivity: 0

For additional information on toxicity, please refer to Section 11.

### Section 4 - First Aid Measures

**Oral Exposure**  
If swallowed, wash out mouth with water provided person is conscious. Call a physician.

**Inhalation Exposure**  
If inhaled, remove to fresh air. If breathing becomes difficult, call a physician.

**Dermal Exposure**  
In case of contact, immediately wash skin with soap and copious amounts of water.

**Eye Exposure**  
In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

### Section 5 - Fire Fighting Measures

**Autoignition Temp:** N/A

**Extinguishing Media**  
**Suitable**  
Water spray, Carbon dioxide, dry chemical powder, or appropriate foam.

**Firefighting**  
**Protective Equipment**  
Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.  
**Specific Hazard(s)**  
Emits toxic fumes under fire conditions.

### Section 6 - Accidental Release Measures

**Procedure(s) of Personal Precaution(s)**  
Exercise appropriate precautions to minimize direct contact with skin or eyes and prevent inhalation of dust.

**Methods for Cleaning Up**  
Sweep up, place in a bag and hold for waste disposal. Avoid raising dust. Ventilate area and wash spill site after material pickup is complete.

### Section 7 - Handling and Storage

**Handling**  
**User Exposure**  
Avoid inhalation. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure.

**Storage**  
**Suitable**  
Keep tightly closed.

### Section 8 - Exposure Controls / PPE

**Engineering Controls**  
Safety shower and eye bath. Mechanical exhaust required.

**Personal Protective Equipment**  
**Respiratory**  
Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). Respiratory protection is not required. Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN 143) dust masks.

**Hand**  
Protective gloves.  
**Eye**  
Chemical safety goggles.

**General Hygiene Measures**  
Wash thoroughly after handling.

**Exposure Limits**

<u>Source</u>	<u>Type</u>	<u>Value</u>
OSHA	TWA	15 mg/m3 MG/M3 (RESPIRABLE)
ACGIH	TWA	10 mg/m3 MG/M3 (RESPIRABLE)

### Section 9 - Physical/Chemical Properties

<u>Appearance</u>	<u>Physical State</u>	<u>Color</u>	<u>Form</u>
Solid		White	Powder
<b>Molecular Weight</b>	133.1 AMU		
<b>pH</b>	2.8	20 °C	Concentration: 4.5 g/l
<b>BP/BP Range</b>	N/A		
<b>MP/MP Range</b>	> 300 °C		
<b>Freezing Point</b>	N/A		
<b>Vapor Pressure</b>	N/A		
<b>Vapor Density</b>	N/A		
<b>Saturated Vapor Conc.</b>	N/A		
<b>SG/Density</b>	1.66 g/cm3		
<b>Bulk Density</b>	N/A		
<b>Odor Threshold</b>	N/A		
<b>Volatile%</b>	N/A		
<b>VOC Content</b>	N/A		
<b>Water Content</b>	N/A		
<b>Solvent Content</b>	N/A		
<b>Evaporation Rate</b>	N/A		
<b>Viscosity</b>	N/A		
<b>Partition Coefficient</b>	N/A		
<b>Decomposition Temp.</b>	N/A		
<b>Flash Point °F</b>	N/A		
<b>Flash Point °C</b>	N/A		
<b>Explosion Limits</b>	N/A		
<b>Flammability</b>	N/A		
<b>Autoignition Temp</b>	N/A		
<b>Optical Rotation</b>	Degree of Rotation +29.5 - +24.7 (+/-1) Solvent: 5 M HCl 50 g/l		
<b>Solubility</b>	N/A		
<b>Solubility in Water:</b>	Soluble.		
<b>Solvent:</b>	0.5M in HCl 1M, 20°C, complete, colorless		

N/A = not available

### Section 10 - Stability and Reactivity

<b>Stability</b>	Stable
<b>Stable</b>	Stable.
<b>Conditions to Avoid</b>	Heat.

**Materials to Avoid**  
Strong acids, Strong bases, Strong oxidizing agents, Nitric acid

**Hazardous Decomposition Products**  
**Hazardous Decomposition Products**  
Carbon monoxide, Carbon dioxide, Nitrogen oxides

**Hazardous Polymerization**  
**Hazardous Polymerization**  
Will not occur.

### Section 11 - Toxicological Information

**Route of Exposure**  
**Skin Contact**  
May cause skin irritation.  
**Skin Absorption**  
May be harmful if absorbed through the skin.  
**Eye Contact**  
May cause eye irritation.  
**Inhalation**  
May be harmful if inhaled. Material may be irritating to mucous membranes and upper respiratory tract.  
**Ingestion**  
May be harmful if swallowed.

**Signs and Symptoms of Exposure**  
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

**RTECS Number:** CI9098500

**Toxicity Data**  
Intraperitoneal - Mouse: 6 GM/KG (LD50)

**Irritation Data**  
Skin - Rabbit:  
Remarks: No irritation effect

<u>Species</u>	<u>Dose</u>	<u>Cell Type</u>	<u>Mutation test</u>
Human	10 MG/L	lymphocyte	Sister chromatid exchange

### Section 12 - Ecological Information

No data available.

### Section 13 - Disposal Considerations

**Appropriate Method of Disposal of Substance or Preparation**  
Contact a licensed professional waste disposal service to dispose of this material.  
Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.  
Observe all federal, state, and local environmental regulations.

### Section 14 - Transport Information

**DOT**  
**Proper Shipping Name:** None  
**Non-Hazardous for Transport** This substance is considered to be nonhazardous for transport.

**IATA**  
**Non-Hazardous for Air Transport** Non-hazardous for air transport.

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**Section 15 - Regulatory Information**

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**EU Additional Classification****Safety Statements** S: 24/25 22

Avoid contact with skin and eyes. Do not breathe dust.

**US Classification and Label Text****US Statements**

Caution: Avoid contact and inhalation.

**United States Regulatory Information****SARA Listed:** No**TSCA Inventory Item:** Yes**Canada Regulatory Information****WHMIS Classification**

This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.

**DSL:** Yes**NDSL:** No

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**Section 16 - Other Information**

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**Disclaimer**

For R&amp;D use only. Not for drug, household or other uses.

**Warranty**

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. SigmaAldrich Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. Copyright 2008 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.