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**1. Identification****1.1 GHS Product identifier**

Product name L-aspartic acid

**1.2 Other means of identification**

Product number AO150

Other names L-Asparticacid

**1.3 Recommended use of the chemical and restrictions on use**

Identified uses For industry use only. Food additives -&gt; Flavoring Agents

Uses advised against no data available

**1.4 Supplier's details**

Company Acros PharmaTech Limited

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**2. Hazard identification****2.1 Classification of the substance or mixture**

Not classified.

**2.2 GHS label elements, including precautionary statements**

Pictogram(s)	No symbol.
Signal word	No signal word.
Hazard statement(s)	none
Precautionary statement(s)	
Prevention	none
Response	none
Storage	none
Disposal	none

**2.3 Other hazards which do not result in classification**

none

**3. Composition/information on ingredients****3.1 Substances**

Chemical name Common names and synonyms CAS number EC number Concentration

L-aspartic acid L-aspartic acid 56-84-8 none  $\geq 98\%$ **4. First-aid measures****4.1 Description of necessary first-aid measures**

General advice

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Consult a physician. Show this safety data sheet to the doctor in attendance.

**If inhaled**

Fresh air, rest. Refer for medical attention.

**In case of skin contact**

Remove contaminated clothes. Rinse and then wash skin with water and soap.

**In case of eye contact**

First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then refer for medical attention.

**If swallowed**

Rinse mouth. Do NOT induce vomiting. Give one or two glasses of water to drink.

**4.2 Most important symptoms/effects, acute and delayed**

no data available

**4.3 Indication of immediate medical attention and special treatment needed, if necessary**

/SRP:/ Basic treatment: Establish a patent airway (oropharyngeal or nasopharyngeal airway, if needed). Suction if necessary. Watch for signs of respiratory insufficiency and assist ventilations if needed. Administer oxygen by nonrebreather mask at 10 to 15 L/min. Monitor for pulmonary edema and treat if necessary ... . Monitor for shock and treat if necessary ... . Anticipate seizures and treat if necessary ... . For eye contamination, flush eyes immediately with water. Irrigate each eye continuously with 0.9% saline (NS) during transport ... . Do not use emetics. For ingestion, rinse mouth and administer 5 ml/kg up to 200 ml of water for dilution if the patient can swallow, has a strong gag reflex, and does not drool ... . Cover skin burns with dry sterile dressings after decontamination ... . /Poisons A and B/

**5. Fire-fighting measures****5.1 Extinguishing media****Suitable extinguishing media**

In case of fire in the surroundings, use appropriate extinguishing media.

**5.2 Specific hazards arising from the chemical**

no data available

**5.3 Special protective actions for fire-fighters**

Wear self-contained breathing apparatus for firefighting if necessary.

**6. Accidental release measures****6.1 Personal precautions, protective equipment and emergency procedures**

Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust. For personal protection see section 8.

**6.2 Environmental precautions**

Sweep spilled substance into covered containers. If appropriate, moisten first to prevent dusting. Wash away remainder with plenty of water. Personal protection: particulate filter respirator adapted to the airborne concentration of the substance.

**6.3 Methods and materials for containment and cleaning up**

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Pick up and arrange disposal. Sweep up and shovel. Keep in suitable, closed containers for disposal.

## 7. Handling and storage

### 7.1 Precautions for safe handling

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Avoid exposure - obtain special instructions before use. Provide appropriate exhaust ventilation at places where dust is formed. For precautions see section 2.2.

### 7.2 Conditions for safe storage, including any incompatibilities

Separated from strong oxidants.

## 8. Exposure controls/personal protection

### 8.1 Control parameters

#### Occupational Exposure limit values

no data available

#### Biological limit values

no data available

### 8.2 Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

### 8.3 Individual protection measures, such as personal protective equipment (PPE)

#### Eye/face protection

Safety glasses with side-shields conforming to EN166. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

#### Skin protection

Wear impervious clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace. Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

#### Respiratory protection

Wear dust mask when handling large quantities.

#### Thermal hazards

no data available

## 9. Physical and chemical properties

#### Physical state

White crystalline powder

#### Colour

White, crystalline solid

#### Odour

no data available

#### Melting point/ freezing point

-59°C(lit.)

#### Boiling point or initial boiling point and boiling range

131°C/22mmHg(lit.)

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<b>Flammability</b>	Combustible.
<b>Lower and upper explosion limit / flammability limit</b>	no data available
<b>Flash point</b>	107°C(lit.)
<b>Auto-ignition temperature</b>	no data available
<b>Decomposition temperature</b>	324°C
<b>pH</b>	no data available
<b>Kinematic viscosity</b>	no data available
<b>Solubility</b>	In water:5 g/L (25 °C)
<b>Partition coefficient n-octanol/water (log value)</b>	no data available
<b>Vapour pressure</b>	2.6X10-7 mm Hg at 25°C (est)
<b>Density and/or relative density</b>	1.514g/cm <sup>3</sup>
<b>Relative vapour density</b>	no data available
<b>Particle characteristics</b>	no data available

## 10. Stability and reactivity

### 10.1 Reactivity

no data available

### 10.2 Chemical stability

Stable under recommended storage conditions.

### 10.3 Possibility of hazardous reactions

Dust explosion possible if in powder or granular form, mixed with air. If dry, it can be charged electrostatically by swirling, pneumatic transport, pouring, etc.

### 10.4 Conditions to avoid

no data available

### 10.5 Incompatible materials

no data available

### 10.6 Hazardous decomposition products

no data available

## 11. Toxicological information

### Acute toxicity

- Oral: no data available
- Inhalation: no data available
- Dermal: no data available

### Skin corrosion/irritation

no data available

### Serious eye damage/irritation

no data available

### Respiratory or skin sensitization

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no data available

**Germ cell mutagenicity**

no data available

**Carcinogenicity**

no data available

**Reproductive toxicity**

no data available

**STOT-single exposure**

no data available

**STOT-repeated exposure**

no data available

**Aspiration hazard**

no data available

**12. Ecological information****12.1 Toxicity**

- Toxicity to fish: no data available
- Toxicity to daphnia and other aquatic invertebrates: no data available
- Toxicity to algae: no data available
- Toxicity to microorganisms: no data available

**12.2 Persistence and degradability**

AEROBIC: The biodegradation of L-aspartic acid was measured in several BOD<sub>5</sub> tests. After 5 days, 48.5%(1) 38.7(2) and 80.5%(3) of the theoretical BOD was reached using a sewage inoculum. L-Aspartic acid was degraded by 81% BOD<sub>T</sub> after 30 days using a sewage inoculum(4). In a second Warburg test using an activated sludge inoculum, 8.9, 16.2, and 28.8% BOD<sub>T</sub> was reached after 0.25, 0.5, and 1 day, respectively(5). DL-Aspartic acid was rapidly degraded by 98 to >99% in a laboratory-scale activated sludge unit at initial concentrations of 599, 1198, 2396, and 4792 mg/L and average detention times of 20.5, 29, 42, and 85 hours, respectively(6). Samples of marine water from the Scheldt estuary, the Belgian coastal zone of the North Sea, and the English Channel were incubated with <sup>14</sup>C-labeled DL-aspartic acid and relative rates of total utilization (incorporation plus respiration) of 2.7, 1.5, and 0.10%/hr, respectively, were measured over a 4-hour period(7). Based on these data, L-aspartic acid is expected to biodegrade rapidly.

**12.3 Bioaccumulative potential**

An estimated BCF of 0.7 was calculated in fish for L-aspartic acid(SRC), using a water solubility of 5,360 mg/L(1) and a regression-derived equation(2). According to a classification scheme(3), this BCF suggests the potential for bioconcentration in aquatic organisms is low(SRC).

**12.4 Mobility in soil**

The K<sub>oc</sub> of L-aspartic acid is estimated as 39(SRC), using a water solubility of 5,360 mg/L(1) and a regression-derived equation(2). According to a classification scheme(3), this estimated K<sub>oc</sub> value suggests that L-aspartic acid is expected to have very high mobility in soil. However, L-aspartic acid has pK<sub>a</sub> values of 1.92, 3.87, and 9.87(5), indicating that this compound will exist as a zwitterion in the environment. In H(AI) montmorillonite, aspartic acid showed an L-2 type adsorption isotherm with an initial preferential sorption when compared with the solvent or other solutes followed by a decrease in sorption as more solute was sorbed(4).

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**12.5 Other adverse effects**

no data available

**13. Disposal considerations****13.1 Disposal methods****Product**

The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

**Contaminated packaging**

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

**14. Transport information****14.1 UN Number**

ADR/RID: Not dangerous goods. IMDG: Not dangerous goods. IATA: Not dangerous goods.

**14.2 UN Proper Shipping Name**

ADR/RID: unknown

IMDG: unknown

IATA: unknown

**14.3 Transport hazard class(es)**

ADR/RID: Not dangerous goods. IMDG: Not dangerous goods. IATA: Not dangerous goods.

**14.4 Packing group, if applicable**

ADR/RID: Not dangerous goods. IMDG: Not dangerous goods. IATA: Not dangerous goods.

**14.5 Environmental hazards**

ADR/RID: no IMDG: no IATA: no

**14.6 Special precautions for user**

no data available

**14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**

no data available

**15. Regulatory information****15.1 Safety, health and environmental regulations specific for the product in question**

Chemical name	Common names and synonyms	CAS number	EC number
L-aspartic acid	L-aspartic acid	56-84-8	none
European Inventory of Existing Commercial Chemical Substances (EINECS)			Listed.



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<b>EC Inventory</b>	Listed.
<b>United States Toxic Substances Control Act (TSCA) Inventory</b>	Listed.
<b>China Catalog of Hazardous chemicals 2015</b>	Not Listed.
<b>New Zealand Inventory of Chemicals (NZIoC)</b>	Listed.
<b>Philippines Inventory of Chemicals and Chemical Substances (PICCS)</b>	Listed.
<b>Vietnam National Chemical Inventory</b>	Listed.
<b>Chinese Chemical Inventory of Existing Chemical Substances (China IECSC)</b>	Listed.

## 16. Other information

### Abbreviations and acronyms

- CAS: Chemical Abstracts Service
- ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
- RID: Regulation concerning the International Carriage of Dangerous Goods by Rail
- IMDG: International Maritime Dangerous Goods
- IATA: International Air Transportation Association
- TWA: Time Weighted Average
- STEL: Short term exposure limit
- LC50: Lethal Concentration 50%
- LD50: Lethal Dose 50%
- EC50: Effective Concentration 50%

### References

- IPCS - The International Chemical Safety Cards (ICSC), website: <http://www.ilo.org/dyn/icsc/showcard.home>
- HSDB - Hazardous Substances Data Bank, website: <https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm>
- IARC - International Agency for Research on Cancer, website: <http://www.iarc.fr/>
- eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website: [http://www.echemportal.org/echemportal/index?pageID=0&request\\_locale=en](http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en)
- CAMEO Chemicals, website: <http://cameochemicals.noaa.gov/search/simple>
- ChemIDplus, website: <http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp>
- ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: <http://www.phmsa.dot.gov/hazmat/library/erg>
- Germany GESTIS-database on hazard substance, website: <http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp>
- ECHA - European Chemicals Agency, website: <https://echa.europa.eu/>

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**Disclaimer: 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. We as supplier shall not be held liable for any damage resulting from handling or from contact with the above product.**