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AJINOMOTO

SAFETY DATA SHEET:

L-GLUTAMIC ACID

The information is provided as a service to our customers and is intended only for their use. This information is based on technical information believed to be reliable and will be revised as new knowledge or experience is gained.

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1. Chemical Product and Company Identification

1.1. Identification of the substance: L-Glutamic acid
REACH regulation No. N/A
1.2. Use of the substance: Various use (drugs, nutritional, industrial)
1.3. Detail of the supplier of the safety data sheet
Manufacturer's Name: Ajinomoto Co., Inc.

1.4. **Contact for Correspondence Japan:**
Ajinomoto Co., Inc.
15-1, Kyobashi 1-chome, Chuo-ku, Tokyo
104-8315, Japan
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Fax N°: +81-(0)3-5250-0079

Contact for Correspondence USA:
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4020 Ajinomoto Drive, Raleigh
N.C. 27610, U.S.A
Tel N°: +1-800-682-0982
Fax N°: +1-919-325-1420

Contact for Correspondence Brazil:
Ajinomoto do Brasil Indústria e Comércio
de Alimentos Ltda.
Rua Vergueiro, 1737, Vila Mariana,
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Contact for Correspondence Europe:
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Tel N°: +32(0)10 48 31 22
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Contact for Correspondence China:
Ajinomoto (China) Co., Ltd.
718 Rongle Dong Road, Songjiang,
Shanghai 201613 P.R. China
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Fax N°: +86 21 5774-0433

Contact for Correspondence Asia, Oceania:
Shanghai Ajinomoto Trading Co., Ltd.
718 Rongle Dong Road, Songjiang,
Shanghai 201613 P.R. China
Tel N°: +86 21 5774-5353
Fax N°: +86 21 5774-0433

1.5. Emergency Telephone:
In continental U.S., Hawaii, Puerto Rico, Canada, Alaska and Virgin Islands contact **CHEMTREC** at 1-800-424-9300.

For Japan, Brazil, Europe, China and Asia refer to section 1.4

2. Hazards Identification

2.1. Classification of the substance
Physical hazards: Not applicable
Health hazards: Not applicable
Environmental hazards: Not applicable
2.2. Label elements (REGULATION (EC) No.1272/2008)
Not applicable
2.3. Other hazards: May cause eye and skin irritation.
It will increase the biological oxygen demand (BOD) of water.

3. Composition, Information on Ingredients

3.1. Substance

Common Chemical name:	L-Glutamic acid
Synonyms:	(S)-2-Aminoglutaric acid
Formula:	$C_5H_9NO_4$
Molecular Weight:	147.13
Composition:	98.5 - 100.5%
CAS No.:	56-86-0
EINECS No.:	200-293-7
IUPAC:	L-Glu

4. First-Aid Measures

4.1. Description of first aid measures

Inhalation: Immediately relocate to a fresh air environment. Rinse mouth with water. If not breathing, give artificial respiration. If breathing becomes difficult, give oxygen and seek medical attention.

Skin Contact: Wash with soap and copious amounts of water. If irritation persists, seek medical attention.

Eye Contact: Immediately flush eyes with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating eyelids with fingers. If contact lenses are being worn, remove lenses and continue rinsing. Seek medical attention.

Ingestion: Rinse mouth with water and seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

4.3. Indication of any immediate medical attention and special treatment needed

No information available

5. Fire-fighting measures

5.1. Extinguishing media

Water spray, carbon dioxide, dry chemical powder/foam

5.2. Special hazards arising from the substance or mixture

Fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard. Upon combustion will result in carbon monoxide, carbon dioxide and nitrogen oxide being released.

5.3. Advice for fire-fighting

No information available

6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protection, Make spills wet to prevent the generation of dust and then, sweep up into a closed container.

6.2. Environmental precautions

Do not discharge into sewer, river, underground water, etc.

6.3. Methods and material for containment and cleaning up

After recovering, wash away spilled area with plenty of water.

6.4. Reference to other sections

Personal protection: see section 8

7. Handling and storage

7.1. Precautions for safe handling

Follow good industrial practice in housekeeping and personal hygiene. Wear personal protective equipment as outlined in section 8.

7.2. Conditions for safe storage, including any incompatibilities

Store in closed containers in a dry area. Avoid humidity, sunlight and high temperature.

8. Exposure controls/personal protection

8.1. Control parameters

Contains no substance with occupational exposure limit value.

8.2. Exposure controls

Respiratory protection:	Dust mask or appropriate respirator. Utilize local exhaust ventilation.
Protective gloves:	Rubber
Eye protection:	Chemical safety goggles.
Other protective equipment:	Wear appropriate laboratory apparel, protect exposed skin.
Occupational exposure limits:	Not established

9. Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance:	White crystals or crystalline powder
Melting point:	160°C (decomposes)
Solubility:	0.72 g / 100 g H_2O (20°C)
pH:	3.0 - 3.5 (1.0 g in 100 mL of H_2O (saturated aqueous solution))

9.2. Other data

No data available

10. Stability and reactivity

10.1. Reactivity

The following applies in general to flammable organic substances and mixtures; in correspondingly fine distribution, when whirled up a dust explosion potential may generally be assumed.

10.2. Chemical stability

Stable under normal temperature and pressures

10.3. Possibility of hazardous reactions

Nitrogen oxides (combustion)

10.4. Conditions to avoid

Humidity and high temperature. In presence of moisture, will oxidize and darken.

10.5. Incompatibility materials

Strong oxidizing agents

10.6. Hazardous decomposition products:

Nitrogen oxides (combustion)

11. Toxicological information

11.1. Information on toxicological effects

Acute oral toxicity:	LD_{50} : 5.11 g/kg rat
Sensitization:	No data available
Mutagenicity:	No data available
Primary skin irritation:	May cause skin irritation. No specific data available
Primary eye irritation:	May cause eye irritation. No specific data available

12. Ecological information

12.1. Toxicity

No data available

12.2. Persistence and degradability

BOD = 0.855 g/g

12.3. Bio accumulative potential

No data available

12.4. Mobility in soil

No data available

12.5. Results of PBT and vPvB assessment

PBT and vPvB assessment not available as chemical safety assessment not required/not conducted.

12.6. Other adverse effects

WGK class (Europe): 1 (group classification according to VwVwS / 17 May 1999, Germany)

13. Disposal considerations

Dispose of the material as you would with a non-hazardous material in accordance with all applicable national, state and local regulations.

14. Transport information

Avoid humidity and high temperature. Prevent damage of the container.

14.1. - 14.6. Not classified as dangerous in meaning of transport regulations.

14.7. Transport in Bulk according to Annex II of MARPOL 73/78 and the IBC code.

15. Regulatory information

15.1. Safety, health, and environmental regulations/legislation specific for the substance or mixture

EU regulations

Major Accident Hazard	96/82/EC
Legislation	Directive 96/82/EC does not apply
Regulation (EC) No.1005/2009 on substances that deplete the ozone layer	not regulated
Regulation (EC) No.850/2004 of the European Parliament and of the Council of 29 April 2004 on Directive 79/117/EEC	not regulated
Regulation (EC) No.689/2008 concerning the export and import of dangerous chemicals.	not regulated
Substance of very high concern (SVHC)	This product does not contain substance of very high concern above the respective regulatory limit (> 0.1% (w/w) Regulation (EC) No.1907/2006 (REACH), Article 57).

Other National Legislation

None especially.

The information given in this Safety Data Sheet does not replace the users own assessment of workplace risk as required by national, state and local health and safety legislation.

15.2. Chemical safety assessment

For this product a chemical safety assessment was not carried out.

16. Other information

The information contained in this SDS is, to the best of our knowledge true and accurate. Any recommendations or suggestions made are without guarantee, since the conditions of use are beyond our control.