

# spectrum

chemicals & laboratory products

A Division of Spectrum Chemical Mfg. Corp.

Dear Customer,

## This File Contains Both The ANSI Material Safety Data Sheet and The GHS Safety Data Sheet For The Same Product

Spectrum is currently transitioning all chemical product labeling from the ANSI<sup>1</sup> format to the GHS<sup>2</sup> format (see note below). In order to ensure that you receive complete labeling during the transition, we have included both the ANSI MSDS and the GHS SDS in a single file. The ANSI MSDS is given first, followed by the GHS SDS. Please use whichever matches the container label.

### Why It Matters:

The complete precautionary labeling for this chemical consists of BOTH the label on the container AND the matching Material Safety Data Sheet (for ANSI labels) or Safety Data Sheet (for GHS labels). Both elements of the labeling [Label + (M)SDS] are written to be read and understood together, so as to provide complete precautionary information. It is intended for you to read and understood BOTH before handling or using the chemical.

### Picking the Right One: 2 Easy Ways To Tell Whether Your Container Has an ANSI Label or a GHS Label

- 1) GHS labels: any pictogram displayed in the upper left-hand corner will be inside a red diamond.  
ANSI labels: pictograms, if present, will be inside individual black boxes.
- 2) GHS labels: on the bottom of the right-hand panel of the label, locate the Lot Number. Directly to the left will be a string of control characters, followed by a single letter.  
For GHS labels, the string of characters will end in "GHS:"

**Label in ANSI Format**

<p><b>CAUTION!</b> MAY BE HARMFUL IF SWALLOWED MAY CAUSE EYE AND SKIN IRRITATION MAY AFFECT BEHAVIOR AND METABOLISM</p> <p>Do not taste or swallow. Avoid contact with eyes, skin and clothing. Avoid breathing mist or vapor. Avoid prolonged or repeated exposure. Use with adequate ventilation. Wash thoroughly after handling.</p> <p><b>FIRST AID:</b> In case of contact, flush affected area with plenty of water for at least 15 minutes. Remove if worn. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. If irritation persists, call a physician.</p> <p><b>KEEP FROM CHILDREN</b></p>	<p><b>SPECTRUM</b> CHEMICALS &amp; LABORATORY PRODUCTS</p> <p><b>BE159      SIZ SY</b></p> <p><b>Benzyl Benzoate</b> (Benzoic Acid Phenylmethyl Ester)</p> <p>U.S.P. CAS 120-51-4</p> <p><b>CAUTION:</b> For manufacturing, processing or repacking. Read and understand the label and Material Safety Data Sheet (MSDS) prior to use.</p> <p>For chemical emergency, call (800)424-9300</p> <p>www.SpectrumChemical.com</p>	<p><math>C_{11}H_{12}O_2</math>      F.W. 212.24</p> <p>Assay ..... 99.0-100.5% Specific Gravity @ 25°C ..... 1.116-1.120 Congealing Temperature ..... Min: 18.0°C Refractive Index @ 20°C ..... 1.565-1.570 Acidity ..... To pass test</p> <p><b>MAXIMUM LIMITS</b></p> <p>Aldehyde ..... 0.05% Residual Solvents ..... To pass test</p> <p><b>LIGHT SENSITIVE.</b> Keep tightly closed in light-resistant containers.</p> <p><b>FLUSHED WITH NITROGEN</b></p> <p>Lot No. XQ###</p>
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SPECTRUM CHEMICAL MFG. CORP.      Gardena, CA 90248 • New Brunswick, NJ 08901

CORPORATE OFFICES  
14422 South San Pedro Street  
Gardena, California 90248  
PHONE 310.516.8000  
FAX 310.516.9843

**Label in GHS Format**

**WARNING!**

- May irritate or sensitize • May cause central nervous system effects based on animal data
- Do not use or breathe • Wear protective gloves
- After handling
- WASH AND # DECONTAMINATE! Wash and DECONTAMINATE or consult physician
- If you feel unwell, consult your doctor

**KEEP FROM CHILDREN**

**SPECTRUM™**

BE159      SIZ SY

**Benzyl Benzoate**  
(Benzoic Acid Phenylmethyl Ester)

U.S.P.  
CAS 129-51-4

**CAUTION:** For manufacturing processing or shipping, read and understand the label and Safety Data Sheet (SDS) prior to use.

Chemical Emergency: (800)474-4088  
www.SpectrumChemical.com

Flash	99.0-102.0°C
Boiling Point @ 760°C	171.5-172.0°C
Freezing Temperature	Min. 18.0°C
Refractive Index @ 20°C	1.568-1.578
Acidity	To pass test
<b>MAXIMUM LIMITS</b>	
Aldehyde	0.05%
Residual Solvents	To pass test

**LIGHT SENSITIVE:** Keep tightly closed in light-resistant containers.

**FLUSHED WITH NITROGEN**

Lot No. XQ####

<sup>1</sup> American National Standards Institute

<sup>2</sup> Globally Harmonized System for Hazard Communication

Sincerely,

Regulatory Affairs

## MATERIAL SAFETY DATA SHEET

NFPA	HMIS	Personal Protective Equipment
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Health Hazard	1
Fire Hazard	1
Reactivity	0



See Section 8.

### 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

<b>Product code:</b>	GL125
<b>Product Name:</b>	L-GLUTAMIC ACID
<b>Chemical Name:</b>	Glutamic acid, L-
<b>Synonyms:</b>	Glutamic acid alpha-Aminoglutaric acid L-2-Aminoglutaric acid 2-Aminopentanedioic acid 1-Aninopropane-1,3-dicarboxylic acid Glusate Glutacid alpha-Glutamic acid Glutaminic acid L-Glutaminic acid Glutaminol Glutaton
<b>Recommended use:</b>	No information available.
<b>CAS #:</b>	56-86-0
<b>RTECS #</b>	LZ9700000
<b>Formula:</b>	C5-H9-N-O4
<b>Cl#:</b>	Not available
<b>Supplier:</b>	Spectrum Chemicals and Laboratory Products, Inc. 14422 South San Pedro St. Gardena, CA 90248 (310) 516-8000
<b>Order Online At:</b>	<a href="https://www.spectrumchemical.com">https://www.spectrumchemical.com</a>
<b>Emergency Telephone Number:</b>	CHEMTREC: 1-800-424-9300
<b>Contact Person:</b>	Regina Wachenheim (East Coast)
<b>Contact Person:</b>	Martin LaBenz (West Coast)

### 2. HAZARDS IDENTIFICATION

## 2. HAZARDS IDENTIFICATION

### EMERGENCY OVERVIEW

May cause skin and eye irritation  
May cause irritation of respiratory tract

**Odor:**  
Odorless.

**Physical state:**  
Solid.

**Appearance:**  
Crystals. Crystalline powder.

**Color:**  
White.

### OSHA Regulatory Status

This material is not considered hazardous by the OSHA Hazard Communication Standard (29 1910.1200)

### POTENTIAL HEALTH EFFECTS

#### Principal Routes of Exposure:

Ingestion. Inhalation.

#### Acute Potential Health Effects:

##### Skin Contact:

May cause skin irritation in sensitive individuals.

##### Eye Contact:

Contact with eyes may cause irritation. Mild eye irritation.

##### Inhalation:

May cause irritation of respiratory tract.

##### Ingestion:

Expected to be a low hazard for usual industrial handling. May cause nausea and vomiting. May cause headache.

#### Chronic Potential Health Effects:

##### Component

L-Glutamic Acid  
56-86-0 (100)

##### Carcinogen Status:

No information available

#### Target Organs:

No information available

#### Mutagenic Effects:

May affect genetic material

#### Teratogenic Effects:

No information available

**Aggravated Medical Conditions:** No information available

See Section 11 for additional Toxicological Information

### POTENTIAL ENVIRONMENTAL EFFECTS

No information available

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS-No.	Weight %
L-Glutamic Acid	56-86-0	100

## 4. FIRST AID MEASURES

<b>General Advice:</b>	Poison information centres in each State capital city can provide additional assistance for scheduled poisons (13 1126)
<b>Skin Contact:</b>	Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. Get medical attention if irritation develops. Consult a physician if necessary.
<b>Eye Contact:</b>	Flush eye with water for 15 minutes. Get medical attention if irritation occurs. If symptoms persist, call a physician.
<b>Inhalation:</b>	Move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.
<b>Ingestion:</b>	Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Consult a physician if necessary.
<b>Notes to Physician:</b>	Treat symptomatically

## 5. FIRE-FIGHTING MEASURES

### Flammable Properties

<b>Flashpoint (°C/°F):</b>	No information available.
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<b>Flash Point Tested according to:</b> Not available
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<b>Lower Explosion Limit (%):</b>	No information available
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<b>Upper Explosion Limit (%):</b>	No information available
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<b>Autoignition Temperature (°C/°F):</b>	No information available
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<b>Suitable Extinguishing Media:</b>	Carbon dioxide (CO <sub>2</sub> ). Dry chemical. Water spray mist or foam.
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<b>Unsuitable Extinguishing Media:</b>	No information available.
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<b>Hazardous Combustion Products:</b>	Carbon monoxide; Carbon dioxide; Nitrogen oxides
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<b>Specific hazards:</b>	May be combustible at high temperatures
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<b>Special Protective Equipment for Firefighters:</b>	As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear
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<b>Specific Methods:</b>	No information available.
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## 6. ACCIDENTAL RELEASE MEASURES

### Personal Precautions:

Ensure adequate ventilation. Use personal protective equipment. Avoid contact with skin, eyes and clothing. Avoid dust formation. Remove all sources of ignition.

**Environmental Precautions:**

No information available.

**Methods for Cleaning Up:**

Sweep up and shovel into suitable containers for disposal. Clean contaminated surface thoroughly.

## 7. HANDLING AND STORAGE

**Handling****Technical Measures/Precautions:**

Provide sufficient air exchange and/or exhaust in work rooms. Avoid dust formation. Keep away from incompatible materials.

**Safe Handling Advice:**

Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Keep away from heat and sources of ignition. Avoid dust formation. Do not ingest. Do not breathe vapours/dust. Handle in accordance with good industrial hygiene and safety practice.

**Storage****Technical Measures/Storage Conditions:**

Keep container tightly closed in a dry and well-ventilated place. Store at room temperature in the original container. Store away from incompatible materials.

**Incompatible Materials:**

Strong oxidizing agents.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

**Engineering measures to reduce exposure:**

Ensure adequate ventilation. Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

**Personal Protective Equipment**

**Eye protection:** Safety glasses. Safety glasses with side-shields.

**Skin and body protection:** Long sleeved clothing. Chemical resistant apron. Gloves.

**Respiratory protection:** Effective dust mask. Wear respirator with dust filter..

**Hygiene measures:** Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product. When using, do not eat, drink or smoke.

**National occupational exposure limits****United States**

U.S Occupational Exposure Limits: Not determined

Components	OSHA	NIOSH	ACGIH	AIHA WHEEL
L-Glutamic Acid - 56-86-0	None	None	None	None

**Canada**

Canada Occupational Exposure Limits: Not determined

Components	Alberta	British Columbia	Ontario	Quebec
L-Glutamic Acid 56-86-0	None	None	None	None

## Australia and Mexico

Occupational Exposure Limits for Australia and Mexico: Not determined

Components	Australia	Mexico
L-Glutamic Acid 56-86-0	None	None

## 9. PHYSICAL AND CHEMICAL PROPERTIES

**Physical state:**

Solid.

**Appearance:**

Crystals. Crystalline powder.

**Color:**

White.

**Odor:**

Odorless.

**Molecular/Formula weight:**

147.13\*\*\*

**Taste**

No information available

**Flash point (°C):**

No data available

**Lower Explosion Limit (%):**

No information available

**Upper Explosion Limit (%):**

No information available

**Autoignition Temperature (°C/°F):**

No information available

**Melting point/range(°C/°F):**

>200 °C/392°F (with sublimation)\*\*\*

**Boiling point/range(°C/°F):**

No information available

**pH:**

No information available

**Decomposition temperature(°C/°F):**

No information available

**Specific gravity:**

1.538\*\*\*

**Density (g/cm<sup>3</sup>):**

1.54 @ 20 °C\*\*\*

**Bulk density:**

No information available

**Vapor pressure @ 20°C (kPa):**

No information available

**Evaporation rate:**

No information available

**Vapor density:**

No information available

**VOC content (g/L):**

No information available

**Odor threshold (ppm):**

No information available

**Partition coefficient (n-octanol/water):**

No information available

**Miscibility:**

No information available

**Solubility:**

Solubility in Water: 8.64 g/l @ 25 °C;  
21.86 g/l @ 50 °C; 55.32 g/l @ 75 °C\*\*\*

## 10. STABILITY AND REACTIVITY

**Stability:**

Stable at normal conditions

**Conditions to avoid:**

Heat. Avoid dust formation. Incompatible materials.

**Incompatible Materials:**

Strong oxidizing agents.

**Hazardous decomposition products:**

Carbon monoxide. Carbon dioxide. Nitrogen oxides (NO<sub>x</sub>).

**Possibility of Hazardous Reactions:**

No information available

**Polymerization:**

Hazardous polymerisation does not occur

**Corrosivity:**

No information available

**Special Remarks on Corrosivity:** No information available

## 11. TOXICOLOGICAL INFORMATION

### Acute Toxicity

#### Component Information

*L-Glutamic Acid - 56-86-0*

**LD50/oral/rat** = > 30 g/kg Oral LD50 Rat

**LD50/oral/mouse** = No information available

**LD50/dermal/rat** =

No information available

**LD50/dermal/rabbit** = No information available

**LC50/inhalation/rat** = No information available

**LC50/inhalation/mouse** = No information available

**Other LD50 or LC50 information** =

No information available

#### Product Information

**LC50/inhalation/rat** No information available

**LC50/Inhalation/mouse** No information available

**LD50/dermal/rabbit** No information available

**LD50/dermal/rat** No information available

**LD50/oral/mouse** = No information available

**LD50/oral/rat** = >30000mg/kg

#### Local Effects

**Skin irritation:** May cause skin irritation in sensitive individuals.

**Eye irritation:** Contact with eyes may cause irritation. Mild eye irritation.

**Inhalation:** May cause irritation of respiratory tract.

**Ingestion:** Ingestion may cause nausea, vomiting. May cause headache.

**Sensitization:** No information available

#### Chronic Toxicity

**Chronic Toxicity** No information available

**Carcinogenic effects:** Not considered carcinogenic.

Components	NTP	IARC	OSHA HCS - Carcinogens	ACGIH - Carcinogens	Australia - Prohibited Carcinogenic Substances	Australia - Notifiable Carcinogenic Substances
L-Glutamic Acid	Not listed	Not listed	Not listed	Not listed	Not listed	Not listed

**Mutagenic Effects:** May affect genetic material

**Reproductive Effects:** No information available

**Teratogenic Effects:** No information available

**Target Organs:** No information available

## 12. ECOLOGICAL INFORMATION

## 12. ECOLOGICAL INFORMATION

### ECOTOXICITY

**Toxicity to terrestrial and aquatic plants and animals:** No information available

**Ecotoxicity effects:** No data available.

**Aquatic toxicity:** No information available

**Mobility:** No information available

**Persistence and degradability:** No information available

**Bioaccumulative potential:** No information available

## 13. DISPOSAL CONSIDERATIONS

### Waste from residues / unused products:

Waste must be disposed of in accordance with Federal, State and Local regulation.

### Contaminated packaging:

Empty containers should be taken for local recycling, recovery or waste disposal

Components	RCRA - F Series Wastes	RCRA - K Series Wastes	RCRA - P Series Wastes	RCRA - U Series Wastes
L-Glutamic Acid	None	None	None	None

## 14. TRANSPORT INFORMATION

### DOT

**UN-No:** Not regulated  
**Proper Shipping Name:** No information available  
**Hazard Class:** No information available  
**Packing Group:** None  
**Subsidiary Risk:** Not applicable  
**Marine Pollutant** No data available  
**ERG No:** No information available  
**DOT RQ (lbs):** No information available

### TDG (Canada)

**UN-No:** Not Regulated  
**Proper Shipping Name:** No information available  
**Hazard Class:** No information available  
**Packing Group:** No information available  
**Subsidiary Risk:** No information available  
**Description:** No information available

### ADR

**UN-No:** No information available  
**Proper Shipping Name:** No information available  
**Hazard Class:** No information available  
**Packing Group:** No information available  
**Subsidiary Risk:** No information available  
**Classification Code:** No information available  
**Description:** No information available  
**CEFIC Tremcard No:** No information available

### IMO / IMDG

**UN-No:** Not Regulated

**Proper Shipping Name:** No information available  
**Hazard Class:** No information available  
**Packing Group:** No information available  
**Subsidiary Risk:** No information available  
**Description:** No information available  
**IMDG Page:** No information available  
**Marine Pollutant** No information available  
**MFAG:** No information available  
**Maximum Quantity:** No information available

**RID**

**UN-No:** No information available  
**Proper Shipping Name:** No information available  
**Hazard Class:** No information available  
**Packing Group:** No information available  
**Subsidiary Risk:** No information available  
**Classification Code:** No information available  
**Description:** No information available

**ICAO**

**UN-No:** No information available  
**Proper Shipping Name:** No information available  
**Hazard Class:** No information available  
**Packing Group:** No information available  
**Subsidiary Risk:** No information available  
**Description:** No information available

**IATA**

**UN-No:** Not Regulated  
**Proper Shipping Name:** No information available  
**Hazard Class:** No information available  
**Packing Group:** No information available  
**Subsidiary Risk:** No information available  
**Description:** No information available

**15. REGULATORY INFORMATION**

**International Inventories**

Components	U.S. TSCA	Philippines (PICCS)	KOREA KECL	Japan ENCS	CHINA	Australia (AICS)	EINECS-No.
<i>L-Glutamic Acid</i>	Present	Present	Present KE-01563	Present (9)-1573	Present	Present	Present 200-293-7

**U.S. Regulations**

*L-Glutamic Acid*

**FDA - Food Additives Generally Recognized as Safe (GRAS):** 21 CFR 182.1045

**California Prop. 65: Safe Drinking Water and Toxic Enforcement Act of 1986.**

**Chemicals Known to the State of California to Cause Cancer:**

This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

**Chemicals Known to the State of California to Cause Reproductive Toxicity:**

This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

Components	Carcinogen	Developmental Toxicity	Male Reproductive Toxicity	Female Reproductive Toxicity:
<i>L-Glutamic Acid</i>	Not Listed	Not Listed	Not Listed	Not Listed

**CERCLA/SARA**

Components	CERCLA - Hazardous Substances and their Reportable Quantities	Section 302 Extremely Hazardous Substances and TPQs	Section 302 Extremely Hazardous Substances and RQs	Section 313 - Chemical Category	Section 313 - Reporting <i>de minimis</i>
L-Glutamic Acid	None	None	None	None	None

**U.S. TSCA**

Components	TSCA Section 5(a)2 - Chemicals With Significant New Use Rules (SNURS)	TSCA 8(d) -Health and Safety Reporting
L-Glutamic Acid	Not Applicable	Not Applicable

**Canada****WHMIS hazard class:**

Non-controlled

**L-Glutamic Acid**

Uncontrolled product according to WHMIS classification criteria

**Canada Controlled Products Regulation:**

This product has been classified according to the hazard criteria of the CPR (Controlled Products Regulation) and the MSDS contains all of the information required by the CPR.

**Inventory**

Components	Canada (DSL)	Canada (NDSL)
L-Glutamic Acid	Present	Not Listed

Components	CEPA Schedule I - Toxic Substances	CEPA - 2010 Greenhouse Gases Subject to Mandatory Reporting
L-Glutamic Acid	Not listed	Not listed

**EU Classification****R-phrase(s)**

not determined

**S -phrase(s)**

none

Components	Classification	Concentration Limits:	Safety Phrases
L-Glutamic Acid		No information	

The product is classified in accordance with Annex VI to Directive 67/548/EEC

**Indication of danger:**

Not dangerous

## 16. OTHER INFORMATION

The MSDS format complies with ANSI Z400.1/Z129.1-2010 standards.

**Preparation Date:** 19-Dec-2013  
**Reason for revision:** Not applicable  
**Prepared by:** Sonia Owen  
**Literature reference:** No information available

All chemicals may pose unknown hazards and should be used with caution. This Material Safety Data Sheet (MSDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this MSDS. The physical properties reported in this MSDS are obtained from the literature and do not constitute product specifications. Information contained herein does not constitute a warranty, whether expressed or implied, as to the safety, merchantability or fitness of the goods for a particular purpose. Spectrum Chemicals & Laboratory Products, Inc. assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits, arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this MSDS is based on technical data judged to be reliable, Spectrum assumes no responsibility for the completeness or accuracy of the information contained herein.

# SAFETY DATA SHEET

Preparation Date: 12/19/2013

Revision Date: 12/19/2013

Revision Number: G1

## 1. IDENTIFICATION

### Product identifier

**Product code:** GL125  
**Product Name:** L-GLUTAMIC ACID

### Other means of identification

**Synonyms:** Glutamic acid  
alpha-Aminoglutaric acid  
L-2-Aminoglutaric acid  
2-Aminopentanedioic acid  
1-Aninopropane-1,3-dicarboxylic acid  
Glusate  
Glutacid  
alpha-Glutamic acid  
Glutaminic acid  
L-Glutaminic acid  
Glutaminol  
Glutaton

**CAS #:** 56-86-0  
**RTECS #** LZ9700000  
**CI#:** Not available

### Recommended use of the chemical and restrictions on use

**Recommended use:** No information available.  
**Uses advised against** No information available

**Supplier:** Spectrum Chemicals and Laboratory Products, Inc.  
14422 South San Pedro St.  
Gardena, CA 90248  
(310) 516-8000

**Order Online At:** <https://www.spectrumchemical.com>

**Emergency telephone number** Chemtrec 1-800-424-9300  
**Contact Person:** Martin LaBenz (West Coast)  
**Contact Person:** Regina Wachenheim (East Coast)

## 2. HAZARDS IDENTIFICATION

### Classification

This chemical is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Not a dangerous substance or mixture according to the Globally Harmonized System (GHS)

## Label elements

Not classified

## Hazards not otherwise classified (HNOC)

Not Applicable

## Other hazards

Not available

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS-No.	Weight %	Trade Secret
L-Glutamic Acid 56-86-0	56-86-0	100	*

### 4. FIRST AID MEASURES

#### First aid measures

##### **General Advice:**

Poison information centres in each State capital city can provide additional assistance for scheduled poisons (13 1126)

##### **Skin Contact:**

Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. Get medical attention if irritation develops. Consult a physician if necessary.

##### **Eye Contact:**

Flush eye with water for 15 minutes. Get medical attention if irritation occurs. If symptoms persist, call a physician.

##### **Inhalation:**

Move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

##### **Ingestion:**

Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Consult a physician if necessary.

#### Most important symptoms and effects, both acute and delayed

##### **Symptoms**

May cause skin irritation in susceptible persons. May cause eye irritation.

#### Indication of any immediate medical attention and special treatment needed

##### **Notes to Physician:**

Treat symptomatically

#### Protection of first-aiders

First-Aid Providers: Avoid exposure to blood or body fluids. Wear gloves and other necessary protective clothing. Dispose of contaminated clothing and equipment as bio-hazardous waste

### 5. FIRE-FIGHTING MEASURES

#### Extinguishing Media

##### **Suitable Extinguishing Media:**

Carbon dioxide (CO<sub>2</sub>). Dry chemical. Water spray mist or foam.

##### **Unsuitable Extinguishing Media:**

No information available.

## Specific hazards arising from the chemical

**Hazardous Combustion Products:** Carbon monoxide; Carbon dioxide; Nitrogen oxides

**Specific hazards:** May be combustible at high temperatures.

## Special Protective Actions for Firefighters

**Specific Methods:** No information available.

**Special Protective Equipment for Firefighters:** As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear

## 6. ACCIDENTAL RELEASE MEASURES

### Personal precautions, protective equipment and emergency procedures

**Personal Precautions:** Ensure adequate ventilation. Use personal protective equipment. Avoid contact with skin, eyes and clothing. Avoid dust formation. Remove all sources of ignition.

**Environmental precautions** No information available.

### Methods and material for containment and cleaning up

**Methods for containment** Stop leak if you can do it without risk. Cover with plastic sheet to prevent spreading.

**Methods for cleaning up** Sweep up and shovel into suitable containers for disposal. Clean contaminated surface thoroughly.

## 7. HANDLING AND STORAGE

### Precautions for safe handling

#### **Technical Measures/Precautions:**

Provide sufficient air exchange and/or exhaust in work rooms. Avoid dust formation. Keep away from incompatible materials.

#### **Safe Handling Advice:**

Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Keep away from heat and sources of ignition. Avoid dust formation. Do not ingest. Do not breathe vapours/dust. Handle in accordance with good industrial hygiene and safety practice.

### Conditions for safe storage, including any incompatibilities

#### **Technical Measures/Storage Conditions:**

Keep container tightly closed in a dry and well-ventilated place. Store at room temperature in the original container. Store away from incompatible materials.

#### **Incompatible Materials:**

Strong oxidizing agents.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Control parameters

#### **National occupational exposure limits**

U.S Occupational Exposure Limits: Not determined

#### **United States**

Components	OSHA	NIOSH	ACGIH	AIHA WHEEL
L-Glutamic Acid - 56-86-0	None	None	None	None

## Canada

Canada Occupational Exposure Limits: Not determined

Components	Alberta	British Columbia	Ontario	Quebec
L-Glutamic Acid - 56-86-0	None	None	None	None

## Australia and Mexico

Occupational Exposure Limits for Australia and Mexico: Not determined

Components	Australia	Mexico
L-Glutamic Acid 56-86-0	None	None

## Appropriate engineering controls

### Engineering measures to reduce exposure:

Ensure adequate ventilation. Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

### Individual protection measures, such as personal protective equipment

#### Personal Protective Equipment

- Eye protection:** Safety glasses. Safety glasses with side-shields.
- Skin and body protection:** Long sleeved clothing. Chemical resistant apron. Gloves.
- Respiratory protection:** Effective dust mask. Wear respirator with dust filter..
- Hygiene measures:** Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product. When using, do not eat, drink or smoke.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Physical state:</b> Solid.	<b>Appearance:</b> Crystals. Crystalline powder.	<b>Color:</b> White.
<b>Odor:</b> Odorless.	<b>Taste</b> No information available	<b>Formula:</b> C5-H9-N-O4
<b>Molecular/Formula weight:</b> 147.13	<b>Flash point (°C):</b> Not applicable	<b>Flashpoint (°C/°F):</b> Not applicable
<b>Flash Point Tested according to:</b> Not applicable	<b>Lower Explosion Limit (%):</b> No information available	<b>Upper Explosion Limit (%):</b> No information available
<b>Autoignition Temperature (°C/°F):</b> No information available	<b>pH:</b> No information available	<b>Melting point/range(°C/°F):</b> >200 °C/392°F (with sublimation)
<b>Boiling point/range(°C/°F):</b> No information available	<b>Decomposition temperature(°C/°F):</b> No information available	<b>Specific gravity:</b> 1.538
<b>Density (g/cm3):</b> 1.54 @ 20 °C	<b>Bulk density:</b> No information available	<b>Vapor pressure @ 20°C (kPa):</b> No information available
<b>Evaporation rate:</b> No information available	<b>Vapor density:</b> No information available	<b>VOC content (g/L):</b> No information available
<b>Odor threshold (ppm):</b> No information available	<b>Partition coefficient (n-octanol/water):</b> No information available	<b>Viscosity:</b> No information available
<b>Miscibility:</b> No information available	<b>Solubility:</b> Solubility in Water: 8.64 g/l @ 25 °C; 21.86 g/l @ 50 °C; 55.32 g/l @ 75 °C	

## 10. STABILITY AND REACTIVITY

### Reactivity

No information available

### Chemical stability

**Stability:** Stable at normal conditions

**Possibility of Hazardous Reactions:** Hazardous polymerization does not occur

**Conditions to avoid:** Heat. Avoid dust formation. Incompatible materials.

**Incompatible Materials:** Strong oxidizing agents.

**Hazardous decomposition products:** Carbon monoxide. Carbon dioxide. Nitrogen oxides (NOx).

### Other Information

**Corrosivity:** No information available

**Special Remarks on Corrosivity:** No information available

## 11. TOXICOLOGICAL INFORMATION

### Information on likely routes of exposure

**Principal Routes of Exposure:**  
Ingestion. Inhalation.

**Acute Toxicity**

**Component Information**

*L-Glutamic Acid - 56-86-0*

**LD50/oral/rat** = > 30 g/kg Oral LD50 Rat  
**LD50/oral/mouse** = No information available  
**LD50/dermal/rabbit** = No information available  
**LD50/dermal/rat** = No information available  
**LC50/inhalation/rat** = No information available  
**LC50/inhalation/mouse** = No information available  
**Other LD50 or LC50 information** =  
No information available

**Product Information**

**LD50/oral/rat** =  
**VALUE- Acute Tox Oral** = >30000mg/kg

**LD50/oral/mouse** =  
**Value - Acute Tox Oral** = No information available

**LD50/dermal/rabbit**  
**VALUE-Acute Tox Dermal** = No information available

**LD50/dermal/rat**  
**VALUE -Acute Tox Dermal** = No information available

**LC50/inhalation/rat**  
**VALUE-Vapor** = No information available  
**VALUE-Gas** = No information available  
**VALUE-Dust/Mist** = No information available

**LC50/Inhalation/mouse**  
**VALUE-Vapor** = No information available  
**VALUE - Gas** = No information available  
**VALUE - Dust/Mist** = No information available

**Symptoms**

<b>Skin Contact:</b>	May cause skin irritation in sensitive individuals.
<b>Eye Contact:</b>	Contact with eyes may cause irritation. Mild eye irritation.
<b>Inhalation</b>	May cause irritation of respiratory tract.
<b>Ingestion</b>	Ingestion may cause nausea, vomiting. May cause headache.
<b>Aspiration hazard</b>	No information available

**Delayed and immediate effects as well as chronic effects from short and long-term exposure**

<b>Chronic Toxicity</b>	No information available
<b>Sensitization:</b>	No information available
<b>Mutagenic Effects:</b>	May affect genetic material

**Carcinogenic effects:** Not considered carcinogenic.

Components	ACGIH - Carcinogens	IARC	NTP	OSHA HCS - Carcinogens	Australia - Prohibited Carcinogenic Substances	Australia - Notifiable Carcinogenic Substances
L-Glutamic Acid	Not listed	Not listed	Not listed	Not listed	Not listed	Not listed

**Reproductive toxicity** No data is available

**Reproductive Effects:** No information available  
**Developmental Effects:** No information available  
**Teratogenic Effects:** No information available

**Specific Target Organ Toxicity**

**STOT - single exposure** No information available  
**STOT - repeated exposure** No information available  
**Target Organs:** No information available

**12. ECOLOGICAL INFORMATION**

**Ecotoxicity**

**Ecotoxicity effects:** No data available.  
**Persistence and degradability:** No information available  
**Bioaccumulative potential:** No information available  
**Mobility:** No information available

**13. DISPOSAL CONSIDERATIONS**

**Disposal Methods**

**Waste from residues / unused products:**  
Waste must be disposed of in accordance with Federal, State and Local regulation.

**Contaminated packaging:**  
Empty containers should be taken for local recycling, recovery or waste disposal

Components	RCRA - F Series Wastes	RCRA - K Series Wastes	RCRA - P Series Wastes	RCRA - U Series Wastes
L-Glutamic Acid	None	None	None	None

**14. TRANSPORT INFORMATION**

**DOT**  
**UN-No:** Not regulated  
**Proper Shipping Name:** No information available  
**Hazard Class:** No information available

## 14. TRANSPORT INFORMATION

**Subsidiary Risk:** Not applicable  
**Packing Group:** None  
**Marine Pollutant:** No data available  
**ERG No:** No information available  
**DOT RQ (lbs):** No information available

### TDG (Canada)

**UN-No:** Not Regulated  
**Proper Shipping Name:** No information available  
**Hazard Class:** No information available  
**Subsidiary Risk:** No information available  
**Packing Group:** No information available  
**Description:** No information available

### ADR

**UN-No:** Not Regulated  
**Proper Shipping Name:** No information available  
**Hazard Class:** No information available  
**Packing Group:** No information available  
**Subsidiary Risk:** No information available  
**Classification Code:** No information available  
**Description:** No information available  
**CEFIC Tremcard No:** No information available

### IMO / IMDG

**UN-No:** Not Regulated  
**Proper Shipping Name:** No information available  
**Hazard Class:** No information available  
**Subsidiary Risk:** No information available  
**Packing Group:** No information available  
**Description:** No information available  
**IMDG Page:** No information available  
**Marine Pollutant:** No information available  
**MFAG:** No information available  
**Maximum Quantity:** No information available

### RID

**UN-No:** Not Regulated  
**Proper Shipping Name:** No information available  
**Hazard Class:** No information available  
**Subsidiary Risk:** No information available  
**Packing Group:** No information available  
**Classification Code:** No information available  
**Description:** No information available

### ICAO

**UN-No:** Not Regulated  
**Proper Shipping Name:** No information available  
**Hazard Class:** No information available  
**Subsidiary Risk:** No information available  
**Packing Group:** No information available  
**Description:** No information available

### IATA

**UN-No:** Not Regulated  
**Proper Shipping Name:** No information available  
**Hazard Class:** No information available

**14. TRANSPORT INFORMATION**

**Subsidiary Risk:** No information available  
**Packing Group:** No information available  
**Description:** No information available

**15. REGULATORY INFORMATION****International Inventories**

Components	U.S. TSCA	Philippines (PICCS)	KOREA KECL	Japan ENCS	CHINA	Australia (AICS)	EINECS-No.
<i>L-Glutamic Acid</i>	Present	Present	Present KE-01563	Present (9)-1573	Present	Present	Present 200-293-7

**U.S. Regulations***L-Glutamic Acid*

**FDA - Food Additives Generally Recognized as Safe (GRAS):** 21 CFR 182.1045

**California Prop. 65: Safe Drinking Water and Toxic Enforcement Act of 1986.****Chemicals Known to the State of California to Cause Cancer:**

This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

**Chemicals Known to the State of California to Cause Reproductive Toxicity:**

This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

Components	Carcinogen	Developmental Toxicity	Male Reproductive Toxicity	Female Reproductive Toxicity:
<i>L-Glutamic Acid</i>	Not Listed	Not Listed	Not Listed	Not Listed

**CERCLA/SARA**

Components	CERCLA - Hazardous Substances and their Reportable Quantities	Section 302 Extremely Hazardous Substances and TPQs	Section 302 Extremely Hazardous Substances and RQs	Section 313 - Chemical Category	Section 313 - Reporting <i>de minimis</i>
<i>L-Glutamic Acid</i>	None	None	None	None	None

**U.S. TSCA**

Components	TSCA Section 5(a)2 - Chemicals With Significant New Use Rules (SNURS)	TSCA 8(d) -Health and Safety Reporting
<i>L-Glutamic Acid</i>	Not Applicable	Not Applicable

**Canada****WHMIS hazard class:**

Non-controlled

**L-Glutamic Acid**

Uncontrolled product according to WHMIS classification criteria

**Canada Controlled Products Regulation:**

This product has been classified according to the hazard criteria of the CPR (Controlled Products Regulation) and the MSDS contains all of the information required by the CPR.

**Inventory**

Components	Canada (DSL)	Canada (NDSL)
<i>L-Glutamic Acid</i>	Present	Not Listed

Components	CEPA Schedule I - Toxic Substances	CEPA - 2010 Greenhouse Gases Subject to Mandatory Reporting
L-Glutamic Acid	Not listed	Not listed

**EU Classification**

**R-phrase(s)**

not determined

**S -phrase(s)**

none

Components	Classification	Concentration Limits:	Safety Phrases
L-Glutamic Acid		No information	

The product is classified in accordance with Annex VI to Directive 67/548/EEC

**Indication of danger:**

Not dangerous

**16. OTHER INFORMATION**

**16. OTHER INFORMATION**

NFPA	HMIS	Personal Protective Equipment
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Health Hazard	1
Fire Hazard	1
Reactivity	0



See Section 8.

Preparation Date: 12/19/2013  
Revision Date: 12/19/2013  
Prepared by: Sonia Owen

**Disclaimer:**

All chemicals may pose unknown hazards and should be used with caution. This Safety Data Sheet (SDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this SDS. The physical properties reported in this SDS are obtained from the literature and do not constitute product specifications. Information contained herein does not constitute a warranty, whether expressed or implied, as to the safety, merchantability or fitness of the goods for a particular purpose. Spectrum Chemicals & Laboratory Products, Inc. assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits, arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this SDS is based on technical data judged to be reliable, Spectrum assumes no responsibility for the completeness or accuracy of the information contained herein.

**End of Material Safety Data Sheet**