



# CANONICAL AMINO ACID MIX

## Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830 and according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Date of issue: 27/12/2018

Revision date:

Version: 1.0

MSK-CAA

## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### 1.1. Product identifier

Product form : Substance  
Substance name : CANONICAL AMINO ACID MIX  
Product code : MSK-CAA

### 1.2. Relevant identified uses of the substance or mixture and uses advised against

#### 1.2.1. Relevant identified uses

Main use category : Professional use  
Industrial/Professional use spec : For professional use only

#### 1.2.2. Uses advised against

No additional information available

### 1.3. Details of the supplier of the safety data sheet

Cambridge Isotope Laboratories, Inc.  
50 Frontage Road  
Andover, MA 01810  
USA

USA: 1-800-322-1174 Int: 1-978-749-8000  
[cilsales@isotope.com](mailto:cilsales@isotope.com) [www.isotope.com](http://www.isotope.com)

### Emergency telephone number

Emergency numbers:

Chemtrec: 1-800-424-9300 (24 hours)  
International: 1-703-741-5970 (24 hours)

## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

#### Classification according to Regulation (EC) No. 1272/2008 [CLP]

Skin Irrit. 2 H315  
Eye Irrit. 2 H319  
Skin Sens. 1 H317

Full text of hazard classes and H-statements : see section 16

#### Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]

Xi; R36/38  
R43

Full text of R-phrases: see section 16

#### GHS-US classification

Skin Irrit. 2 H315  
Eye Irrit. 2 H319  
Skin Sens. 1 H317

Full text of H statements : see section 16

#### Adverse physicochemical, human health and environmental effects

No additional information available

### 2.2. Label elements

#### Labeling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP) :



GHS07

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Signal word (CLP)	: Warning
Hazard statements (CLP)	: H315 - Causes skin irritation H317 - May cause an allergic skin reaction H319 - Causes serious eye irritation
Precautionary statements (CLP)	: P261 - Avoid breathing dust/fume/gas/mist/vapors/spray. P264 - Wash hands, forearms and face thoroughly after handling. P272 - Contaminated work clothing should not be allowed out of the workplace. P280 - Wear protective gloves/protective clothing/eye protection/face protection. P302+P352 - IF ON SKIN: Wash with plenty of soap and water. P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P332+P313 - If skin irritation occurs: Get medical advice/attention. P333+P313 - If skin irritation or rash occurs: Get medical advice/attention.

### GHS-US labeling

Hazard pictograms (GHS-US)



GHS07

Signal word (GHS-US)	: Warning
Hazard statements (GHS-US)	: H315 - Causes skin irritation H317 - May cause an allergic skin reaction H319 - Causes serious eye irritation
Precautionary statements (GHS-US)	: P261 - Avoid breathing dust/fume/gas/mist/vapors/spray. P264 - Wash hands, forearms and face thoroughly after handling. P272 - Contaminated work clothing must not be allowed out of the workplace P280 - Wear protective gloves/protective clothing/eye protection/face protection. P302+P352 - If on skin: Wash with plenty of water P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing P321 - Specific treatment (see Hazardous component(s) for labeling on this label) P332+P313 - If skin irritation occurs: Get medical advice/attention. P333+P313 - If skin irritation or rash occurs: Get medical advice/attention. P337+P313 - If eye irritation persists: Get medical advice/attention. P362+P364 - Take off contaminated clothing and wash it before reuse. P363 - Wash contaminated clothing before reuse. P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation

### 2.3. Other hazards

No additional information available

## SECTION 3: Composition/Information on ingredients

### 3.1. Substances

Name : CANONICAL AMINO ACID MIX

Name	Product identifier	%	Classification according to Directive 67/548/EEC
L-LYSINE:2HCL (13C6, 99%; 15N2, 99%)	(CAS-No.) 657-26-1 (Unlabeled) (EC-No.) 211-518-3 (Unlabeled)	7.43	R43
L-ARGININE:HCL (13C6, 99%; 15N4, 99%)	(CAS-No.) 202468-25-5 (EC-No.) 214-275-1 (Unlabeled)	7.22	Xi; R36/38
L-HISTIDINE:HCL:H2O (<5% D) (13C6, 97-99%; 15N3, 97-99%)	(CAS-No.) 202468-43-7	7.16	Not classified
L-TRYPTOPHAN (13C11, 99%; 15N2, 99%)	(CAS-No.) 202406-50-6 (EC-No.) 200-795-6 (Unlabeled)	7.11	Not classified
L-TYROSINE (13C9, 99%; 15N, 99%)	(CAS-No.) 202407-26-9 (EC-No.) 200-460-4 (Unlabeled)	6.26	Xi; R36/37/38
L-PHENYLALANINE (13C9, 99%; 15N, 99%)	(CAS-No.) 63-91-2 (Unlabeled) (EC-No.) 200-568-1 (Unlabeled)	5.73	Not classified
L-ASPARAGINE:H2O (13C4, 99%; 15N2, 99%)	(CAS-No.) 202406-87-9 (EC-No.) 200-735-9 (Unlabeled)	5.11	Not classified
L-METHIONINE (13C5, 99%; 15N, 99%)	(CAS-No.) 63-68-3 (Unlabeled) (EC-No.) 200-562-9 (Unlabeled)	5.08	Not classified
L-GLUTAMIC ACID (13C5, 99%; 15N, 99%)	(CAS-No.) 56-86-0 (Unlabeled) (EC-No.) 200-293-7 (Unlabeled)	5.01	Not classified

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Name	Product identifier	%	Classification according to Directive 67/548/EEC
L-GLUTAMINE (13C5, 99%; 15N2, 99%)	(CAS-No.) 56-85-9 (Unlabeled) (EC-No.) 200-292-1 (Unlabeled)	5.01	Not classified
L-ASPARTIC ACID (13C4, 99%; 15N, 99%)	(CAS-No.) 202468-27-7 (EC-No.) 200-291-6 (Unlabeled)	4.52	Xn; R21/22 Xi; R36
L-ISOLEUCINE (13C6, 99%; 15N, 99%)	(CAS-No.) 73-32-5 (Unlabeled) (EC-No.) 200-798-2 (Unlabeled)	4.52	Not classified
L-LEUCINE (13C6, 99%; 15N, 99%)	(CAS-No.) 202406-52-8 (EC-No.) 200-522-0 (Unlabeled)	4.52	Not classified
L-CYSTINE (13C6, 99%; 15N2, 99%)	(CAS-No.) 1252803-65-8 (EC-No.) 200-296-3 (Unlabeled) (EC Index-No.)	4.06	Not classified
L-THREONINE (13C4, 97-99%; 15N, 97-99%)	(CAS-No.) 72-19-5 (Unlabeled) (EC-No.) 200-774-1 (Unlabeled)	4.06	Not classified
L-VALINE (13C5, 99%; 15N, 99%)	(CAS-No.) 72-18-4 (Unlabeled) (EC-No.) 200-773-6 (Unlabeled)	4.03	Not classified
L-PROLINE (13C5, 99%; 15N, 99%)	(CAS-No.) 147-85-3 (Unlabeled) (EC-No.) 205-702-2 (Unlabeled)	3.97	Not classified
L-SERINE (13C3, 99%; 15N, 99%)	(CAS-No.) 202407-34-9 (EC-No.) 200-274-3 (Unlabeled)	3.57	Not classified
L-ALANINE (13C3, 99%; 15N, 99%)	(CAS-No.) 312623-85-1 (EC-No.) 200-273-8 (Unlabeled) (EC Index-No.)	3.05	Not classified
GLYCINE (13C2,99%;15N,99%) MICROBIOLOGICAL/PYROGEN TESTED	(CAS-No.) 211057-02-2 (EC-No.) 200-272-2 (Unlabeled)	2.56	Not classified

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
L-LYSINE:2HCL (13C6, 99%; 15N2, 99%)	(CAS-No.) 657-26-1 (Unlabeled) (EC-No.) 211-518-3 (Unlabeled)	7.43	Skin Sens. 1, H317
L-ARGININE:HCL (13C6, 99%; 15N4, 99%)	(CAS-No.) 202468-25-5 (EC-No.) 214-275-1 (Unlabeled)	7.22	Skin Irrit. 2, H315 Eye Irrit. 2, H319
L-HISTIDINE:HCL:H2O (<5% D) (13C6, 97-99%; 15N3, 97-99%)	(CAS-No.) 202468-43-7	7.16	Not classified
L-TRYPTOPHAN (13C11, 99%; 15N2, 99%)	(CAS-No.) 202406-50-6 (EC-No.) 200-795-6 (Unlabeled)	7.11	Not classified
L-TYROSINE (13C9, 99%; 15N, 99%)	(CAS-No.) 202407-26-9 (EC-No.) 200-460-4 (Unlabeled)	6.26	Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3, H335
L-PHENYLALANINE (13C9, 99%; 15N, 99%)	(CAS-No.) 63-91-2 (Unlabeled) (EC-No.) 200-568-1 (Unlabeled)	5.73	Not classified
L-ASPARAGINE:H2O (13C4, 99%; 15N2, 99%)	(CAS-No.) 202406-87-9 (EC-No.) 200-735-9 (Unlabeled)	5.11	Not classified
L-METHIONINE (13C5, 99%; 15N, 99%)	(CAS-No.) 63-68-3 (Unlabeled) (EC-No.) 200-562-9 (Unlabeled)	5.08	Not classified
L-GLUTAMIC ACID (13C5, 99%; 15N, 99%)	(CAS-No.) 56-86-0 (Unlabeled) (EC-No.) 200-293-7 (Unlabeled)	5.01	Not classified
L-GLUTAMINE (13C5, 99%; 15N2, 99%)	(CAS-No.) 56-85-9 (Unlabeled) (EC-No.) 200-292-1 (Unlabeled)	5.01	Not classified
L-ASPARTIC ACID (13C4, 99%; 15N, 99%)	(CAS-No.) 202468-27-7 (EC-No.) 200-291-6 (Unlabeled)	4.52	Eye Irrit. 2, H319
L-ISOLEUCINE (13C6, 99%; 15N, 99%)	(CAS-No.) 73-32-5 (Unlabeled) (EC-No.) 200-798-2 (Unlabeled)	4.52	Not classified
L-LEUCINE (13C6, 99%; 15N, 99%)	(CAS-No.) 202406-52-8 (EC-No.) 200-522-0 (Unlabeled)	4.52	Not classified
L-CYSTINE (13C6, 99%; 15N2, 99%)	(CAS-No.) 1252803-65-8 (EC-No.) 200-296-3 (Unlabeled) (EC Index-No.)	4.06	Not classified
L-THREONINE (13C4, 97-99%; 15N, 97-99%)	(CAS-No.) 72-19-5 (Unlabeled) (EC-No.) 200-774-1 (Unlabeled)	4.06	Not classified
L-VALINE (13C5, 99%; 15N, 99%)	(CAS-No.) 72-18-4 (Unlabeled) (EC-No.) 200-773-6 (Unlabeled)	4.03	Not classified
L-PROLINE (13C5, 99%; 15N, 99%)	(CAS-No.) 147-85-3 (Unlabeled) (EC-No.) 205-702-2 (Unlabeled)	3.97	Not classified
L-SERINE (13C3, 99%; 15N, 99%)	(CAS-No.) 202407-34-9 (EC-No.) 200-274-3 (Unlabeled)	3.57	Not classified
L-ALANINE (13C3, 99%; 15N, 99%)	(CAS-No.) 312623-85-1 (EC-No.) 200-273-8 (Unlabeled) (EC Index-No.)	3.05	Not classified
GLYCINE (13C2,99%;15N,99%) MICROBIOLOGICAL/PYROGEN TESTED	(CAS-No.) 211057-02-2 (EC-No.) 200-272-2 (Unlabeled)	2.56	Not classified

Full text of R- and H- phrases: see section 16

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Name	Product identifier	%	GHS-US classification
L-LYSINE:2HCL (13C6, 99%; 15N2, 99%)	(CAS-No.) 657-26-1 (Unlabeled)	7.43	Skin Sens. 1B, H317
L-ARGININE:HCL (13C6, 99%; 15N4, 99%)	(CAS-No.) 202468-25-5	7.22	Skin Irrit. 2, H315 Eye Irrit. 2A, H319
L-HISTIDINE:HCL:H2O (<5% D) (13C6, 97-99%; 15N3, 97-99%)	(CAS-No.) 202468-43-7	7.16	Not classified
L-TRYPTOPHAN (13C11, 99%; 15N2, 99%)	(CAS-No.) 202406-50-6	7.11	Not classified
L-TYROSINE (13C9, 99%; 15N, 99%)	(CAS-No.) 202407-26-9	6.26	Skin Irrit. 2, H315 Eye Irrit. 2A, H319 STOT SE 3, H335
L-PHENYLALANINE (13C9, 99%; 15N, 99%)	(CAS-No.) 63-91-2 (Unlabeled)	5.73	Not classified
L-ASPARAGINE:H2O (13C4, 99%; 15N2, 99%)	(CAS-No.) 202406-87-9	5.11	Not classified
L-METHIONINE (13C5, 99%; 15N, 99%)	(CAS-No.) 63-68-3 (Unlabeled)	5.08	Not classified
L-GLUTAMIC ACID (13C5, 99%; 15N, 99%)	(CAS-No.) 56-86-0 (Unlabeled)	5.01	Not classified
L-GLUTAMINE (13C5, 99%; 15N2, 99%)	(CAS-No.) 56-85-9 (Unlabeled)	5.01	Not classified
L-ASPARTIC ACID (13C4, 99%; 15N, 99%)	(CAS-No.) 202468-27-7	4.52	Eye Irrit. 2A, H319
L-ISOLEUCINE (13C6, 99%; 15N, 99%)	(CAS-No.) 73-32-5 (Unlabeled)	4.52	Not classified
L-LEUCINE (13C6, 99%; 15N, 99%)	(CAS-No.) 202406-52-8	4.52	Not classified
L-CYSTINE (13C6, 99%; 15N2, 99%)	(CAS-No.) 1252803-65-8	4.06	Not classified
L-THREONINE (13C4, 97-99%; 15N, 97-99%)	(CAS-No.) 72-19-5 (Unlabeled)	4.06	Not classified
L-VALINE (13C5, 99%; 15N, 99%)	(CAS-No.) 72-18-4 (Unlabeled)	4.03	Not classified
L-PROLINE (13C5, 99%; 15N, 99%)	(CAS-No.) 147-85-3 (Unlabeled)	3.97	Not classified
L-SERINE (13C3, 99%; 15N, 99%)	(CAS-No.) 202407-34-9	3.57	Not classified
L-ALANINE (13C3, 99%; 15N, 99%)	(CAS-No.) 312623-85-1	3.05	Not classified
GLYCINE (13C2,99%;15N,99%) MICROBIOLOGICAL/PYROGEN TESTED	(CAS-No.) 211057-02-2	2.56	Not classified

Full text of H-phrases: see section 16

### 3.2. Mixtures

Not applicable

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

First-aid measures general	: If you feel unwell, seek medical advice (show the label where possible). Evacuate danger area.
First-aid measures after inhalation	: When symptoms occur: go into open air and ventilate suspected area. If not breathing give artificial respiration. Get medical advice/attention.
First-aid measures after skin contact	: Wash with plenty of soap and water. and soap. Get immediate medical advice/attention.
First-aid measures after eye contact	: Rinse cautiously with water for several minutes.
First-aid measures after ingestion	: Never give anything by mouth to an unconscious person. Rinse mouth out with water. Get medical advice/attention.

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

Symptoms/effects after inhalation	: May be harmful if inhaled. May cause respiratory irritation.
Symptoms/effects after skin contact	: Causes skin irritation. May cause an allergic skin reaction.
Symptoms/effects after eye contact	: Causes serious eye irritation.
Symptoms/effects after ingestion	: May be harmful if swallowed.

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

No additional information available

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

Suitable extinguishing media : Water spray. Dry chemical powder, alcohol-resistant foam, carbon dioxide (CO2).

### 5.2. Special hazards arising from the substance or mixture

No additional information available

### 5.3. Advice for firefighters

Firefighting instructions	: Fight fire with normal precautions from a reasonable distance. Wear a self contained breathing apparatus. Do not enter fire area without proper protective equipment, including respiratory protection.
Protection during firefighting	: Do not enter fire area without proper protective equipment, including respiratory protection. Wear recommended personal protective equipment.

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### SECTION 6: Accidental release measures

#### 6.1. Personal precautions, protective equipment and emergency procedures

##### 6.1.1. For non-emergency personnel

Emergency procedures : Avoid breathing vapors, mist, gas. Avoid dust formation.

##### 6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

#### 6.2. Environmental precautions

Prevent entry to sewers and public waters. Do not allow to enter drains or water courses. Avoid release to the environment.

#### 6.3. Methods and material for containment and cleaning up

For containment : Take up mechanically (sweeping, shoveling) and collect in suitable container for disposal.

Methods for cleaning up : This material and its container must be disposed of in a safe way, and as per local legislation.

#### 6.4. Reference to other sections

For further information refer to section 13.

### SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

Precautions for safe handling : Provide adequate ventilation to minimize dust and/or vapor concentrations.

Hygiene measures : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Handle in accordance with good industrial hygiene and safety practice.

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

Technical measures : Store in a well-ventilated place. Keep container tightly closed.

Storage conditions : Store refrigerated (-5 °C to 5 °C). Protect from light.

#### 7.3. Specific end use(s)

No additional information available

### SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

No additional information available

#### 8.2. Exposure controls

Appropriate engineering controls : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

Personal protective equipment : Gloves. Protective clothing. Protective goggles. Self-contained breathing apparatus.



Materials for protective clothing : Wear suitable protective clothing and gloves.

Hand protection : Wear suitable protective clothing and gloves.

Eye protection : Wear eye protection. Chemical goggles or face shield with safety glasses.

Skin and body protection : Wear suitable protective clothing, gloves and eye/face protection.

Respiratory protection : In case of inadequate ventilation wear respiratory protection. Approved supplied air respirator.

Environmental exposure controls : Avoid release to the environment.

### SECTION 9: Physical and chemical properties

#### 9.1. Information on basic physical and chemical properties

Physical state : Solid

Appearance : Solid

Color : White

Odor : No data available

Odor threshold : No data available

pH : No data available

Relative evaporation rate (butyl acetate=1) : No data available

Melting point : No data available

Freezing point : No data available

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Boiling point	: No data available
Flash point	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: No data available
Vapor pressure	: No data available
Relative vapor density at 20 °C	: No data available
Relative density	: No data available
Solubility	: No data available
Log Pow	: No data available
Log Kow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available
Explosion limits	: No data available

### 9.2. Other information

No additional information available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

No additional information available

### 10.2. Chemical stability

See storage and expiration date on CoA.

### 10.3. Possibility of hazardous reactions

No additional information available

### 10.4. Conditions to avoid

No additional information available

### 10.5. Incompatible materials

Strong oxidizing agents.

### 10.6. Hazardous decomposition products

Carbon oxides (CO, CO<sub>2</sub>).

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity : Not classified

<b>L-ALANINE (13C3, 99%; 15N, 99%) (312623-85-1)</b>	
LD50 oral rat	> 5110 mg/kg male and female
<b>L-ARGININE:HCL (13C6, 99%; 15N4, 99%) (202468-25-5)</b>	
LD50 oral rat	12400 mg/kg
ATE CLP (oral)	12000.000 mg/kg body weight
<b>L-ASPARTIC ACID (13C4, 99%; 15N, 99%) (202468-27-7)</b>	
LD50 oral rat	5000 mg/kg
LD50 dermal rabbit	5000 mg/kg
ATE CLP (oral)	5000.000 mg/kg body weight
ATE CLP (dermal)	5000.000 mg/kg body weight
<b>L-GLUTAMIC ACID (13C5, 99%; 15N, 99%) (56-86-0 (Unlabeled))</b>	
LD50 oral rat	> 5110 mg/kg male and female
LD50 dermal rat	> 2000 mg/kg male and female
<b>L-HISTIDINE:HCL:H2O (&lt;5% D) (13C6, 97-99%; 15N3, 97-99%) (202468-43-7)</b>	
Additional information	LD50 Intraperitoneal - Mouse - > 1,677 mg/kg
<b>L-LEUCINE (13C6, 99%; 15N, 99%) (202406-52-8)</b>	
LD50 oral rat	> 16000 mg/kg male and female
LD50 Intraperitoneal - Rat - 5,379 mg/kg	Lungs, Thorax, or Respiration: Dyspnea. Nutritional and Gross Metabolic: Changes in: Body temperature decrease.
Remarks	

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<b>L-METHIONINE (13C5, 99%; 15N, 99%) (63-68-3 (Unlabeled))</b>	
LD50 oral rat	36000 mg/kg Remarks: Behavioral: Change in motor activity (specific assay). Skin and Appendages: Allergic (Multiple organ involvement) Anaphylaxis.
<b>L-SERINE (13C3, 99%; 15N, 99%) (202407-34-9)</b>	
LD50 oral rat	14000 mg/kg male and female
<b>L-THREONINE (13C4, 97-99%; 15N, 97-99%) (72-19-5 (Unlabeled))</b>	
LD50 Intraperitoneal - Rat - 3,098 mg/kg Remarks	Behavioral: Muscle contraction or spasticity. Lungs, Torax, or Respiration: Dyspnea. Nutritional and Gross Metabolic: Changes in: Body temperature decrease.
<b>L-TYROSINE (13C9, 99%; 15N, 99%) (202407-26-9)</b>	
Additional information	LD50 Intraperitoneal - mouse - > 1,450 mg/kg
<b>L-VALINE (13C5, 99%; 15N, 99%) (72-18-4 (Unlabeled))</b>	
LD50 oral rat	> 2000 mg/kg female
LD50 dermal rat	5390 mg/kg
LC50 inhalation rat (mg/l)	> 5260 mg/m <sup>3</sup> (OECD Test Guideline 403)
<b>L-GLUTAMINE (13C5, 99%; 15N2, 99%) (56-85-9 (Unlabeled))</b>	
LD50 oral rat	7500 mg/kg
ATE CLP (oral)	7500.000 mg/kg body weight
<b>L-TRYPTOPHAN (13C11, 99%; 15N2, 99%) (202406-50-6)</b>	
LD50 oral rat	> 16000 mg/kg Remarks: Sense Organs and Special Senses (Nose, Eye, Ear, and Taste):Eye:Ptosis. Behavioral:Coma. Nutritional and Gross Metabolic:Changes in:Body temperature decrease.

<b>GLYCINE (13C2,99%;15N,99%) MICROBIOLOGICAL/PYROGEN TESTED (211057-02-2)</b>	
LD50 oral rat	7930 mg/kg
ATE CLP (oral)	7930.000 mg/kg body weight

Skin corrosion/irritation	: Causes skin irritation.
Serious eye damage/irritation	: Causes serious eye irritation.
Respiratory or skin sensitization	: May cause an allergic skin reaction.
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
Specific target organ toxicity – single exposure	: Not classified
Specific target organ toxicity – repeated exposure	: Not classified

<b>L-LEUCINE (13C6, 99%; 15N, 99%) (202406-52-8)</b>	
NOAEL (oral,rat,90 days)	3840 mg/kg bodyweight/day female

<b>L-SERINE (13C3, 99%; 15N, 99%) (202407-34-9)</b>	
NOAEL (oral,rat,90 days)	3000 mg/kg bodyweight/day male and female - OECD Test Guideline 408

Aspiration hazard	: Not classified
Potential Adverse human health effects and symptoms	: This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.
Symptoms/effects after inhalation	: May be harmful if inhaled. May cause respiratory irritation.
Symptoms/effects after skin contact	: Causes skin irritation. May cause an allergic skin reaction.
Symptoms/effects after eye contact	: Causes serious eye irritation.
Symptoms/effects after ingestion	: May be harmful if swallowed.

## SECTION 12: Ecological information

### 12.1. Toxicity

Ecology - general	: The product is not considered harmful to aquatic organisms or to cause long-term adverse effects in the environment.
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<b>L-ALANINE (13C3, 99%; 15N, 99%) (312623-85-1)</b>	
EC50 Daphnia 1	> 100 g/l static test - Daphnia magna (Water flea) - 48 h (OECD Test Guideline 202)

<b>L-GLUTAMIC ACID (13C5, 99%; 15N, 99%) (56-86-0 (Unlabeled))</b>	
LC50 fish 1	> 100 mg/l Cyprinus carpio (Carp) - 96 h - static test
EC50 Daphnia 1	> 100 g/l Daphnia magna (Water flea) - 48 h
EC50 other aquatic organisms 1	> 31 mg/l Pseudokirchneriella subcapitata (green algae) - 72 h - static test

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<b>L-SERINE (13C3, 99%; 15N, 99%) (202407-34-9)</b>	
EC50 Daphnia 1	> 83 mg/l Daphnia magna (Water flea) - 48 h (OECD Test Guideline 202)
ErC50 (algae)	> 83 mg/l Daphnia magna (Water flea) - 48 h
NOEC chronic algae	1000 mg/l static test NOEC - Pseudokirchneriella subcapitata (green algae) - 72 h (OECD Test Guideline 201)

<b>L-VALINE (13C5, 99%; 15N, 99%) (72-18-4 (Unlabeled))</b>	
LC50 fish 1	> 10 g/l Danio rerio (Zebra fish) - 96 h
EC50 Daphnia 1	> 10 g/l Daphnia magna (Water flea) - Immobilization - 24 h

### 12.2. Persistence and degradability

<b>L-GLUTAMIC ACID (13C5, 99%; 15N, 99%) (56-86-0 (Unlabeled))</b>	
Persistence and degradability	Aerobic - exposure time: 28 d.
Biodegradation	97 % Readily biodegradable

<b>L-SERINE (13C3, 99%; 15N, 99%) (202407-34-9)</b>	
Persistence and degradability	Aerobic - exposure time: 28 d.
Biodegradation	81 % Readily biodegradable (OECD Test Guideline 301)

<b>L-VALINE (13C5, 99%; 15N, 99%) (72-18-4 (Unlabeled))</b>	
Persistence and degradability	Biodegradability aerobic - Exposure time 28 d.
Biodegradation	82 % Readily biodegradable

### 12.3. Bioaccumulative potential

<b>L-ALANINE (13C3, 99%; 15N, 99%) (312623-85-1)</b>	
Log Pow	-2.74 at 20 °C (68 °F)

<b>L-GLUTAMIC ACID (13C5, 99%; 15N, 99%) (56-86-0 (Unlabeled))</b>	
Log Pow	< -4 at 20 °C (68 °F)

<b>L-ISOLEUCINE (13C6, 99%; 15N, 99%) (73-32-5 (Unlabeled))</b>	
Log Pow	-1.58

<b>L-PHENYLALANINE (13C9, 99%; 15N, 99%) (63-91-2 (Unlabeled))</b>	
Bioaccumulative potential	Not available.

<b>L-SERINE (13C3, 99%; 15N, 99%) (202407-34-9)</b>	
Log Pow	-3.069 at 20 °C (68 °F)

<b>L-TYROSINE (13C9, 99%; 15N, 99%) (202407-26-9)</b>	
Log Pow	-2.26 at 25 °C (77 °F)

<b>L-VALINE (13C5, 99%; 15N, 99%) (72-18-4 (Unlabeled))</b>	
Log Pow	-2.259 at 20 °C (68 °F)

<b>L-GLUTAMINE (13C5, 99%; 15N2, 99%) (56-85-9 (Unlabeled))</b>	
Log Pow	-4.609

### 12.4. Mobility in soil

No additional information available

### 12.5. Results of PBT and vPvB assessment

No additional information available

### 12.6. Other adverse effects

No additional information available

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

Regional legislation (waste)	: Waste materials should be disposed of under conditions which meet Federal, State, and local environmental control regulations.
Product/Packaging disposal recommendations	: Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.
Ecology - waste materials	: Dispose of as unused product.

## SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

### 14.1. UN number

Not applicable



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### 14.2. UN proper shipping name

Not applicable

### 14.3. Additional information

Other information : No supplementary information available.

### Overland transport

No additional information available

### Transport by sea

No additional information available

### Air transport

No additional information available

### 14.4. Environmental hazards

Other information : No supplementary information available.

### 14.5. Special precautions for user

### 14.6. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

## SECTION 15: Regulatory information

### 15.1. US Federal regulations

CANONICAL AMINO ACID MIX	
SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302.
SARA Section 313 - Emission Reporting	Not subject to reporting requirements of the United States SARA Section 313.
L-ALANINE (13C3, 99%; 15N, 99%) (312623-85-1)	
SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302
SARA Section 313 - Emission Reporting	Not subject to reporting requirements of the United States SARA Section 313
L-ARGININE:HCL (13C6, 99%; 15N4, 99%) (202468-25-5)	
SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard
SARA Section 313 - Emission Reporting	Not subject to reporting requirements of the United States SARA Section 313
L-ASPARTIC ACID (13C4, 99%; 15N, 99%) (202468-27-7)	
SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard
SARA Section 313 - Emission Reporting	Not subject to reporting requirements of the United States SARA Section 313
L-CYSTINE (13C6, 99%; 15N2, 99%) (1252803-65-8)	
SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302.
SARA Section 313 - Emission Reporting	Not subject to reporting requirements of the United States SARA Section 313.
L-GLUTAMIC ACID (13C5, 99%; 15N, 99%) (56-86-0 (Unlabeled))	
SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302.
SARA Section 313 - Emission Reporting	Not subject to reporting requirements of the United States SARA Section 313.
L-HISTIDINE:HCL:H2O (<5% D) (13C6, 97-99%; 15N3, 97-99%) (202468-43-7)	
SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302.
SARA Section 313 - Emission Reporting	Not subject to reporting requirements of the United States SARA Section 313.
L-ISOLEUCINE (13C6, 99%; 15N, 99%) (73-32-5 (Unlabeled))	
SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302
SARA Section 313 - Emission Reporting	Not subject to reporting requirements of the United States SARA Section 313

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<b>L-LEUCINE (13C6, 99%; 15N, 99%) (202406-52-8)</b>	
SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302
SARA Section 313 - Emission Reporting	Not subject to reporting requirements of the United States SARA Section 313
<b>L-LYSINE:2HCL (13C6, 99%; 15N2, 99%) (657-26-1 (Unlabeled))</b>	
SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302.
SARA Section 313 - Emission Reporting	Not subject to reporting requirements of the United States SARA Section 313.
<b>L-METHIONINE (13C5, 99%; 15N, 99%) (63-68-3 (Unlabeled))</b>	
SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302
SARA Section 313 - Emission Reporting	Not subject to reporting requirements of the United States SARA Section 313
<b>L-PHENYLALANINE (13C9, 99%; 15N, 99%) (63-91-2 (Unlabeled))</b>	
SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302.
SARA Section 313 - Emission Reporting	Not subject to reporting requirements of the United States SARA Section 313.
<b>L-PROLINE (13C5, 99%; 15N, 99%) (147-85-3 (Unlabeled))</b>	
SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302.
SARA Section 313 - Emission Reporting	Not subject to reporting requirements of the United States SARA Section 313.
<b>L-SERINE (13C3, 99%; 15N, 99%) (202407-34-9)</b>	
SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302.
SARA Section 313 - Emission Reporting	Not subject to reporting requirements of the United States SARA Section 313.
<b>L-THREONINE (13C4, 97-99%; 15N, 97-99%) (72-19-5 (Unlabeled))</b>	
SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302.
SARA Section 313 - Emission Reporting	Not subject to reporting requirements of the United States SARA Section 313.
<b>L-TYROSINE (13C9, 99%; 15N, 99%) (202407-26-9)</b>	
SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302.
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard
SARA Section 313 - Emission Reporting	Not subject to reporting requirements of the United States SARA Section 313.
<b>L-VALINE (13C5, 99%; 15N, 99%) (72-18-4 (Unlabeled))</b>	
SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302
SARA Section 313 - Emission Reporting	Not subject to reporting requirements of the United States SARA Section 313
<b>L-GLUTAMINE (13C5, 99%; 15N2, 99%) (56-85-9 (Unlabeled))</b>	
SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302
SARA Section 313 - Emission Reporting	Not subject to reporting requirements of the United States SARA Section 313
<b>L-ASPARAGINE:H2O (13C4, 99%; 15N2, 99%) (202406-87-9)</b>	
SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302.
SARA Section 313 - Emission Reporting	Not subject to reporting requirements of the United States SARA Section 313.
<b>L-TRYPTOPHAN (13C11, 99%; 15N2, 99%) (202406-50-6)</b>	
SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302.
SARA Section 313 - Emission Reporting	Not subject to reporting requirements of the United States SARA Section 313.

## 15.2. International regulations

### CANADA

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Listed on the Canadian DSL (Domestic Substances List)

### 15.2.1. National regulations

No additional information available

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### 15.3. US State regulations

CANONICAL AMINO ACID MIX()				
U.S. - California - Proposition 65 - Carcinogens List		No		
U.S. - California - Proposition 65 - Developmental Toxicity		No		
U.S. - California - Proposition 65 - Reproductive Toxicity - Female		No		
U.S. - California - Proposition 65 - Reproductive Toxicity - Male		No		
State or local regulations		U.S. - Pennsylvania - RTK (Right to Know) List U.S. - New Jersey - Right to Know Hazardous Substance List		
L-ALANINE (13C3, 99%; 15N, 99%) (312623-85-1)				
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)
No	No	No	No	
L-ARGININE:HCL (13C6, 99%; 15N4, 99%) (202468-25-5)				
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)
No	No	No	No	
L-ASPARTIC ACID (13C4, 99%; 15N, 99%) (202468-27-7)				
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)
No	No	No	No	
L-CYSTINE (13C6, 99%; 15N2, 99%) (1252803-65-8)				
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)
No	No	No	No	
L-GLUTAMIC ACID (13C5, 99%; 15N, 99%) (56-86-0 (Unlabeled))				
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)
No	No	No	No	
L-HISTIDINE:HCL:H2O (<5% D) (13C6, 97-99%; 15N3, 97-99%) (202468-43-7)				
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)
No	No	No	No	
L-ISOLEUCINE (13C6, 99%; 15N, 99%) (73-32-5 (Unlabeled))				
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)
No	No	No	No	
L-LEUCINE (13C6, 99%; 15N, 99%) (202406-52-8)				
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)
No	No	No	No	

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<b>L-LYSINE:2HCL (13C6, 99%; 15N2, 99%) (657-26-1 (Unlabeled))</b>				
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)
No	No	No	No	
<b>L-METHIONINE (13C5, 99%; 15N, 99%) (63-68-3 (Unlabeled))</b>				
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)
No	No	No	No	
<b>L-PHENYLALANINE (13C9, 99%; 15N, 99%) (63-91-2 (Unlabeled))</b>				
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)
No	No	No	No	
<b>L-PROLINE (13C5, 99%; 15N, 99%) (147-85-3 (Unlabeled))</b>				
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)
No	No	No	No	
<b>L-SERINE (13C3, 99%; 15N, 99%) (202407-34-9)</b>				
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)
No	No	No	No	
<b>L-THREONINE (13C4, 97-99%; 15N, 97-99%) (72-19-5 (Unlabeled))</b>				
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)
No	No	No	No	
<b>L-TYROSINE (13C9, 99%; 15N, 99%) (202407-26-9)</b>				
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)
No	No	No	No	
<b>L-VALINE (13C5, 99%; 15N, 99%) (72-18-4 (Unlabeled))</b>				
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)
No	No	No	No	
<b>L-GLUTAMINE (13C5, 99%; 15N2, 99%) (56-85-9 (Unlabeled))</b>				
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)
No	No	No	No	
<b>L-ASPARAGINE:H2O (13C4, 99%; 15N2, 99%) (202406-87-9)</b>				
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)
No	No	No	No	

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<b>L-ASPARAGINE:H2O (13C4, 99%; 15N2, 99%) (202406-87-9)</b>				
No	No	No	No	
<b>L-TRYPTOPHAN (13C11, 99%; 15N2, 99%) (202406-50-6)</b>				
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)
No	No	No	No	
<b>GLYCINE (13C2,99%;15N,99%) MICROBIOLOGICAL/PYROGEN TESTED (211057-02-2)</b>				
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)
No	No	No	No	
<b>L-ALANINE (13C3, 99%; 15N, 99%) (312623-85-1)</b>				
<b>State or local regulations</b>				
U.S. - Pennsylvania - RTK (Right to Know) List U.S. - New Jersey - Right to Know Hazardous Substance List				
<b>L-ARGININE:HCL (13C6, 99%; 15N4, 99%) (202468-25-5)</b>				
<b>State or local regulations</b>				
U.S. - Pennsylvania - RTK (Right to Know) List U.S. - New Jersey - Right to Know Hazardous Substance List				
<b>L-ASPARTIC ACID (13C4, 99%; 15N, 99%) (202468-27-7)</b>				
<b>State or local regulations</b>				
U.S. - Pennsylvania - RTK (Right to Know) List U.S. - New Jersey - Right to Know Hazardous Substance List				
<b>L-CYSTINE (13C6, 99%; 15N2, 99%) (1252803-65-8)</b>				
<b>State or local regulations</b>				
U.S. - Pennsylvania - RTK (Right to Know) List U.S. - New Jersey - Right to Know Hazardous Substance List				
<b>L-GLUTAMIC ACID (13C5, 99%; 15N, 99%) (56-86-0 (Unlabeled))</b>				
<b>State or local regulations</b>				
U.S. - Pennsylvania - RTK (Right to Know) List U.S. - New Jersey - Right to Know Hazardous Substance List				
<b>L-HISTIDINE:HCL:H2O (&lt;5% D) (13C6, 97-99%; 15N3, 97-99%) (202468-43-7)</b>				
<b>State or local regulations</b>				
U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) List				
<b>L-ISOLEUCINE (13C6, 99%; 15N, 99%) (73-32-5 (Unlabeled))</b>				
<b>State or local regulations</b>				
U.S. - Pennsylvania - RTK (Right to Know) List U.S. - New Jersey - Right to Know Hazardous Substance List				
<b>L-LEUCINE (13C6, 99%; 15N, 99%) (202406-52-8)</b>				
<b>State or local regulations</b>				
U.S. - Pennsylvania - RTK (Right to Know) List U.S. - New Jersey - Right to Know Hazardous Substance List				
<b>L-LYSINE:2HCL (13C6, 99%; 15N2, 99%) (657-26-1 (Unlabeled))</b>				
<b>State or local regulations</b>				
U.S. - Pennsylvania - RTK (Right to Know) List U.S. - New Jersey - Right to Know Hazardous Substance List				
<b>L-METHIONINE (13C5, 99%; 15N, 99%) (63-68-3 (Unlabeled))</b>				
<b>State or local regulations</b>				
U.S. - Pennsylvania - RTK (Right to Know) List U.S. - New Jersey - Right to Know Hazardous Substance List				

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<b>L-PHENYLALANINE (13C9, 99%; 15N, 99%) (63-91-2 (Unlabeled))</b>
<b>State or local regulations</b>
U.S. - Pennsylvania - RTK (Right to Know) List U.S. - New Jersey - Right to Know Hazardous Substance List
<b>L-PROLINE (13C5, 99%; 15N, 99%) (147-85-3 (Unlabeled))</b>
<b>State or local regulations</b>
U.S. - Pennsylvania - RTK (Right to Know) List U.S. - New Jersey - Right to Know Hazardous Substance List
<b>L-SERINE (13C3, 99%; 15N, 99%) (202407-34-9)</b>
<b>State or local regulations</b>
U.S. - Pennsylvania - RTK (Right to Know) List U.S. - New Jersey - Right to Know Hazardous Substance List
<b>L-THREONINE (13C4, 97-99%; 15N, 97-99%) (72-19-5 (Unlabeled))</b>
<b>State or local regulations</b>
U.S. - Pennsylvania - RTK (Right to Know) List U.S. - New Jersey - Right to Know Hazardous Substance List
<b>L-TYROSINE (13C9, 99%; 15N, 99%) (202407-26-9)</b>
<b>State or local regulations</b>
U.S. - Pennsylvania - RTK (Right to Know) List U.S. - New Jersey - Right to Know Hazardous Substance List
<b>L-VALINE (13C5, 99%; 15N, 99%) (72-18-4 (Unlabeled))</b>
<b>State or local regulations</b>
U.S. - Pennsylvania - RTK (Right to Know) List U.S. - New Jersey - Right to Know Hazardous Substance List
<b>L-GLUTAMINE (13C5, 99%; 15N2, 99%) (56-85-9 (Unlabeled))</b>
<b>State or local regulations</b>
U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) List
<b>L-ASPARAGINE:H2O (13C4, 99%; 15N2, 99%) (202406-87-9)</b>
<b>State or local regulations</b>
U.S. - Pennsylvania - RTK (Right to Know) List U.S. - New Jersey - Right to Know Hazardous Substance List
<b>L-TRYPTOPHAN (13C11, 99%; 15N2, 99%) (202406-50-6)</b>
<b>State or local regulations</b>
U.S. - Pennsylvania - RTK (Right to Know) List U.S. - New Jersey - Right to Know Hazardous Substance List
<b>GLYCINE (13C2,99%;15N,99%) MICROBIOLOGICAL/PYROGEN TESTED (211057-02-2)</b>
<b>State or local regulations</b>
U.S. - Pennsylvania - RTK (Right to Know) List U.S. - New Jersey - Right to Know Hazardous Substance List

## SECTION 16: Other information

Other information : This product is not radioactive. The data given for this product are those of the corresponding unlabeled compound, unless specifically indicated otherwise. Health and safety data for labeled compounds are generally not available, but are assumed to be similar or identical to the corresponding unlabeled compound.

Full text of R-, H- and EUH-phrases:

Eye Irrit. 2	Serious eye damage/eye irritation Category 2
Skin Irrit. 2	Skin corrosion/irritation Category 2
Skin Sens. 1	Skin sensitization, Category 1
STOT SE 3	Specific target organ toxicity (single exposure) Category 3
H315	Causes skin irritation
H317	May cause an allergic skin reaction

# CANONICAL AMINO ACID MIX

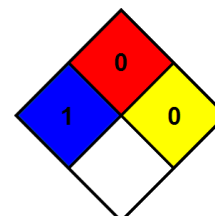
MSK-CAA

## Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830 and according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

H319	Causes serious eye irritation
H335	May cause respiratory irritation
R21/22	Harmful in contact with skin and if swallowed
R36	Irritating to eyes
R36/37/38	Irritating to eyes, respiratory system and skin
R36/38	Irritating to eyes and skin
R43	May cause sensitization by skin contact
Xi	Irritant
Xn	Harmful

NFPA health hazard	: 1 - Materials that, under emergency conditions, can cause significant irritation.
NFPA fire hazard	: 0 - Materials that will not burn under typical fire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand.
NFPA reactivity	: 0 - Material that in themselves are normally stable, even under fire conditions.



### Hazard Rating

Health	: 1 Slight Hazard - Irritation or minor reversible injury possible
Flammability	: 0 Minimal Hazard
Physical	: 0 Minimal Hazard

CIL Multi-Solvent Mixture SDS

*This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product*