



"CELL FREE" AMINO ACID MIX (20 AA) (U-13C, 97-99%+; U-15N, 97-99%)

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations
Issue date: 4/7/2014 Revision date: 1/4/2024 Supersedes: 1/22/2021 Version: 8.1

SECTION 1: Identification

1.1. Identification

Product form : Mixture
Product name : "CELL FREE" AMINO ACID MIX (20 AA) (U-13C, 97-99%+; U-15N, 97-99%)
Product code : CNLM-6696

1.2. Recommended use and restrictions on use

No additional information available

1.3. Supplier

Cambridge Isotope Laboratories, Inc.
50 Frontage Rd
01810
ANDOVER, MA, 01810
USA
T 1-800-322-1174
cilsales@isotope.com - www.isotope.com

1.4. Emergency telephone number

Emergency number : 1-703-741-5970
Chemtrec 1-800-424-9300 24 hours

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS US classification

Skin corrosion/irritation Category 2	H315	Causes skin irritation
Serious eye damage/eye irritation Category 2	H319	Causes serious eye irritation
Skin sensitization, Category 1	H317	May cause an allergic skin reaction

Full text of H statements : see section 16

2.2. GHS Label elements, including precautionary statements

GHS US labeling

Hazard pictograms (GHS US) :



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 clothing, protective gloves.
P302+P352 - If on skin: Wash with plenty of water.
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove

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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 which do not result in classification

No additional information available

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/Information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	GHS US classification
ALGAL AMINO ACID MIXTURE (U-13C, 97-99%; U-15N, 97-99%)	-	~ 85	Skin Irrit. 2, H315 Eye Irrit. 2, H319 Skin Sens. 1, H317
L-ASPARAGINE:H2O (13C4, 99%; 15N2, 99%)	CAS-No.: 202406-87-9	~ 5	Not classified
L-GLUTAMINE (13C5, 99%; 15N2, 99%)	CAS-No.: 56-85-9	~ 4	Not classified
L-TRYPTOPHAN (13C11, 99%; 15N2, 99%)	CAS-No.: 202406-50-6	~ 3	Not classified
L-CYSTEINE (13C3, 99%; 15N, 99%)	CAS-No.: 202406-97-1	~ 3	Not classified

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

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.

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4.2. Most important symptoms and effects (acute and delayed)

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.

4.3. Immediate medical attention and special treatment, if necessary

No additional information available

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media	: Water spray. Dry chemical powder, alcohol-resistant foam, carbon dioxide (CO ₂).
Unsuitable extinguishing media	: Do not use a heavy water stream.

5.2. Specific hazards arising from the chemical

Hazardous decomposition products in case of fire	: Carbon oxides (CO, CO ₂).
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5.3. Special protective equipment and precautions for fire-fighters

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.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures	: Remove ignition sources. No open flames. No smoking. Use special care to avoid static electric charges.
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6.1.1. For non-emergency personnel

Emergency procedures	: Avoid breathing vapors, mist, gas. Avoid dust formation. Ensure adequate air ventilation. Evacuate unnecessary personnel. Wear respiratory protection. Wear personal protective equipment.
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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".
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6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters. Do not allow product to spread into 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.

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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	: Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapor. Avoid breathing dust, gas, fume, mist, spray, vapors. Keep away from sources of ignition - No smoking. No open flames. No smoking.
Hygiene measures	: Wash hands, forearms and face thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures	: Proper grounding procedures to avoid static electricity should be followed. Store tightly closed in a dry and cool place.
Storage conditions	: Store refrigerated (-5 °C to 5 °C). Protect from light.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

"CELL FREE" AMINO ACID MIX (20 AA) (U-13C, 97-99%+; U-15N, 97-99%)	
No additional information available	
L-GLUTAMINE (13C5, 99%; 15N2, 99%) (56-85-9)	
USA - ACGIH - Occupational Exposure Limits	
ACGIH chemical category	No component of this product present at levels greater than or equal to 0.1% is identifiable as a carcinogen or potential carcinogen by ACGIH.
L-TRYPTOPHAN (13C11, 99%; 15N2, 99%) (202406-50-6)	
USA - ACGIH - Occupational Exposure Limits	
ACGIH chemical category	No component of this product present at levels greater than or equal to 0.1% is identifiable as a carcinogen or potential carcinogen by ACGIH.
L-ASPARAGINE:H2O (13C4, 99%; 15N2, 99%) (202406-87-9)	
USA - ACGIH - Occupational Exposure Limits	
ACGIH chemical category	No component of this product present at levels greater than or equal to 0.1% is identifiable as a carcinogen or potential carcinogen by ACGIH.
L-CYSTEINE (13C3, 99%; 15N, 99%) (202406-97-1)	
No additional information available	
ALGAL AMINO ACID MIXTURE (U-13C, 97-99%; U-15N, 97-99%)	
No additional information available	

8.2. Appropriate engineering controls

Appropriate engineering controls	: Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.
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8.3. Individual protection measures/Personal protective equipment

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:
Chemical goggles or safety glasses
Skin and body protection:
Wear suitable protective clothing
Respiratory protection:
Wear appropriate mask

Personal protective equipment symbol(s):



Other information:

Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Solid
Appearance	: Solid.
Color	: White to Beige
Odor	: No data available
Odor threshold	: No data available
pH	: No data available
Melting point	: No data available
Freezing point	: No data available
Boiling point	: No data available
Flash point	: No data available
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: Non flammable.
Vapor pressure	: No data available
Relative vapor density at 20°C	: No data available
Relative density	: No data available
Solubility	: No data available
Partition coefficient n-octanol/water (Log Pow)	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available

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Explosion limits : No data available
Explosive properties : Heating may cause an explosion.
Oxidizing properties : 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

Five years after receipt if stored as stated in "Storage" section. Re-QC after 5 years.

10.3. Possibility of hazardous reactions

No additional information available

10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures.

10.5. Incompatible materials

Strong acids. Strong bases.

10.6. Hazardous decomposition products

Carbon monoxide. Carbon dioxide.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral) : Not classified
Acute toxicity (dermal) : Not classified
Acute toxicity (inhalation) : Not classified

L-GLUTAMINE (13C5, 99%; 15N2, 99%) (56-85-9)

LD50 oral rat	7500 mg/kg
ATE US (oral)	7500 mg/kg body weight

L-TRYPTOPHAN (13C11, 99%; 15N2, 99%) (202406-50-6)

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.
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L-CYSTEINE (13C3, 99%; 15N, 99%) (202406-97-1)

LD50 oral rat	5850 mg/kg female
LD50 dermal rat	> 2000 mg/kg male and female
ATE US (oral)	5850 mg/kg body weight

Skin corrosion/irritation : Causes skin irritation.

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L-GLUTAMINE (13C5, 99%; 15N2, 99%) (56-85-9)	
pH	5 – 6 at 14.6 g/l at 25 °C (77 °F)
Serious eye damage/irritation	: Causes serious eye irritation.

L-GLUTAMINE (13C5, 99%; 15N2, 99%) (56-85-9)	
pH	5 – 6 at 14.6 g/l at 25 °C (77 °F)
Respiratory or skin sensitization	: May cause an allergic skin reaction.
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
STOT-single exposure	: Not classified
STOT-repeated exposure	: Not classified
Aspiration hazard	: Not classified
Viscosity, kinematic	: No data available
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.

L-CYSTEINE (13C3, 99%; 15N, 99%) (202406-97-1)	
LC50 - Fish [1]	> 100 mg/l Danio Rerio (Zebra fish) - 96 h
EC50 - Crustacea [1]	> 100 mg/l Daphnia magna (Water flea) - 48 h

12.2. Persistence and degradability

L-CYSTEINE (13C3, 99%; 15N, 99%) (202406-97-1)	
Persistence and degradability	Aerobic - exposure time: 28 d.
Biodegradation	98 % Readily biodegradable

12.3. Bioaccumulative potential

L-GLUTAMINE (13C5, 99%; 15N2, 99%) (56-85-9)	
Partition coefficient n-octanol/water (Log Pow)	-4.609

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Other adverse effects : Avoid release to the environment. Disposal must be done according to official regulations.

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SECTION 13: Disposal considerations

13.1. Disposal 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 DOT / TDG / IMDG / IATA

14.1. UN number

Not regulated for transport

14.2. UN proper shipping name

Proper Shipping Name (DOT)	: Not applicable
Proper Shipping Name (TDG)	: Not applicable
Proper Shipping Name (IMDG)	: Not applicable
Proper Shipping Name (IATA)	: Not applicable

14.3. Transport hazard class(es)

DOT

Transport hazard class(es) (DOT) : Not applicable

TDG

Transport hazard class(es) (TDG) : Not applicable

IMDG

Transport hazard class(es) (IMDG) : Not applicable

IATA

Transport hazard class(es) (IATA) : Not applicable

14.4. Packing group

Packing group (DOT)	: Not applicable
Packing group (TDG)	: Not applicable
Packing group (IMDG)	: Not applicable
Packing group (IATA)	: Not applicable

14.5. Environmental hazards

Other information : No supplementary information available.

14.6. Special precautions for user

Special transport precautions : Not dangerous

DOT

No data available

TDG

No data available

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IMDG

No data available

IATA

No data available

14.7. 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

"CELL FREE" AMINO ACID MIX (20 AA) (U-13C, 97-99%+; U-15N, 97-99%)

SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302.
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Commercial status of components according to the United States Environmental Protection Agency's Toxic Substances Control Act (TSCA):

Name	CAS-No.	Listing	Commercial status	Flags
L-GLUTAMINE (13C5, 99%; 15N2, 99%)	56-85-9	Not present	-	
L-TRYPTOPHAN (13C11, 99%; 15N2, 99%)	202406-50-6	Not present	-	
L-ASPARAGINE:H2O (13C4, 99%; 15N2, 99%)	202406-87-9	Not present	-	
L-CYSTEINE (13C3, 99%; 15N, 99%)	202406-97-1	Not present	-	
ALGAL AMINO ACID MIXTURE (U-13C, 97-99%; U-15N, 97-99%)		Not present	-	

L-GLUTAMINE (13C5, 99%; 15N2, 99%) (56-85-9)

SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302
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L-TRYPTOPHAN (13C11, 99%; 15N2, 99%) (202406-50-6)

SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302.
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L-ASPARAGINE:H2O (13C4, 99%; 15N2, 99%) (202406-87-9)

SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302.
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L-CYSTEINE (13C3, 99%; 15N, 99%) (202406-97-1)

SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard
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ALGAL AMINO ACID MIXTURE (U-13C, 97-99%; U-15N, 97-99%)

SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302.
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15.2. International regulations

CANADA

L-TRYPTOPHAN (13C11, 99%; 15N2, 99%) (202406-50-6)

Not listed on the Canadian DSL (Domestic Substances List)/NDSL (Non-Domestic Substances List)

L-ASPARAGINE:H2O (13C4, 99%; 15N2, 99%) (202406-87-9)

Not listed on the Canadian DSL (Domestic Substances List)/NDSL (Non-Domestic Substances List)

L-CYSTEINE (13C3, 99%; 15N, 99%) (202406-97-1)

Not listed on the Canadian DSL (Domestic Substances List)/NDSL (Non-Domestic Substances List)

EU-Regulations

No additional information available

National regulations

No additional information available

15.3. US State regulations

Component	State or local regulations
ALGAL AMINO ACID MIXTURE (U-13C, 97-99%; U-15N, 97-99%)()	U.S. - Pennsylvania - RTK (Right to Know) List; U.S. - New Jersey - Right to Know Hazardous Substance List

SECTION 16: Other information

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Revision date

: 01/04/2024

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 H-phrases	
H315	Causes skin irritation
H317	May cause an allergic skin reaction
H319	Causes serious eye irritation

Safety Data Sheet (SDS), USA

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