According to Regulation (EC) No 1907/2006
According to Regulation (EC) No 2020/878

L-Threonine

Version number: 1
Issued: 2024-04-04

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

1.1. Product identifier

Trade name
L-Threonine

CAS number
72-19-5

EC number
200-774-1

Synonyms
2-amino-3-hydroxybutanoic acid

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

Relevant identified uses
Research and development. Laboratory Chemicals. Manufacture of substances.

Not suitable for use in
Not suitable for human consumption or veterinary purposes.

1.3. Details of the supplier of the safety data sheet

Supplier
Molekula Group

Address
Molekula Ltd, Lingfield Way, Darlington,
DL1 4XX Darlington
United Kingdom

Telephone
+44 (0) 3302 000 333

Email
info@molekula.com

Web site
www.molekula.com

Contact person
Kevin Banks

Email
+44 (0) 7769276927

1.4. Emergency telephone number

Poison center/Additional emergency number
0344 892 0111 - National Poisons Information Service (Newcastle Centre)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture
The product is not classified as hazardous according to Regulation (EC) No 1272/2008.

2.2. Label elements
Precautionary statements
P202 Do not handle until all safety precautions have been read and understood.
P264 Wash skin thoroughly after handling.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
P405 Store locked up.
P501 Dispose of contents/container to local regulations.

2.3. Other hazards
No data available

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Chemical name	CAS No. EC No. REACH No. Index No.	Concentration	Classification	H-phrase M factor acute M factor chronic	Note
L-Threonine	72-19-5 200-774-1 - -	100%	-	- - -	-

Molecular weight
119.12

Substance additional information
For the complete text of H- / EUH-statements mentioned in this section, see section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures
Inhalation
Move to fresh air if inhaled.
Get medical attention if any discomfort continues.

Skin contact
Rinse skin with water.
If skin irritation or rash occurs: Get medical advice/attention.

Eye contact
Remove contact lenses if present. Rinse eyes with water.
If eye irritation persists: Get medical advice/attention.

Ingestion
Rinse mouth.
Get medical advice/attention if you feel unwell.

Information for doctors
No data available.

4.2. Most important symptoms and effects, both acute and delayed
The severity of the symptoms described will vary dependant of the concentration and the length of exposure.

Inhalation
May cause respiratory irritation.

Skin contact
Prolonged contact may cause dryness of the skin.

Eye contact
May be slightly irritating to the eyes.

Ingestion
May cause discomfort if swallowed.

4.3. Indication of any immediate medical attention and special treatment needed
Treat symptomatically. No special treatment requirement.

SECTION 5: Firefighting measures

5.1. Extinguishing media
Suitable extinguishing media
In case of fire: Use foam, carbon dioxide, dry powder or water fog to extinguish.

Unsuitable extinguishing media
No specific fire fighting procedure given.

5.2. Special hazards arising from the substance or mixture
Specific hazards:
Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapours.
Carbon monoxide (CO). Carbon dioxide (CO_2).
Nitrous gases (NO_x).

5.3. Advice for firefighters

Special protective equipment for fire-fighters

Evacuate area. Avoid breathing gas, fume, vapours or spray. Cool containers exposed to heat with water spray and remove container, if no risk is involved.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Avoid breathing dust/fume/gas/mist/vapours/spray. Provide adequate ventilation. For personal protection, see section 8.

6.2. Environmental precautions

Avoid discharge into drains, water courses or onto the ground.

6.3. Methods and material for containment and cleaning up

Collect spillage with shovel, broom or the like and reuse, if possible. Dispose of large amounts of spillage/waste according to agreement with local authorities.

6.4. Reference to other sections

For personal protection, see section 8. For waste disposal, see section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Preventive handling precautions

Wear protective clothing, gloves, eye and face protection. Avoid contact with skin and eyes. Do not breathe dust/fume/gas/mist/vapours/spray. Avoid ingestion and inhalation. For precautions see section 2.2.

General hygiene

Observe good chemical hygiene practices. Keep away from food, drink and animal feeding stuffs. Do not eat, drink or smoke when using this product. Remove contaminated clothing and launder thoroughly before re-use. Wash skin thoroughly after handling.

7.2. Conditions for safe storage, including any incompatibilities

Store at ambient temperature. Store in a dry place. Store in a closed container.

7.3. Specific end use(s)

No specific usage precautions noted.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure limits

No occupational exposure limit assigned.

8.2. Exposure controls

Personal Protective Equipment Symbols

Eye / face protection
Wear eye protection.

Hand protection
Wear protective gloves.
No specific hygiene procedures noted, but good personal hygiene practices are always advisable, especially when working with chemicals.
Wash contaminated skin thoroughly after handling.

Other skin protection
Wash skin thoroughly after handling.

Respiratory protection
Provide adequate ventilation.

Environmental exposure controls
Avoid discharge into drains.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state
Solid

Colour
White.

Odour
Odourless.

Melting point / freezing point
255 °C

Boiling point or initial boiling point and boiling range
No data available

Flammability
No data available

Lower and upper explosion limit
No data available

Flash point
No data available

Auto-ignition temperature
No data available

Decomposition temperature
No data available

pH
5 - 6.5

Kinematic viscosity
No data available

Solubility
59.6 g/l at 20 °C - completely soluble

Partition coefficient n-octanol/water
No data available

Vapour pressure
No data available

Density and/or relative density
No data available

Relative vapour density
No data available

Particle characteristics
No data available

9.2. Other information
No data available

SECTION 10: Stability and reactivity

10.1. Reactivity
There are no known reactivity hazards associated with this product.

10.2. Chemical stability
Stable under the prescribed storage conditions.

10.3. Possibility of hazardous reactions
No data available

10.4. Conditions to avoid
No data available

10.5. Incompatible materials
Strong oxidising agents.

10.6. Hazardous decomposition products

See section 5.

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity

Product / Substance name CAS / EC no.	Dose descriptor	Value / Dose	Exposure route	Duration of exposure	Test animals
L-Threonine 72-19-5 / 200-774-1	LD50	>2000 mg/kg	Oral	-	Rat
L-Threonine 72-19-5 / 200-774-1	LC50	>5.15 mg/l (dust/mist)	Inhalation.	4 hours	Rat

Skin corrosion/irritation

Product / Substance name CAS / EC no.	Result	Duration of exposure	Species
L-Threonine 72-19-5 / 200-774-1	No skin irritation.	4 hours	Rabbit

Serious eye damage/irritation

Product / Substance name CAS / EC no.	Result	Species
L-Threonine 72-19-5 / 200-774-1	No eye irritation.	Rabbit

Respiratory or skin sensitisation

Product / Substance name CAS / EC no.	Result	Species	Method / Guideline
L-Threonine 72-19-5 / 200-774-1	Negative.	Guinea Pig	Maximization Test

Germ cell mutagenicity

Product / Substance name CAS / EC no.	Result	Metabolic activation / Exposure	Species	Method / Guideline
L-Threonine 72-19-5 / 200-774-1	Negative.	with and without metabolic activation	S. typhimurium	Ames test
L-Threonine 72-19-5 / 200-774-1	Negative.	with and without metabolic activation	Human lymphocytes	Mutagenicity (mammal cell test): Chromosome aberration:
L-Threonine 72-19-5 / 200-774-1	Negative.	with and without metabolic activation	Mouse lymphoma cells	In vitro mammalian cell gene mutation test.

Aspiration hazard
Based on available data, the classification criteria are not met.

11.2. Information on other hazards
No data available

SECTION 12: Ecological information

12.1. Toxicity
Acute algae toxicity

Product / Substance name CAS / EC no.	Measurement type	Value / Result	Duration of exposure	Species
L-Threonine 72-19-5 / 200-774-1	ErC50	>1000 mg/l	72 hours	Desmodesmus subspicatus (green algae)

Acute crustacean toxicity

Product / Substance name CAS / EC no.	Measurement type	Value / Result	Duration of exposure	Species
L-Threonine 72-19-5 / 200-774-1	EC50	>1000 mg/l	48 hours	Daphnia magna

12.2. Persistence and degradability
No data available

12.3. Bioaccumulative potential
No data available

12.4. Mobility in soil
No data available

12.5. Results of PBT and vPvB assessment
No data available

12.6. Endocrine disrupting properties
This product does not contain any known or suspected endocrine disruptors.

12.7. Other adverse effects
No data available

SECTION 13: Disposal considerations

13.1. Waste treatment methods
Disposal considerations
Dispose of contents/container in accordance with local/regional/national/international regulations.

SECTION 14: Transport information

14.1. UN number
Not applicable

14.2. UN proper shipping name
Not applicable

14.3. Transport hazard class(es)
Not applicable

14.4. Packing group
Not applicable

14.5. Environmental hazards
Not applicable

14.6. Special precautions for user
Not applicable

14.7. Maritime transport in bulk according to IMO instruments
Not applicable

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
EU regulations
This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006.
This material safety data sheet complies with the requirements of Regulation (EU) 2020/878.

National regulations
No data available

15.2. Chemical safety assessment

No chemical safety assessment has been carried out.

SECTION 16: Other information

No data available