



Product Safety Sheet

Issuing date: 04-Jun-2019

Revision Date: 07-Jun-2019

Revision Number: 1

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND THE COMPANY/UNDERTAKING

Product Code:

035601EU

Product Identifier

Substance name: L-threonine

EC No: 200-774-1

CAS No: 72-19-5

Synonyms: l-2-Amino-3-hydroxybutyric acid, L-Thr, IFN:
5-08-092

Product Name:

L-Threonine 98.5%

Use of the Substance / Preparation:

Animal Feed

Supplier:

Tongliao Meihua Biological Sci-Tech Co., Ltd. Mulitu Town,
Keerqin Dis., Tongliao, Inner Mongolia, China 028024. No.:
1500FA001. Group telephone exchange: 0316-2359999. Fax:
+86-316-2359680. : www.meihuagr.com

Supplied in the E.U. by:

ADM Animal Nutrition
Kingsfordweg 83
1043 GP Amsterdam
Tel. +31 20 21 95 353 (Business Hours)
europefeedingredients@adm.com

EU Emergency Telephone Number:

National Helpdesk Contacts provided by ECHA:
<http://echa.europa.eu/web/guest/support/helpdesks/national-help-desks/list-of-national-helpdesks>

2. HAZARDS IDENTIFICATION

Classification according to Regulation (EC) No. 1272/2008

This product does not meet the criteria for classification in any hazard class according to Regulation (EC) No. 1272/2008 on classification, labeling and packaging of substances and mixtures. An SDS is not required for this product.

Fine dust dispersed in air may ignite.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Family

Amino acid

Molecular Formula

C₄ H₉ NO₃

| Chemical Name | EC-No | CAS-No | CLP Annex VI Index No. | Weight % | Classifications |
|---------------|-----------|---------|------------------------|----------|-----------------|
| L-Threonine | 200-774-1 | 72-19-5 | not listed | 98.5 | not listed |

4. FIRST AID MEASURES

Description of first aid measures

Eye Contact Rinse thoroughly with plenty of water, also under the eyelids.

Skin Contact Wash off immediately with soap and plenty of water.

Inhalation Move to fresh air.

Ingestion Clean mouth with water and afterwards drink plenty of water. Consult a physician if necessary.

Protection of First-aiders Use personal protective equipment.

Most important symptoms and affects, both acute and delayed**Eyes** Contact with eyes may cause mechanical irritation.**Skin** Product dust may cause mild, mechanical irritation.**Inhalation** Dust may cause irritation of respiratory tract.**Ingestion** Not for human consumption. May be harmful if swallowed. (dependent on amounts)**Indication of any immediate medical attention and special treatment needed****Notes to Physician** Special forms of treatment and immediate medical attention are not specified. Treat Symptomatically**5. FIRE-FIGHTING MEASURES****Extinguishing media****Suitable Extinguishing Media** Water. Carbon dioxide (CO₂) Dry chemical. Foam. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.**Unsuitable extinguishing media** No information available.**Special hazards arising from the substance or mixture****Hazardous Combustion Products** Carbon monoxide (CO). Carbon dioxide (CO₂). Nitrogen oxides (NO_x).**Specific Hazards Arising from the Chemical** None known.**Advice for fire-fighters****Special protective equipment for fire-fighters** In the event of fire, wear self contained breathing apparatus in accordance with EN 137:2006.**Further information** Dust explosibility class = 2 [Kst value (bar-m/sec) = 208] Strongly explosible.**6. ACCIDENTAL RELEASE MEASURES****Personal Precautions, Protective Equipment, and Emergency Procedures**

Ensure adequate ventilation. Avoid sparks, flames, static electricity discharges, etc. in the presence of dust. Use personal protective equipment. For personal protection see section 8.

Environmental Precautions

Prevent further leakage or spillage if safe to do so.

Methods and Materials for Containment and Cleaning Up

Sweep up and shovel into suitable containers for disposal. Avoid dust formation. After cleaning, flush away traces with water.

7. HANDLING AND STORAGE**Handling**

Handle in accordance with good industrial hygiene and safety practice. Ensure adequate ventilation. Avoid dust formation in confined areas. Fine dust dispersed in air may ignite.

Storage

Keep in a dry, cool and well-ventilated place. Keep containers dry and tightly closed to avoid moisture absorption and contamination.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION**Components with workplace control parameters**

This product is not known to contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

| Chemical Name | Austria | Belgium | Bulgaria | Cyprus | Czech Republic |
|--------------------------------------|---------|--|--|--------|------------------------|
| Particulates not otherwise regulated | - | TWA: 3 mg/m ³ alveolar fraction TWA: 10 mg/m ³ inhalable fraction | - | - | TWA:6mg/m ³ |
| Chemical Name | Denmark | Estonia | Finland | France | Germany |
| Particulates not otherwise regulated | - | - | - | - | - |
| Chemical Name | Greece | Hungary | Ireland | Italy | Latvia |
| Particulates not otherwise regulated | - | - | TWA: 10mg/m ³ total inhalable TWA: 4mg/m ³ respirable STEL: 30mg/m ³ STEL: 12mg/m ³ | - | - |

| Chemical Name | Lithuania | Luxembourg | Malta | Netherlands | Poland |
|--------------------------------------|---|----------------|----------|-------------|---|
| Particulates not otherwise regulated | - | - | - | - | - |
| Chemical Name | Portugal | Romania | Slovakia | Slovenia | Spain |
| Particulates not otherwise regulated | TWA: 10mg/m ³ TWA: 3mg/m ³ | - | - | - | TWA: 10 mg/m ³ TWA: 3 mg/m ³ |
| Chemical Name | Sweden | United Kingdom | EU | | |
| Particulates not otherwise regulated | - | - | - | | |

Appropriate Engineering Controls

Ensure adequate ventilation, especially in confined areas. Apply technical measures to comply with the occupational exposure limits. However it is the duty of the user to verify this and follow given exposure limits at the workplace.

General Hygiene Considerations

Handle in accordance with good industrial hygiene and safety practice.

Personal Protective Equipment

Eye Protection Goggles.

Skin and Body Protection Long sleeved clothing. Protective gloves.

Respiratory Protection In case of insufficient ventilation wear suitable respiratory equipment. P1 particle filter recommended.



9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|--|--|
| Appearance | Off-white |
| Form | Solid / Granules |
| Odor | Fermentation |
| Odor Threshold | No information available |
| pH | Neutral (10 g/l H ₂ O) |
| Flash Point | Not applicable |
| Autoignition Temperature | 370 °C / 698 °F |
| Boiling point | Not applicable |
| Melting/Freezing Point | Decomposes on heating |
| Decomposition temperature | 253 °C / 487 °F |
| Oxidizing Properties | Not oxidising. |
| Flammability Limits in Air | No information available |
| Explosion Limits | No information available |
| Solubility(ies) | |
| Water Solubility | Soluble 90g/l at 20°C |
| Evaporation Rate | Not applicable |
| Vapor Pressure | Not applicable |
| Vapor Density | No information available |
| Bulk Density | [0.74-0.79 g/cm ³] 46-49 lb./cu. ft. |
| Partition Coefficient (n-octanol/water) | No information available |

10. STABILITY AND REACTIVITY

Stability Stable under normal conditions.

Possibility of Hazardous Reactions None under normal processing.

Conditions to Avoid To avoid thermal decomposition, do not overheat. Avoid dust formation. Heat, flames and sparks.

Incompatible Materials Strong oxidizing agents.

Hazardous Decomposition Products Thermal decomposition may lead to release of; Nitrogen oxides (NOx).

11. TOXICOLOGICAL INFORMATION

Information on toxicological effects

| | |
|--|--|
| Acute toxicity | Based on available data, no evidence of acute toxicity |
| Skin corrosion/irritation | Based on available data, the classification criteria are not met |
| Serious eye damage/eye irritation | Based on available data, no evidence of serious eye damage / irritation |
| Respiratory or skin sensitisation | Based on available data, not expected to be a skin or respiratory sensitiser |
| Germ cell mutagenicity | Based on available data, the classification criteria are not met. |
| Carcinogenicity | Based on available data, no evidence of carcinogenicity |
| Reproductive toxicity | Based on available data, no evidence of reproductive toxicity |
| STOT - single exposure | Based on available data, the classification criteria are not met |
| STOT - repeated exposure | Based on available data, the classification criteria are not met |
| Aspiration hazard | Based on available data, no known aspiration hazard |

Potential health effects

| | |
|-------------------|--|
| Eyes | Contact with eyes may cause mechanical irritation. |
| Skin | Product dust may cause mild, mechanical irritation. |
| Inhalation | Dust may cause irritation of respiratory tract. |
| Ingestion | Not for human consumption. May be harmful if swallowed. (dependent on amounts) |

12. ECOLOGICAL INFORMATION

Ecotoxicity

Contains no substances known to be hazardous to the environment. Contains no substances known to be not degradable in waste water treatment plants.

Persistence/Degradability Readily biodegradable.

Mobility Soluble in water

13. DISPOSAL CONSIDERATIONS

Whenever possible, as rules and regulations allow, please recycle or manage materials to minimize waste.

Waste Disposal Methods

Can be landfilled or incinerated, when in compliance with local regulations. Dispose of in compliance with the laws and regulations pertaining to this product in your jurisdiction.

Contaminated Packaging

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

14. TRANSPORT INFORMATION

| | |
|-----------------|---------------|
| RID | Not regulated |
| ADR | Not regulated |
| ADN | Not regulated |
| ICAO | Not regulated |
| IATA | Not regulated |
| IMDG/IMO | Not regulated |

15. REGULATORY INFORMATION

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

International Inventories

| Chemical Name | EINECS | ELINCS | DSL | NDSL | AICS | CHINA | ENCS ISHL | KECL | NZIoC | PICCS | TSCA |
|---------------|------------------|--------|-----|------|------|-------|--|----------------------------------|-------|-------|------|
| L-Threonine | Yes 200-774-1 | No | Yes | No | Yes | Yes | Yes (9)-1584 2-(4)-598,2 -(4)-688 | Yes Annex 1 (KE-01392) | Yes | Yes | Yes |

WGK Classification:

Feed, in the meaning of the regulations, is not classified as water endangering in Germany.

16. OTHER INFORMATION

Indication of changes

Prepared By: ADM - Product Regulatory Affairs
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Abbreviations and acronyms

- ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
- ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road
- AICS - Australian Inventory of Chemical Substances (Australia)
- CAS - Chemical Abstract Service
- CHINA - Chinese Inventory of Existing Chemical Substances (China)
- CLP - Classification, Labelling and Packaging, Regulation (EC)1272/2008
- DSL - Domestic Substance List (Canada)
- EC - European Commission
- EINECS - European Inventory of Existing Commercial Chemical Substances (EU)
- ELINCS - European List of Notified Chemical Substances (EU)
- ENCS - Existing and New Chemical Substances (Japan) / ISHL - Industrial Health and Safety Law (Japan)
- IARC - International Agency for Research on Cancer
- IATA - International Air Transport Association Dangerous Goods Regulations
- ICAO - International Civil Aviation Organisation
- IMDG - International Maritime Dangerous Goods Code
- IMO - International Maritime Organization
- KECL - Korean Existing and Evaluated Chemical Substances (Korea)
- LD50 - Median lethal dose of a given test population
- NDSL - Non Domestic Substances List (Canada)
- NZIoC - New Zealand Inventory of Chemicals (New Zealand)
- PICCS - Inventory of Chemicals and Chemical Substances (Philippines)
- REACH - Registration, Evaluation, Authorisation and Restriction of Chemical substances
- RID - Regulations Concerning the International Carriage of Dangerous Goods by Rail
- TSCA - Toxic Substances Control Act, Section 8(b) Inventory (USA)
- TWA - Time Weighted Average: Average concentration that should not be exceeded during a work day (usually 8-hours)
- WGK - Wassergefährdungsklasse (German: Water Hazard Class)

The information provided on this sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text

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