



Tongliao Meihua Biological Sci-Tech Co.,Ltd
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MATERIAL SAFETY DATA SHEET

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

Product information

Trade name L-Threonine Feed Grade

Company Tongliao Meihua Biological Sci-Tech Co., Ltd.

Telephone +86-316-2359999

Telefax +86-316-2359680

Email address infor@Meihua-group.com

Use of the Substance Feed Additive

2. HAZARDS IDENTIFICATION

Additional safety information for humans and the environment

Not applicable.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name L-Threonine

Formula C₄H₉NO₃

CAS-NO. 72-19-5

EC-NO. 200-774-1

4. FIRST AID MEASURES

Inhalation

In case product dust is released:

Possible discomfort: cough, sneezing

Move victims into fresh air.

Skin contact

No hazards which require special first aid measures.

Eye contact

Possible discomfort is due to foreign substance effect.

Rinse thoroughly with plenty of water keeping eyelid open.

In case of persistent discomfort: Consult an ophthalmologist.

Ingestion

Have the mouth rinsed with water.

After absorbing large amounts of substance

Consult a physician.

Notes to physician

After absorbing large amounts of substance:

Acceleration of gastrointestinal passage



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5. FIRE-FIGHTING MEASURES

Suitable extinguishing media

Water, mist, foam

Extinguishing media which must not be used for safety reasons

quenching powder, carbon dioxide (CO₂)

Specific hazards during fire fighting

In the case of fire, the following hazardous smoke fumes may

be produced: carbon monoxide, carbon dioxide, nitric oxides, hydrocyanic acid.

In the event of fire and/or explosion do not breathe fumes.

Special protective equipment for fire-fighters

In the event of fire, wear self-contained breathing apparatus.

Further information

Contaminated fire-extinguishing water must be disposed of in accordance with the regulations issued by the appropriate local authorities.

Fire residues should be disposed of in accordance with the regulations.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions

Wear personal protective equipment.

Keep unauthorised persons away.

Environmental precautions

Do not allow the product into the following compartments:

Groundwater

Methods for cleaning up

Absorb mechanically avoiding production of dust.

7. HANDLING AND STORAGE

Handling

Safe handling advice

Handle in accordance with good industrial hygiene and safety practices.

Advice on protection against fire and explosion

Keep away from sources of ignition - No smoking.

Avoid dust formation.

Must be rendered inert for grinding.

VDI 2263 "Dust fires and dust explosions; dangers, evaluation, preventive measures

Storage

Requirements for storage areas and containers

, Keep in a dry, cool place.



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Avoid light effect.

Keep container tightly closed and dry.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Components with workplace control parameters

Engineering measures

Ensure suitable suction/aeration at the work place and with operational machinery.

Earthing of equipment.

Take precautionary measures against static discharges.

Personal protective equipment

Respiratory protection

If dust occurs: dust mask with P1 particle filter

Hand protection

Glove material Natural rubber

Material thickness 0,5 mm

Break through time 8h

Method DIN EN 374

Glove material Nitrile

Material thickness 0,11 mm

Break through time 8h

Method DIN EN 374

Eye protection

safety glasses

Skin and body protection

No special protective equipment required.

Hygiene measures

Wash face and/or hands before break and end of work.

Cleanse and apply cream to skin after work.

Protective measures

Handle in accordance with good industrial hygiene and safety practices.

If there is the possibility of skin/eye contact, the indicated hand/eye/body protection should be used.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form crystalline

Colour white until light grey

Odour almost odourless distinct

Safety data

PH 5 - 6 (50 g/l) (20 °C)

Water



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Melting point/range 253 - 257 °C

Decomposition

Boiling point/range not applicable

Sublimation point 200 °C

Ignition temperature 370 °C

Method: VDI Guideline 2263 sheet 1

(BAM-furnace)

for dust whirled up

glow temperature > 400 °C

Method: VDI 2263

Autoinflammability 156 °C

Method: VDI 2263

(in dm³ wire basket (IMDG code))

Explosiveness The product is susceptible to dust explosion.

Lower explosion limit dust: 60 g/m³

Method: VDI 3 673

Minimum ignition energy 100 - 300 mJ (25 °C)

Method: VDI Guideline 2263 sheet 1

mean grain size: 50 µm

Normal combustability

maximum absolute explosive 9,6 bar

pressure (with 1000 g/m³)

Vapour pressure not applicable

Density not applicable

Bulk density 585 - 715 kg/m³

Water solubility 90 g/l (20 °C)

(literature)

85,7 g/l (20 °C)

Method: EEC method 92169/EEC, A 6

Partition coefficient (n-octanol/water) log Pow: -2,94

Method: (measured)

Burning number BZ 5 - burns out with flames or shower of sparks.

Method: Combustibility test in accordance with VDI 2263

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10. STABILITY AND REACTIVITY

Hazardous decomposition products Hazardous decomposition products

not known

decomposition products when exposed to heat

flammable smouldering gases

Thermal decomposition 253 °C

TG (thermal gravimetric analysis)

Hazardous reactions Avoid dust formation.



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Stable at room temperature.

11. TOXICOLOGICAL INFORMATION

Acute oral toxicity LD50 Rat: > 2150 mg/kg

Method: OECD Test Guideline 401

Acute inhalation toxicity LC0 Rat(male1female): > 5.15 mg/l/4 h

Method: OECD Test Guideline 403

limit test (maximum concentration attainable in experiments) - No deaths occurred
occurred

Skin irritation Rabbit

not irritating

Method: OECD Test Guideline 404

Eye irritation Rabbit

not irritating

Method: OECD Test Guideline 405

Sensitization Magnusson & Kligman guinea pig: not sensitizing to the skin

Method: OECD Test Guideline 406

Repeated dose toxicity Oral Rat(male1female)

Testing period: 28 d

Subsequent observation period: 42 day

NOAEL: > 1000 mg/kg

target organ/effect: no pathological changes

Method: OECD 407

Gentoxicity in vitro Chromosome aberration test in vitro human lymphocytes 625 - 5000 ug/ml
negative

Metabolic activation: with or without

Method: OECD TG 473

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12. ECOLOGICAL INFORMATION

Elimination information (persistence and degradability)

Biodegradability Exposure time: 16 day

Result: 91 % Readily biodegradable.

Method: literature

Behaviour in environmental compartments

Ecotoxicity effects

Toxicity to daphnia EC50 static test Daphnia magna: > 1000 mg/l / 48 h

Method: OECD TG 202

EC50 static test Daphnia magna: > 1000 mg/l 124 h

Method: OECD TG 202

Toxicity to algae EC50 static test scenedesmus subspicatus: > 1000 mg/l / 72 h

Toxicity to bacteria EC 80 nitrobacteria: 119 mg/l / 69 h



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Method: literature

Toxicity in terrestrial plants EC 40 Hordeum spec.: ca. 119 mg/l 1 144 h

Method: literature

13. DISPOSAL CONSIDERATIONS

Product

Disposal according to local authority regulations.

Offer rinsed packaging material to local recycling facilities.

Waste Key Number

No waste key number as per the European Waste Types List can be assigned to this product, since such classification is based on the (as yet undetermined) use to which the product is put by the consumer., The waste key number must be determined as per the European Waste Types List (decision on EU Waste Types List 20001532IEC) in cooperation with the disposal firm I producing firm I official authority.

14. TRANSPORT INFORMATION

Transport/further information

Not classified as dangerous in the meaning of transport regulations.

15. REGULATORY INFORMATION

Labelling according to EC Directives

Other date On the basis of our data the product is not a hazardous substance as defined by the Chemicals Act or Hazardous Substance Ordinance in the currently valid versions.

National legislation

16. OTHER INFORMATION

Further information

Changes since the last version are highlighted in the margin. This version replaces all previous versions.

The information provided in this Safety Data 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 guidance for safe handling, use, processing, storage, transportation, disposal and release and is not

to be considered 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 materials or in any process, unless specified in the text.