SAFETY DATA SHEET

Version : 2
Revision date : August 9, 2021

1. PRODUCT AND COMPANY IDENTIFICATION

Product information

Trade name : L-THREONINE 98.5% Use of the Substance / : Feed Additive

Details of the supplier of the safety data sheet

Supplier	Pestell Nutrition
Address	141 Hamilton Rd New Hamburg, Ontario Canada, N3A 2H1
Phone	519-662-2877
Email	qa@pestell.com
Emergency telephone number (24 hr)	Canada: CANUTEC 1 613-996-6666 US: CHEMTREC 1 703-527-3887

2. HAZARDS IDENTIFICATION

POTENTIAL HEALTH EFFECTS

Eye contact : No hazard expected in normal use.

Skin Contact : No hazard expected in normal use.

Inhalation : No hazard expected in normal use.

Ingestion : No hazard expected in normal use.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name : L-Threonine

Formula : C4 H9 N O3 CAS-No. : 72-19-5

Other information :

This material is classified as not hazardous under OSHA regulations.

This product is intended for FDA use only.

4. FIRST AID MEASURES

Inhalation : In case product dust is released : Possible discomfort: cough, sneezing， Take affected persons out into the 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

5. FIREFIGHTING MEASURES

Lower explosion limit dust : 60 g/m^3 Method : VDI 3 673

Auto ignition temperature 400 ° C Method: DIN 51 794

for dust whirled up Suitable extinguishing media : water mist foam

Extinguishing media which must not be used for safety reasons : quenching powder carbon dioxide (CO2)

6. ACCIDENTAL RELEASE MEASURES

Personal precautions :

Wear personal protective equipment. Keep unauthorized persons away.

Environmental precautions : Obey relevant local, state, provincial and federal laws and regulations. Do not contaminate any lakes, streams, ponds, groundwater or soil.

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 :

Storage : Requirements for storage areas and containers Keep in a dry, cool place. Avoid light effect. Keep container tightly closed and dry.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering measures

Use process enclosures, local exhaust ventilation or other engineering controls to control airborne exposure.

Take precautionary measures against static discharges. Grounding of equipment.

Personal protective equipment

Respiratory protection

A respirator protection program that meets OSHA 1910.134 and ANSI Z88.2 or applicable federal/provincial requirements must be followed whenever workplace conditions warrant respirator use.

Hand protection

Glove material: Natural rubber, for example, cama clean 708

Material thickness:0.5mm

Break through time 8 h

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

Color: white until light grey

Odor: almost odourless distinct

Safety data

PH:5-6 (50 g/l) (20° C)water

Melting point/range:253-257° C decomposition

Boiling point/range: not applicable

Sublimation point: 200° C

Autoignition temperature:400° C

Glow temperature: >400° C

Autoinflammability: 156° C

Explosiveness: The product is susceptible to dust explosion.

Lower explosion limit: dust:60 g/m^3

Method:VID 3 673

Minimum ignition energy:60-110 mj (25° C)

Method:VID 2263

Normal combustabiltiy

Maximum absolute explosive: 9.6 bar (with 1000g/m^3)

Vapor pressure: Not applicable

Density: Not applicable

Bulk density: 585-715 kg/m^3

Water solubility: 90 g/l (20° C)

Method:EEC method 92/69/EEC, A6

Partition coefficient(n-octanol/water): log pow:-2.94

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

Method: Combusibility test in accordance with VDI 2263

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. Stable at room temperature.

11. TOXICOLOGICAL INFORMATION

Product Acute oral toxicity LD50 Rat : > 2150 mg/kg

Method: OECD Test Guideline 401

Product Acute inhalation toxicity LC0 Rat(male/female): > 5.15 mg/l / 4 h

Method : OECD Test Guideline 403

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

Product Skin irritation: Rabbit not irritating Method: OECD Test Guideline 404

Product Eye irritation : Rabbit not irritating Method: OECD Test Guideline 405

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

Method : OECD Test Guideline 406

12. ECOLOGICAL INFORMATION

Elimination information (persistence and degradability)

Biodegradability : Readily biodegradable. 91 %

Exposure time : 16 day Method : literature 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 / 24 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 , Method: literature

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

13. DISPOSAL CONSIDERATIONS

WASTE DISPOSAL Advice on disposal: Waste must be disposed of in accordance with federal, provincial and local regulations.

14. TRANSPORT INFORMATION

Transport/further information: Not classified as dangerous in the meaning of transport regulations.

15. REGULATORY INFORMATION

US Federal Regulations

OSHA :

If listed below, chemical specific standards apply to the product or components : None listed

Clean Air Act Section (112)

If listed below, components present at or above the de minimus level are hazardous air pollutants : None listed

CERCLA Reportable Quantities

If listed below, a reportable quantity (RQ) applies to the product based on the percent of the named component :

None listed

SARA Title III Section 311/312 Hazard Categories

The product meets the criteria only for the listed hazard classes : No SARA Hazards

SARA Title III Section 313 Reportable Substances

If listed below, components are subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372 : None listed

Toxic Substances Control Act (TSCA)

If listed below, non-proprietary substances are subject to export notification under Section 12 (b) of TSCA : None listed

State Regulations

California Proposition 65

A warning under the California Drinking Water Act is required only if listed below : None listed

16. OTHER INFORMATION

HMIS Ratings

Health : 0 Flammability : 1

Physical Hazard : 0 Further information

Disclaimer

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Pestell Nutrition and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product.

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