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MATERIAL SAFETY DATA SHEET

L-Tryptophan

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

1.1 Product identifiers:

Product name: L-Tryptophan

Product number: 0000073223

Brand: Discovery

Reach No.: A registration number is not available for this substance as the substance or its uses are exempted from registration, the annual tonnage does not require registration or the registration is envisaged for a later

Registration deadline.

Cas No.: 73-22-3

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

Identified uses: laboratory chemicals, manufacture of substances

1.3 Details of the supplier of the safety data sheet

Company: Discovery Fine Chemicals Ltd
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1.4 Emergency telephone : +44 (0)7912 646956

SECTION 2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 as amended by GB-CLP Regulation, UK SI 2019/720, and UK SI 2020/1567

Not a hazardous substance or mixture according to regulation (EC) No.1272/2008.

2.2 Label elements

Labelling according Regulation (EC) No 1272/2008

Not a hazardous substance or mixture according to regulation (EC) No.1272/2008.

2.3 Other hazards

None

Precautionary Statements

P261 Avoid breathing dust

P281 Use personal protective equipment as required.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Ribitol

Formula: C11H12N2O2, Molecular Weight: 204.23 g/mol

Cas No: 73-22-3

EC No: 200-795-6

No components need to be disclosed according to the applicable regulations.

4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice

Show this safety data sheet to the doctor in attendance.

If inhaled - If breathed in, move person into fresh air.

In case of skin contact – Wash off with soap and plenty of water.

In case of eye contact - Rinse eyes with plenty of water and remove contact lenses.

If swallowed

Drink water. Consult doctor if feeling unwell.

4.2 Most important symptoms and effects, both acute and delayed – the most important known symptoms and effects are described in the labelling (see section 2.2 and/or in section 11).

4.3 Indication of any immediate medical attention and special treatment needed

no data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media – use water spray, alcohol resistant foam, dry chemical or carbon dioxide (CO₂)

Unsuitable extinguishing media – for this substance no limitations of extinguishing agents are given.

5.2 Special hazards arising from the substance or mixture

Carbon oxides. Nitrogen oxides. Combustible. Development of combustion gases or vapours possible in the event of fire.

5.3 Advice for firefighters – wearing self-contained breathing apparatus.

5.4 Further information - Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Avoid dust formation. Avoid breathing vapours or mist or gas.

6.2 Environmental precautions – Do not let product enter drain.

6.3 Methods and materials for containment and cleaning up – sweep up and shovel. Keep in closed containers.

6.4 Reference to other sections - For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

See section 2.2

7.2 Conditions for safe storage, including any incompatibilities

Store at room temperature. Keep container tightly closed in a dry and well-ventilated place.

Storage class (TRGS 510): 13 : Non combustible solids

7.3 Specific end use(s) - no data available

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Ingredients with workplace control parameters

Contains no substances with occupational exposure limit values.

8.2 Exposure controls

Appropriate engineering controls - Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

Eye/face protection - Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection - Handle with gloves. Gloves must be inspected prior to use.

Full contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min
Material tested:KCL 741 Dermatril®
Splash protection
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested: Dermatril®

Body Protection – Choose appropriate body protection. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection – respiratory protection is not required. Dust masks type P1 (EU EN 143) may be used for a higher level of protection. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

- a) Appearance - Form: Powder, Colour: White
 - b) Odour - no data available
 - c) Odour Threshold - no data available
 - d) Melting point/freezing point – Melting point range: 280 - 285 °C
 - e) Initial boiling point and boiling range - no data available
 - f) Flammability (solid, gas) - no data available
 - g) Upper/lower flammability or explosive limits - no data available
 - h) Flash point – not applicable
 - i) Autoignition temperature - no data available
 - j) Decomposition temperature - no data available
 - k) pH - no data available
 - l) Viscosity – viscosity,kinematic: no data available
- viscosity dynamic: no data available
 - m) Water solubility – no data available
 - n) Partition coefficient: no data available
 - o) Vapour pressure - no data available
 - p) Density - no data available
Relative density – no data available
 - q) Relative vapour density - no data available
 - r) Particle characteristics - no data available
 - s) Explosive properties – no data available
 - t) Oxidizing properties - no data available
- 9.2 Other safety information - no data available

10. STABILITY AND REACTIVITY

10.1 Reactivity

In correspondingly fine distribution, when whirled up a dust explosion potential may generally be assumed. **10.2**

Chemical stability

stable under standard storage conditions

10.3 Possibility of hazardous reactions

Violent reactions possible with oxidising agents

10.4 Conditions to avoid

no data available

10.5 Incompatible materials

Strong oxidizing agents

10.6 Hazardous decomposition products

In the event of fire see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity

LD50 Oral – Rat – 2,000 mg/kg

LD50 Intravenous – no data available

Inhalation – Rat – 4h - > 5.17mg/l – dust/mist

(OECD Test Guideline 403)

Dermal – no data available

Skin corrosion/irritation – Rabbit – no skin irritation – 4h

(OECD Test Guideline 404)

Serious eye damage/eye irritation

Eyes – Rabbit – no eye irritation

(OECD Test Guideline 405)

Respiratory or skin sensitization

Local lymph node assay (LLNA) - Mouse Result: negative

(OECD Test Guideline 429)

Germ cell mutagenicity

Test Type: Ames test Test system: *S. typhimurium* Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 471

Result: negative

Test Type: Chromosome aberration test in vitro

Test system: Human lymphocytes Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 473 Result: negative

Test Type: In vitro mammalian cell gene mutation test

Test system: Chinese hamster lung cells Metabolic activation: with and without metabolic activation Method: OECD

Test Guideline 476

Result: negative

Test Type: DNA binding study

Species: Rat

Application Route:

Oral Result: negative

Remarks: (ECHA)

Carcinogenicity

No data available

Reproductive toxicity

No data available

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

11.2 Additional Information

The Food and Drug Administration and the Center for Disease Control have established a link between L-tryptophan and a sometimes fatal blood disorder called eosinophilia-myalgia syndrome which is marked by severe muscle and joint pain, swelling of the arms and legs, skin rash, and sometimes fever. It is characterized by severe eosinophilia, a blood disorder in which the white blood cells increase to an abnormally high level. L-Tryptophan occurs naturally in many foods and investigation has not established whether it or an impurity introduced during manufacture or distribution is the cause.

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Repeated dose toxicity - Rat - male and female - Oral - 90 Days - NOAEL (No observed adverse effect level) - 3,764 mg/kg

12. ECOLOGICAL INFORMATION

12.1 Toxicity – Toxicity to daphnia and other aquatic invertebrates – static test EC50 – *Daphnia magna* (water flea) - > 100mg/l – 48h (OECD Test Guideline 202)

Toxicity to algae – static test erC50 - *Desmodesmus subspicatus* (green algae) - > 84.8 mg/l - 72 h (OECD Test Guideline 201)

12.2 Persistence and degradability – biodegradability - aerobic Chemical oxygen demand - Exposure time 28 d Result: 77 % - Readily biodegradable. (OECD Test Guideline 301B)

12.3 Bio-accumulative potential - no data available

12.4 Mobility in soil - no data available

12.5 Results of PBT and vPvB assessment

This substance/mixture contains no components considered to be either persistent, bio accumulative and toxic (PBT), or very persistent and very bio accumulative (vPvB) at levels of 0.1% or higher.

12.6 Endocrine disrupting properties

No data available

12.7 Other adverse effects

No data available

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product

Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself. Notice Directive on waste 2008/98/EC.

14. TRANSPORT INFORMATION

14.1 UN number

ADR/RID: - IMDG: - IATA: -

14.2 UN proper shipping name

ADR/RID: Not dangerous goods

IMDG: Not dangerous goods

IATA: Not dangerous goods

14.3 Transport hazard class(es)

ADR/RID: - IMDG: - IATA: -

14.4 Packaging group

ADR/RID: - IMDG: - IATA: -

14.5 Environmental hazards

ADR/RID: no IMDG Marine Pollutant: no IATA: no

14.6 Special precautions for user

Further Information

Not classified as dangerous in the meaning of transport regulations

15. REGULATORY INFORMATION

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

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

16. OTHER INFORMATION

Precautionary Statements

P261 Avoid breathing dust

P281 Use personal protective equipment as required.

Further information

WARRANTY

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.

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APPENDIX

ABBREVIATIONS FULL TEXT

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
ALARP As low as is reasonably practicable
CAS Chemical Abstracts Service
CLP Classification, Labelling and Packaging Regulations
COSHH Control of Substances Hazardous to Health EC Number European Community Number
EC50 Effective Concentration 50%
ECHA European Chemicals Agency
ELINCS European List of Notified Chemical Substances
EINECS European Inventory of Existing Commercial Chemical Substances GHS Globally Harmonised System HSE
Health & Safety Executive UK
IATA International Air Transport Association
IM Intramuscular
IMDG The International Maritime Dangerous Goods Code
IP Intraperitoneal
IV Intravascular
LD50 Lethal Dose 50%
LOEC Lowest Observable Effective Concentration
LTEL Long Term Exposure Limit
NOEC No Observable Effective Concentration
OECD Organisation for Economic Cooperations and Development
OSHA European Agency for Safety and Health at work
PBT Persistent Bioaccumulative and Toxic substance
PPE Personal Protective Equipment
REACH Registration, Evaluation, Authorisation and Restriction of Chemicals
RID Regulations Concerning the International Carriage of Dangerous Goods by Rail
SC Subcutaneous
SDS Safety Data Sheet
SIEF Substance Information Exchange Forum
STEL Short Term Exposure Limit
STOT (RE) Specific Target Organ Toxicity – repeated exposure
STOT (SE) Specific Target Organ Toxicity – single exposure
SVHC Substance of Very High Concern
VOC Volatile Organic Compounds
vPvB Very Persistent and Very Bioaccumulative
WEL Workplace Exposure Limits