D-Tryptophan

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

Product Description: D-Tryptophan
Cat No.: A18426
Synonyms: D-Tryptophane.
CAS No: 153-94-6
Molecular Formula: C11 H12 N2 O2
Supplier: Alfa Aesar
Avocado Research Chemicals, Ltd.
Shore Road
Port of Heysham Industrial Park
Heysham, Lancashire LA3 2XY
United Kingdom
Office Tel: +44 (0) 1524 850506
Office Fax: +44 (0) 1524 850608

Emergency Telephone Number: Call Carechem 24 at
+44 (0) 1865 407333 (English only);
+44 (0) 1235 239670 (Multi-language)

E-mail address: uktech@alfa.com
www.alfa.com
Product Safety Department

Recommended Use: Laboratory chemicals.
Uses advised against: No Information available

SECTION 2. HAZARD IDENTIFICATION

Physical State: Powder
Appearance: Solid
Odor: Odorless

Emergency Overview: The product contains no substances which at their given concentration are considered to be hazardous to health.

Classification of the substance or mixture: Based on available data, the classification criteria are not met

Label Elements: None required

Physical and Chemical Hazards: None identified.
Health Hazards: The product contains no substances which at their given concentration are considered to be hazardous to health.
Environmental hazards
Contains no substances known to be hazardous to the environment or not degradable in waste water treatment plants. Will likely be mobile in the environment due to its water solubility. The product is water soluble, and may spread in water systems.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS No</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>D-Tryptophan</td>
<td>153-94-6</td>
<td>&gt; 99</td>
</tr>
</tbody>
</table>

SECTION 4. FIRST AID MEASURES

Eye Contact
Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.

Skin Contact
Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention.

Inhalation
Remove from exposure, lie down. Remove to fresh air. Get medical attention.

Ingestion
Clean mouth with water. Get medical attention.

Most important symptoms and effects
No information available.

Self-Protection of the First Aider
No special precautions required.

Notes to Physician
Treat symptomatically.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media
Water spray. Carbon dioxide (CO$_2$). Dry chemical. Chemical foam.

Extinguishing media which must not be used for safety reasons
No information available.

Specific Hazards Arising from the Chemical
Thermal decomposition can lead to release of irritating gases and vapors.

Protective Equipment and Precautions for Firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions
Ensure adequate ventilation.

Environmental Precautions
See Section 12 for additional Ecological Information.
Methods for Containment and Clean Up
Avoid dust formation. Sweep up and shovel into suitable containers for disposal. Do not let this chemical enter the environment.

Refer to protective measures listed in Sections 8 and 13.

SECTION 7. HANDLING AND STORAGE

Handling
Avoid contact with skin and eyes. Do not breathe dust. Do not ingest. If swallowed then seek immediate medical assistance.

Storage
Keep in a dry, cool and well-ventilated place. Keep container tightly closed.

Specific Use(s)
Use in laboratories

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters

Monitoring methods
BS EN 14042:2003 Title Identifier: Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents. MDHS14/3 General methods for sampling and gravimetric analysis of respirable and inhalable dust

Exposure Controls

Engineering Measures
None under normal use conditions.

Personal protective equipment

<table>
<thead>
<tr>
<th>Eye Protection</th>
<th>Hand Protection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wear safety glasses with side shields (or goggles) (European standard - EN 166)</td>
<td>Protective gloves</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Glove material</th>
<th>Breakthrough time</th>
<th>Glove thickness</th>
<th>EU standard</th>
<th>Glove comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nitrile rubber</td>
<td>See manufacturers recommendations</td>
<td>-</td>
<td>EN 374</td>
<td>(minimum requirement)</td>
</tr>
<tr>
<td>Neoprene</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Natural rubber</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PVC</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Inspect gloves before use.
Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information)
Ensure gloves are suitable for the task: Chemical compatibility, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion.
Remove gloves with care avoiding skin contamination.

Skin and body protection
Wear appropriate protective gloves and clothing to prevent skin exposure

Respiratory Protection
No protective equipment is needed under normal use conditions.

Large scale/emergency use
Use a NIOSH/MSHA or European Standard EN 136 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced

Recommended Filter type: Particle filter
Small scale/Laboratory use: Maintain adequate ventilation.

Hygiene Measures: Handle in accordance with good industrial hygiene and safety practice.

Environmental exposure controls: No information available.

### SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Off-white</td>
</tr>
<tr>
<td>Physical State</td>
<td>Powder Solid</td>
</tr>
<tr>
<td>Odor</td>
<td>Odorless</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>5.1</td>
</tr>
<tr>
<td>Melting Point/Range</td>
<td>282 - 285 °C / 539.6 - 545 °F</td>
</tr>
<tr>
<td>Softening Point</td>
<td>No data available</td>
</tr>
<tr>
<td>Boiling Point/Range</td>
<td>No information available</td>
</tr>
<tr>
<td>Flash Point</td>
<td>No information available</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>Method - No information available</td>
</tr>
<tr>
<td>Flammability (solid,gas)</td>
<td>No information available</td>
</tr>
<tr>
<td>Explosion Limits</td>
<td>No data available</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>No data available</td>
</tr>
<tr>
<td>Vapor Density</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Specific Gravity / Density</td>
<td>No data available</td>
</tr>
<tr>
<td>Bulk Density</td>
<td>No data available</td>
</tr>
<tr>
<td>Water Solubility</td>
<td>11 g/L (20°C)</td>
</tr>
<tr>
<td>Solubility in other solvents</td>
<td>No information available</td>
</tr>
<tr>
<td>Partition Coefficient (n-octanol/water)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Autoignition Temperature</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Decomposition Temperature</td>
<td>&gt; 230°C</td>
</tr>
<tr>
<td>Viscosity</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Explosive Properties</td>
<td>No information available</td>
</tr>
<tr>
<td>Oxidizing Properties</td>
<td>No information available</td>
</tr>
<tr>
<td>Molecular Formula</td>
<td>C11 H12 N2 O2</td>
</tr>
<tr>
<td>Molecular Weight</td>
<td>204.23</td>
</tr>
</tbody>
</table>

### SECTION 10. STABILITY AND REACTIVITY

Stability: Stable under normal conditions.

Hazardous Reactions: No information available.

Hazardous Polymerization: Hazardous polymerization does not occur.

Conditions to Avoid: Avoid dust formation. Incompatible products.

Materials to avoid: Strong oxidizing agents.


### SECTION 11. TOXICOLOGICAL INFORMATION

Product Information: No acute toxicity information is available for this product.

(a) acute toxicity;
(b) skin corrosion/irritation; No data available

(c) serious eye damage/irritation; No data available

(d) respiratory or skin sensitization;
   Respiratory: No data available
   Skin: No data available

(e) germ cell mutagenicity; No data available

(f) carcinogenicity; No data available
   There are no known carcinogenic chemicals in this product

(g) reproductive toxicity; No data available

(h) STOT-single exposure; No data available

(i) STOT-repeated exposure; No data available
   Target Organs: No information available.

(j) aspiration hazard; Not applicable
   Solid

Other Adverse Effects
The toxicological properties have not been fully investigated.

Symptoms / effects, both acute and delayed: No information available

### SECTION 12. ECOLOGICAL INFORMATION

<table>
<thead>
<tr>
<th>Ecotoxicity effects</th>
<th>Do not empty into drains.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Persistence and Degradability</td>
<td></td>
</tr>
<tr>
<td>Persistence</td>
<td>Soluble in water, Persistence is unlikely, based on information available.</td>
</tr>
<tr>
<td>Bioaccumulative Potential</td>
<td>Bioaccumulation is unlikely</td>
</tr>
<tr>
<td>Mobility in soil</td>
<td>The product is water soluble, and may spread in water systems. Will likely be mobile in the environment due to its water solubility. Highly mobile in soils</td>
</tr>
<tr>
<td>Endocrine Disruptor Information</td>
<td></td>
</tr>
<tr>
<td>Persistent Organic Pollutant</td>
<td>This product does not contain any known or suspected endocrine disruptors</td>
</tr>
<tr>
<td>Ozone Depletion Potential</td>
<td>This product does not contain any known or suspected substance</td>
</tr>
</tbody>
</table>

### SECTION 13. DISPOSAL CONSIDERATIONS
Waste from Residues/Unused Products

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

Contaminated Packaging

Empty remaining contents. Dispose of in accordance with local regulations. Do not re-use empty containers.

Other Information

Waste codes should be assigned by the user based on the application for which the product was used.

SECTION 14. TRANSPORT INFORMATION

Road and Rail Transport

Not Regulated

IMDG/IMO

Not regulated

IATA

Not regulated

Special Precautions for User

No special precautions required

SECTION 15. REGULATORY INFORMATION

International Inventories

X = listed, China (IECSC), Europe (EINECS/ELINCS/NLP), U.S.A. (TSCA), Canada (DSL/NDSL), Philippines (PICCS), Japan (ENCS), Japan (ISHL), Australia (AICS), Korea (KECL).

National Regulations

SECTION 16. OTHER INFORMATION

Prepared By
Health, Safety and Environmental Department
Revision Date
15-Jan-2021
Revision Summary
Not applicable.

Training Advice
Chemical hazard awareness training, incorporating labelling, Safety Data Sheets (SDS), Personal Protective Equipment (PPE) and hygiene.

Legend

CAS - Chemical Abstracts Service
EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
Key literature references and sources for data
https://echa.europa.eu/information-on-chemicals
Suppliers safety data sheet, Chemadvisor - LOLI, Merck index, RTECS

Disclaimer

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End of Safety Data Sheet