



WEST BENGAL CHEMICAL INDUSTRIES LIMITED

145/1, Jessore Road, Lake Town,

Kolkata – 700 089, India.

Phone: +9133 4025 1700 Fax: +9133 2574 7410

Email: webcil@wbcil.com

Website: www.wbcil.com

Section 1 - Chemical Product and Company Identification

1.1 Product Name: L-Ornithine L- Aspartate

1.2 Product Code: LOLNL98

1.3 Relevant identified uses of the substance or mixture and uses advised against:

Laboratory chemicals, manufacture of substances

1.4 Company Identification:

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Emergency Telephone No.: +91 9874356081

Section 2 – Hazards Identification

2.1 Classification of the substance or mixture GHS Classification in accordance with 29 CFR 1910 (OSHA HCS):

2.1.1 Hazard Classification

Skin irritation - Category 2

Eye irritation - Category 2A

Specific target organ toxicity - single exposure - Category 3, Respiratory system

2.2 Signal word:

Warning

2.3 Hazard statement(s)

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H335 May cause respiratory irritation.

2.4 Precautionary statement(s):

P261 Avoid breathing dust/fume/gas/mist/vapors/spray.

P264 Wash skin thoroughly after handling.

P271 Use only outdoors or in a well-ventilated area.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P302+P352 IF ON SKIN: Wash with plenty of soap and water.

P304+P340 IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P312 Call a poison center or doctor if you feel unwell.



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Section 2 – Hazards Identification

P321 Specific treatment (see supplemental first aid instructions on this label).

P332+P313 If skin irritation occurs: Get medical advice/attention.

P337+P313 If eye irritation persists: Get medical advice/attention.

P362 Take off contaminated clothing and wash before reuse.

P403+P233 Store in a well-ventilated place. Keep container tightly closed.

P405 Store locked up.

P501 Dispose of contents/container to an approved waste disposal plant.

2.5 Hazards not otherwise classified (HNOC) or not covered by GHS:

None

2.6 Potential Chronic Health Effects:

2.6.1 Carcinogenic effects: Not available.

2.6.2 Mutagenic effects: Not available.

2.6.3 Teratogenic effects: Not available.

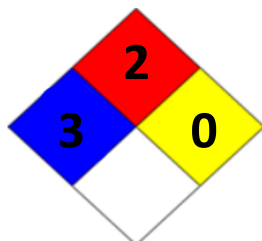
2.6.4 Developmental toxicity: Not available.

Repeated or prolonged exposure is not known to aggravate medical condition.

2.7 Pictogram:



2.8 NFPA Scale:



NFPA SCALE (0-4)



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Section 3 - Composition / Information on Ingredients

3.1 Substances: L-Ornithine L-aspartate salt

3.2 Synonyms: L-Aspartic acid, compd. with L-ornithine (1:1), (S)-2,5-Diaminopentanoic acid L-aspartate salt

3.3 CAS No.: 3230-94-2

3.4 EC no.: 221-772-7

3.5 Molecular Weight 265.26

3.6 Molecular Formula $C_9H_{19}N_3O_6$

Section 4 - First Aid Measures

4.1. Description of first aid measures:

4.1.1 Eye Contact

Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if irritation occurs.

4.1.2 Skin Contact

Wash with soap and water. Cover the irritated skin with an emollient. Get medical attention if irritation develops.

4.1.3 Serious Skin Contact

NA

4.1.4 Inhalation

If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

4.1.5 Ingestion

Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if symptoms appear.

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).

4.3 Indication of any immediate medical attention and special treatment needed:

Treat symptomatically

Section 5 - Fire-Fighting Measures

5.1 Extinguishing Media:

5.1.1 Suitable Extinguishing Media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Large Fire CAUTION: Use of water spray when fighting fire may be inefficient.



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Section 5 - Fire-Fighting Measures

5.1 Extinguishing Media:

5.1.1 Suitable Extinguishing Media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Large Fire CAUTION: Use of water spray when fighting fire may be inefficient.

5.1.2 Unsuitable extinguishing media

Do not scatter spilled material with high pressure water streams

5.2 Flammability of the Product:

May be combustible at high temperature

5.3 Auto-Ignition Temperature:

NA

5.4 Flash points:

NA

5.5 Flammable Limits:

NA

5.6 Products of Combustion:

These products are carbon oxides (CO, CO₂), nitrogen oxides (NO, NO₂...).

5.7 Fire Hazards in Presence of Various Substances:

Slightly flammable to flammable in presence of heat.

5.8 Explosion Hazards in Presence of Various Substances:

5.8.1 Risks of explosion of the product in presence of mechanical impact

Not available.

5.8.2 Risks of explosion of the product in presence of static discharge

Not available.

5.9 Fire Fighting Media and Instructions:

5.9.1 Small fire

Use DRY chemical powder.

5.9.2 Large fire

Use water spray, fog or foam. Do not use water jet.

5.10 Special Remarks on Fire Hazards:

Material in powder form, capable of creating a dust explosion. As with most organic solids, fire is possible at elevated temperatures.

5.11 Special Remarks on Explosion Hazards:

Fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.



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Section 6 - Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures:

Personal precautions Ensure adequate ventilation.

6.1.1 For emergency responders

Use personal protection recommended in Section 8.

6.2 Environmental precautions:

Environmental precautions See Section 12 for additional Ecological Information.

6.3. Methods and material for containment and cleaning up:

6.3.1 Small Spill:

Use appropriate tools to put the spilled solid in a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.

6.3.2 Large spill:

Use a shovel to put the material into a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system

Section 7 - Handling and Storage

7.1. Precautions for safe handling:

Keep away from heat. Keep away from sources of ignition. Ground all equipment containing material. Do not ingest. Do not breathe dust. If ingested, seek medical advice immediately and show the container or the label. Keep away from incompatibles such as oxidizing agents.

7.2. Conditions for safe storage, including any incompatibilities:

Keep container tightly closed. Keep container in a cool, well-ventilated area. Do not store above 8°C(46.4°F).

Section 8 - Exposure Controls / Personal Protection

8.1 Engineering Control:

Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

8.2 Exposure controls

8.2.1 Personal protective equipment

Safety glasses. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent Gloves.

8.2.2 Eye/face protection

Avoid contact with eyes. Wear safety glasses with side shields (or goggles).

8.2.3 Hand protection



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Section 8 - Exposure Controls / Personal Protection

The protective gloves to be used must comply with the specifications of EC Directive 89/686/EEC and the standard EN374. Wear protective nitrile rubber gloves.

Duration of contact	Glove material	Glove thickness	Break through time
Prolonged exposure	Wear protective nitrile rubber gloves	0.11 mm	480 minutes

8.2.4 Skin and body protection

Wear suitable protective clothing.

8.2.5 Respiratory protection

Respiratory protection is not required under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

8.3 Personal Protection in case of Large Spill:

Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self-contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

8.4 Exposure Limits:

NA

8.5 General hygiene considerations:

Avoid contact with skin, eyes, or clothing. Do not eat, drink, or smoke when using this product. Wash hands before breaks and after work. Wear suitable gloves and eye protection.

8.6 Environmental exposure controls:

Do not allow into sewer system, on the ground or into any body of water.

Section 9 - Physical and Chemical Properties

Property	Value
Appearance	: Solid
Odor	: No data available
Odor threshold	: No data available
pH	: No data available
Melting/freezing point	: 198 °C
Boiling point/range	: No data available



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Section 9 - Physical and Chemical Properties

Flash point	:	No data available
Evaporation rate	:	No data available
Flammability (solid, gas)	:	No data available
Upper/lower flammability or explosive limits	:	No data available
Vapor pressure	:	No data available
Vapor density	:	No data available
Relative density	:	No data available
Water solubility	:	mg/mL
Partition coefficient	:	No data available
Auto-ignition temperature	:	No data available
Decomposition temperature	:	No data available
Viscosity	:	No data available
Explosive properties	:	No data available
Oxidizing properties	:	No data available
Other safety information	:	No data available

Section 10 - Stability and Reactivity

10.1 Reactivity:

No information available.

10.2 Stability:

The product is stable.

10.3 Instability Temperature:

Not available.

10.4 Conditions of Instability:

Excess heat, incompatible materials, dust generation

10.5 Incompatibility with various substances:

Strong acids/alkalis, strong oxidising/reducing agents

10.6 Hazardous decomposition products formed under fire conditions:

Carbon oxides, nitrogen oxides (NO_x)

10.7 Corrosivity:

NA

10.8 Special Remarks on Reactivity:

Not available.

10.9 Special Remarks on Corrosivity:

Not available.



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Section 10 - Stability and Reactivity

10.10 Polymerization:

Will not occur.

Section 11 - Toxicological Information

11.1 Routes of Entry:

Inhalation, Ingestion

11.2 Toxicity to Animals:

Acute oral toxicity (LD50): 5000 mg/kg [Mouse].

Subcutaneous-Mouse->5mg/kg; LD50 Oral-Mouse-5mg/kg

11.3 Chronic Effects on Human:

Not available.

11.4 Other Toxic Effects on Human:

Slightly hazardous in case of skin contact (irritant), of ingestion, of inhalation.

11.5 Special remarks on Toxicity to Animals:

NA

11.6 Special Remarks on other Toxic Effects on Humans:

Acute Potential Health Effects:

11.6.1 Skin

May cause skin irritation.

11.6.2 Eyes

May cause eye irritation.

11.6.3 Inhalation

Dust may cause respiratory tract irritation.

11.6.4 Ingestion

Low hazard.

11.7 Carcinogenicity

11.7.1 IARC:

No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

11.7.2 ACGIH:

No component of this product present at levels greater than or equal to 0.1% is identified a a carcinogen or potential carcinogen by ACGIH.

11.7.3 NTP:



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Section 11 - Toxicological Information

No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

11.7.4 OSHA:

No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

11.8 Reproductive toxicity:

Classified based on available data. For more details, see section 2.

11.9 Specific target organ toxicity - single exposure:

Classified based on available data. For more details, see section 2.

11.10 Specific target organ toxicity - repeated exposure:

Classified based on available data. For more details, see section 2.

11.11 Aspiration hazard:

Classified based on available data. For more details, see section 2.

11.12 Additional information:

RTECS No.: Unavailable

This information is based on our current knowledge. However, the chemical, physical, and toxicological properties have not been completely investigated.

Section 12 - Ecological Information

12.1 Ecotoxicity:

Not available.

12.2 BOD5 and COD:

Not available.

12.3 Persistence and degradability:

No information available.

12.4 Bioaccumulation:

No information available

12.5 Mobility in soil:

No information available.

12.6 Products of Biodegradation:

Possibly hazardous short-term degradation products are not likely. However, long term degradation products may arise.

12.7 PBT and vPvB assessment:

This substance is not considered to be persistent, bioaccumulating nor toxic (PBT). This substance is not considered to be very persistent nor very bioaccumulating (vPvB).



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Section 12 - Ecological Information

12.8 Endocrine disrupting properties:

No information available.

12.9 Toxicity of the Products of Biodegradation:

The product itself and its products of degradation are not toxic.

12.10 Special Remarks on the Products of Biodegradation:

Not available

Section 13 - Disposal Considerations

Waste Disposal: Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Section 14 - Transport Information

IATA

14.1 UN number or ID number: Not regulated

14.2 UN proper shipping name: Not regulated

14.3 Transport hazard class(es): Not regulated

14.4 Packing group: Not regulated

14.5 Environmental hazards: Not applicable

14.6 Special precautions for user

Special Provisions: None

IMDG

14.1 UN number or ID number: Not regulated

14.2 UN proper shipping name: Not regulated

14.3 Transport hazard class(es): Not regulated

14.4 Packing group: Not regulated

14.5 Marine pollutant: Not applicable

14.6 Special precautions for user

Special Provisions: No information available

14.7 Maritime transport in bulk according to IMO instruments:

No information available

RID

14.1 UN number or ID number: Not regulated

14.2 UN proper shipping name: Not regulated

14.3 Transport hazard class(es): Not regulated

14.4 Packing group: Not regulated





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Section 14 - Transport Information

14.5 Environmental hazards: Not applicable

14.6 Special precautions for user

Special Provisions: None

ADR

14.1 UN number or ID number: Not regulated

14.2 UN proper shipping name: Not regulated

14.3 Transport hazard class(es): Not regulated

14.4 Packing group: Not regulated

14.5 Environmental hazards: Not applicable

14.6 Special precautions for user

Special Provisions: None

Section 15 - Regulatory Information

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

SARA 302 Components: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components: This material does not contain any chemical components with known CAS numbers that exceed the

threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards: Acute Health Hazard.

Massachusetts Right to Know Components: No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right to Know Components: No components are subject to the Pennsylvania Right to Know Act.

New Jersey Right to Know Components: No components are subject to the New Jersey Right to Know Act.

California Prop. 65 Components: This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

DIRECTIVE (EU) 2021/1187 on the marketing and use of explosives precursors: Not applicable

Persistent Organic Pollutants: Not applicable

Ozone-depleting substances (ODS) regulation (EC) 1005/2009: Not applicable

International Inventories

TSCA Contact supplier for inventory compliance status

DSL/NDSL Contact supplier for inventory compliance status

EINECS/ELINCS Contact supplier for inventory compliance status

ENCS Contact supplier for inventory compliance status

IECSC Contact supplier for inventory compliance status



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Section 15 - Regulatory Information

KECL Contact supplier for inventory compliance status

PICCS Contact supplier for inventory compliance status

AIIC Contact supplier for inventory compliance status

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances

IECSC - China Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

AICS - Australian Inventory of Chemical Substances

15.2. Chemical safety assessment:

Chemical Safety Report A Chemical Safety Assessment is not required for this substance

Section 16 - Other Information

Disclaimer: This material safety data sheet is provided as an information resource only. "WEST BENGAL CHEMICAL INDUSTRIES LIMITED" believes the information contained herein is accurate and compiled from reliable sources. It is the responsibility of the user to verify its validity. The buyer assumes all responsibility of using and handling the product in accordance with federal, State, and local regulations.

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