Shanghai Aladdin Biochemical Technology Co., Ltd.
No. 809, Chuhua Branch Road, Fengxian District, Shanghai

SAFETY DATA SHEET

Version: v1
Revision Date: 2023-08-05
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SECTION 1:Identification of the substance/mixture and of the company/undertaking

1.1 Product identifiers

Product name	: Diethylamine
Product Number	: D110466
Brand	: aladdin
CAS-No.	: 109-89-7

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	: Shanghai Aladdin Biochemical Tech Co.,Ltd
Address	: 36 Xinjinqiao Road, Shanghai
Telephone	: 400-620-6333
Fax	: no data available

1.4 Emergency telephone number

Emergency Phone	: 0532-83889090

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Flammable liquids (Category 2), H225

Acute toxicity, Oral (Category 4), H302

Acute toxicity, Inhalation (Category 4), H332

Acute toxicity, Dermal (Category 3), H311

Skin corrosion (Sub-category 1A), H314

Serious eye damage (Category 1), H318

Specific target organ toxicity - single exposure (Category 3), Respiratory system, H335

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram	
Signal word	Danger
Hazard statement(s)	
H225	Highly Flammable liquid and vapor
H311	Toxic in contact with skin
H314	Causes severe skin burns and eye damage
H335	May cause respiratory irritation
H402	Harmful to aquatic life
H302+H332	Harmful if swallowed or if inhaled
Precautionary statement(s)	
P210	Keep away from heat, hot surface, sparks, open flames and other ignition sources. - No smoking.
P233	Keep container tightly closed.
P240	Ground/bond container and receiving equipment.
P241	Use explosion-proof [electrical/ventilating/lighting/.../] equipment.
P242	Use only non-sparking tools.
P243	Take precautionary measures against static discharge.
P261	Avoid breathing dust/fume/gas/mist/vapors/spray.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P310	Immediately call a POISON CENTER or doctor/physician.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do - continue rinsing.
P370+P378	In case of fire: Use ... to extinguish.
P405	Store locked up.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P501	Dispose of contents/container to an approved waste disposal plant.
P301+P312+P330	IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell. Rinse mouth.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS

SECTION 3: Composition/information on ingredients

3.1 Substances

Synonyms	: N-Ethylethanamine N-ethyl-Ethanamine DEA
Formula	: C4H11N
Molecular weight	: 73.14
CAS No.	: 109-89-7
EC-NO.	: 203-716-3

Component	Classification	Concentration
Diethylamine		
	Flam. Liq. 2; Acute Tox. 4; Acute Tox. 3; Skin Corr. 1A; Eye Dam. 1; STOT SE 3; H225, H302, H332, H311, H314, H318, H335 Concentration limits: >= 1 %: STOT SE 3, H335;	Analytical Reagent,>99.0% (GC)

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice
First aiders need to protect themselves. Show this material safety data sheet to the doctor in attendance.
If inhaled
If breathing stops: immediately apply artificial respiration, if necessary also oxygen.After inhalation: fresh air. Immediately call in physician. If breathing stops: immediately apply artificial respiration, if necessary also oxygen.
In case of skin contact
In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower. Call a physician immediately.
In case of eye contact
After eye contact: rinse out with plenty of water. Immediately call in ophthalmologist. Remove contact lenses.
If swallowed
After swallowing: make victim drink water (two glasses at most), avoid vomiting (risk of perforation). Call a physician immediately. Do not attempt to neutralise.

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

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media
Carbon dioxide (CO2) Foam Dry powder
Unsuitable extinguishing media
no data available

5.2 Special hazards arising from the substance or mixture

Carbon oxides Nitrogen oxides (NOx) Combustible. Pay attention to flashback. Vapors are heavier than air and may spread along floors. Risk of dust explosion. Development of hazardous combustion gases or vapours possible in the event of fire. Forms explosive mixtures with air at ambient temperatures.

5.3 Advice for firefighters

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

5.4 Further information

Remove container from danger zone and cool with water. Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Do not breathe vapors, aerosols. Avoid substance contact. Ensure adequate ventilation. Keep away from heat and sources of ignition. Evacuate the danger area, observe emergency procedures, consult an expert. For personal protection see section 8.

6.2 Environmental precautions

Do not let product enter drains. Risk of explosion.

6.3 Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10).Dispose of properly. Clean up affected area.

6.4 Reference to other sections

For disposal see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Work under hood. Do not inhale substance/mixture. Avoid generation of vapours/aerosols.Flash back possible over considerable distance.Container explosion may occur under fire conditions.Advice on protection against fire and explosion Keep away from open flames, hot surfaces and sources of ignition.Take precautionary measures against static discharge.Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance. For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place. Keep away from heat and sources of ignition. Keep locked up or in an area accessible only to qualified or authorized persons

7.3 Specific end use(s)

no data available

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Component	CAS No.	Value	Control parameters	Basis
Diethylamine	109-89-7	TWA	5ppm	United States. ACGIH Threshold Limit (TLV)
	Note	Cannot be classified as a human carcinogen The skin absorbs hazards		
		STEL	15ppm	United States. ACGIH Threshold Limit (TLV)
		Cannot be classified as a human carcinogen The skin absorbs hazards		
		ST	25 ppm75 mg/m3	United States. The contact limit recommended by NIOSH
		TWA	10 ppm30 mg/m3	United States. The contact limit recommended by NIOSH
		TWA	25 ppm75 mg/m3	United States. Occupational Contact Limits (OSHA) - Table Z-1 Air Pollutant Limits
		C	5 ppm15 mg/m3	Allowable exposure limits for chemical pollutants in California (No 107 Article 8)
		Skin		

8.2 Exposure controls

Appropriate engineering controls

Operate in accordance with industrial health and safety rules of use. Wash your hands before rest and at the end of work.

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). Tightly fitting safety

goggles
Skin protection
Gloves must be checked before use. Remove the gloves in the correct way (do not touch the outer surface of the gloves) and avoid any skin contact with the appliance. After use, carefully operate contaminated gloves in accordance with relevant laws and regulations and effective laboratory procedures and procedures. Clean and blow dry the protective gloves selected for your hands and must comply with the specifications given in Regulation (EU) 2016/425 and the resulting en 374 standard.
Body Protection
Flame retardant antistatic protective clothing.
Respiratory protection
required when vapours/aerosols are generated.
Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.
Recommended Filter type: Filter type AX
The entrepeneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer.
These measures have to be properly documented.
Control of environmental exposure
Do not let product enter drains. Risk of explosion.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

a) Appearance	form: Liquid color: Colorless
b) Odour	no data available
c) Odour Threshold	no data available
d) pH	no data available
e) Melting point/freezing point	-49.8°C
f) Initial boiling point and boiling range	55.9°C
g) Flash point	-23°C
h) Evaporation rate	no data available
i) Flammability (solid, gas)	no data available
j) Upper/lower flammability or explosive limits	no data available
k) Vapour pressure	no data available
l) Vapour density	no data available
m) Relative density	0.704-0.708
n) Water solubility	Dissolved in water, alcohol, ether.
o) Partition coefficient: n-octanol/water	no data available
p) Auto-ignition temperature	no data available
q) Decomposition temperature	no data available
r) Viscosity	no data available

s) Explosive properties N	no data available
t) Oxidizing properties N	no data available

9.2 Other safety information

no data available

SECTION 10: Stability and reactivity

10.1 Reactivity

no data available

10.2 Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .

10.3 Possibility of hazardous reactions

Caution! In contact with nitrites, nitrates, nitrous acid possible liberation of nitrosamines! Exothermic reaction with: nitrites Strong acids Acid anhydrides Alcohols Aldehydes Ketones Esters Halogenated hydrocarbon phenols Mercury Risk of ignition or formation of inflammable gases or vapours with: Oxidizing agents

10.4 Conditions to avoid

Warming.

10.5 Incompatible materials

Aldehydes, Alcohols, Dicyanofurazan, Ketones, phenols, Acids, Halogenated hydrocarbon, Oxidizing agents, Epoxides

10.6 Hazardous decomposition products

In the event of fire: see section 5

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity
LD50 Oral - Rat - male - 540 mg/kg (OECD Test Guideline 401) LC50 Inhalation - Rat - female - 4 h - 17,11 mg/l (OECD Test Guideline 403) LD50 Dermal - Rabbit - male - 582 mg/kg Remarks: (IUCLID) (ECHA)

Skin corrosion/irritation
Skin - Rabbit Result: Causes severe burns. (OECD Test Guideline 404) (Regulation (EC) No 1272/2008, Annex VI)
Serious eye damage/eye irritation
Eyes - Rabbit Result: Causes burns. - 7 Days (Regulation (EC) No. 440/2008, Annex, B.5)
Respiratory or skin sensitisation
no data available
Germ cell mutagenicity
Test Type: Ames test Test system: Salmonella typhimurium Metabolic activation: with and without metabolic

activation Result: negative Remarks: (ECHA) Test Type: In vitro mammalian cell gene mutation test Test system: mouse lymphoma cells Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 476 Result: negative Test Type: Micronucleus test Species: Mouse Application Route: inhalation (vapor) Result: negative Remarks: (ECHA)

Carcinogenicity

no data available

Reproductive toxicity

no data available

Specific target organ toxicity - single exposure

May cause respiratory irritation. Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

Specific target organ toxicity - repeated exposure

no data available

Aspiration hazard

no data available

Additional Information

RTECS: HZ8750000 Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., burning sensation, Cough, wheezing, laryngitis, Shortness of breath, Headache, Nausea, Vomiting, Lachrymation To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

SECTION 12: Ecological information

12.1 Toxicity

Toxicity to fish semi-static test LC50 - Oryzias latipes - 27 mg/l - 96 h (OECD Test Guideline 203) Toxicity to daphnia and other aquatic invertebrates semi-static test LC50 - Ceriodaphnia dubia (water flea) - 4,6 mg/l - 48 h (US-EPA) Toxicity to algae static test EC50 - Pseudokirchneriella subcapitata - 54 mg/l - 72 h (OECD Test Guideline 201) Toxicity to bacteria static test EC10 - activated sludge - > 1.000 mg/l - 30 min (ISO 8192) Remarks: (External MSDS)

12.2 Persistence and degradability

Biodegradability aerobic - Exposure time 28 d Result: 68 - 70 % - Readily biodegradable. (OECD Test Guideline 301C) Theoretical oxygen demand 3.620 mg/g Remarks: (IUCLID)

12.3 Bioaccumulative potential

no data available

12.4 Mobility in soil

no data available

12.5 Results of PBT and vPvB assessment

no data available

12.6 Other adverse effects

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no data available

SECTION 13:

13.1 Disposal considerations

Product

Hand over the remaining and non-recyclable solution to a licensed company.

Contaminated packaging

no data available

SECTION 14: Transport information

DOT (US)

UN number: 1154	Packing group: II	Class: 3 (8)
Proper shipping name: DIETHYLAMINE	Reportable Quantity(RQ): no data available	Poison Inhalation Hazard: no data available
Environmental Hazards: no		

IMDG

UN number: 1154	Packing group: II	EMS-No: no data available
Proper shipping name: DIETHYLAMINE		

IATA

UN number: 1154	Packing group: II	Class: 3 (8)
Proper shipping name: DIETHYLAMINE		

SECTION 15: Regulatory information

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

SECTION 16: Other information

Further information

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