SAFETY DATA SHEET

Version: v1
Revision Date: 2023-07-24
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SECTION 1:Identification of the substance/mixture and of the company/undertaking

1.1 Product identifiers

Product name	:	Morpholine
Product Number	:	M109060
Brand	:	aladdin
CAS-No.	:	110-91-8

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 3), H226

Acute toxicity, Oral (Category 4), H302

Acute toxicity, Inhalation (Category 4), H332

Acute toxicity, Dermal (Category 3), H311

Skin corrosion (Sub-category 1B), H314

Serious eye damage (Category 1), H318

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)	
H226	Flammable liquid and vapor
H311	Toxic in contact with skin
H314	Causes severe skin burns and eye damage
H401	Toxic 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.
P264	Wash hands [and …] thoroughly after handling.
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.
P301+P330+P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303+P361+P353	IF ON SKIN (or hair): Take off Immediately all contaminated clothing. Rinse SKIN with water [or shower].
P304+P340	IF INHALED: Remove person to fresh air and keep 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.
P361+P364	Take off immediately all contaminated clothing and wash it before reuse.
P370+P378	In case of fire: Use ... to extinguish.
P405	Store locked up.
P403+P235	Store in a well-ventilated place. Keep cool.
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	: Tetrahydro-1,4-oxazine 1-oxa-4-azacyclohexane tetrahydro-2h-4-oxazine
Formula	: C4H9NO
Molecular weight	: 87.12
CAS No.	: 110-91-8
EC-NO.	: 203-815-1

Component	Classification	Concentration
Morpholine		
	Flam. Liq. 3; Acute Tox. 4; Acute Tox. 3; Skin Corr. 1B; Eye Dam. 1; H226, H302, H331, H311, H314, H318	analytical standard,≥99.5% (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

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

Water Foam Carbon dioxide (CO2) Dry powder

Unsuitable extinguishing media

no data available

5.2 Special hazards arising from the substance or mixture

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

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.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. Hygroscopic. Storage class (TRGS 510): 3: Flammable liquids

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
Tetrahydro-2H1,4-oxazine	110-91-8	PC-TWA	60 mg/m3	Occupational exposure limits for hazardous factors in the workplace - chemical hazardous factors
	Note	Skin		

8.2 Exposure controls

Appropriate engineering controls

Replace contaminated clothing immediately. Use skin protective lotion. Wash hands and wash your face after using this substance.

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

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Body Protection

Flame retardant antistatic protective clothing.

Respiratory protection

Recommended Filter type: Filter A (acc. to DIN 3181) for vapours of organic compounds

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	-4.76°C
f) Initial boiling point and boiling range	126-130（℃）
g) Flash point	35℃
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	0.996
n) Water solubility	It is miscible with water and can be miscible with most organic solvents.
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

Exothermic reaction with: Strong oxidizing agents Nitriles acids Caution! In contact with nitrites, nitrates, nitrous acid possible liberation of nitrosamines!

10.4 Conditions to avoid

Heating.

10.5 Incompatible materials

Aluminum, nonferrous metals

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 and female - 1.900 mg/kg (OECD Test Guideline 401) Symptoms: If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the esophagus and the stomach. Acute toxicity estimate Inhalation - 4 h - 3,1 mg/l (Expert judgment) LD50 Dermal - Rabbit - male - 500 mg/kg (OECD Test Guideline 402)

Skin corrosion/irritation

Skin - Rabbit Result: Causes burns. - 3 min (OECD Test Guideline 404) Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

Serious eye damage/eye irritation

Eyes - Rabbit Result: Causes serious eye damage. (OECD Test Guideline 405) Causes serious eye damage.

Respiratory or skin sensitisation

Buehler Test - Guinea pig Result: negative Remarks: (IUCLID)

Germ cell mutagenicity
Test Type: Ames test Test system: Escherichia coli/Salmonella typhimurium Metabolic activation: with and without metabolic activation Result: Positive results were obtained in some in vitro tests. Remarks: (ECHA) Test Type: In vitro mammalian cell gene mutation test Test system: Mouse lymphoma test Metabolic activation: Metabolic activation Method: OECD Test Guideline 476 Result: negative Test Type: sister chromatid exchange assay Test system: Chinese hamster ovary cells Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 479 Result: negative Test Type: unscheduled DNA synthesis assay Test system: rat hepatocytes Metabolic activation: without metabolic activation Method: OECD Test Guideline 482 Result: negative Test Type: Micronucleus test Species: Hamster 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

Additional Information
RTECS: QD6475000 Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., Cough, Shortness of breath, Headache, Nausea To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated. After absorption: Toxic effect on: Liver Kidney Under given conditions, contact with nitrites or nitric acid can lead to the formation of nitrosamines, which have shown themselves to be carcinogenic in animal experiments. Other dangerous properties can not be excluded. Handle in accordance with good industrial hygiene and safety practice.

SECTION 12: Ecological information

12.1 Toxicity

Toxicity to fish static test LC50 - Oncorhynchus mykiss (rainbow trout) - 180 mg/l - 96 h Remarks: (in soft water) (Lit.) Toxicity to daphnia and other aquatic invertebrates static test EC50 - Daphnia magna (Water flea) - 44,5 mg/l - 48 h (OECD Test Guideline 202) Toxicity to algae static test ErC50 - Skeletonema costatum - 9 mg/l - 72 h (ISO 10253) Toxicity to bacteria static test EC20 - activated sludge - > 1.000 mg/l - 30 min (OECD Test Guideline 209)

12.2 Persistence and degradability

Biodegradability aerobic - Exposure time 25 d Result: 93 % - Readily biodegradable. (OECD Test Guideline 301E)

12.3 Bioaccumulative potential

Bioaccumulation Cyprinus carpio (Carp) - 42 d at 25 °C - 0,5 mg/l(Tetrahydro-2H-1,4-oxazine) Bioconcentration factor (BCF): < 2,8 (OECD Test Guideline 305C)

12.4 Mobility in soil

no data available

12.5 Results of PBT and vPvB assessment

no data available

12.6 Other adverse effects

Forms corrosive mixtures with water even if diluted. Discharge into the environment must be avoided.

SECTION 13:

13.1 Disposal considerations

Product

Dispose of the remaining and non recyclable solution to a licensed company.

Contaminated packaging

no data available

SECTION 14: Transport information

DOT (US)

UN number: 2054	Packing group: I	Class: 8 (3)
Proper shipping name: MORPHOLINE	Reportable Quantity(RQ): no data available	Poison Inhalation Hazard: no data available
Environmental Hazards: no		

IMDG

UN number: 2054	Packing group: I	EMS-No: no data available
Proper shipping name: MORPHOLINE		

IATA

UN number: 2054	Packing group: I	Class: 8 (3)
Proper shipping name: MORPHOLINE		

SECTION 15: Regulatory information

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

SECTION 16: Other information

Further information

 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. Aladdin Co. Ltd. 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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