

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 : Tetrahydrofuran
Product Number : T103266
Brand : aladdin
CAS-No. : 109-99-9

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 liquid (category 2), H225

Acute toxicity, oral (category 4), H302

Serious eye damage/eye irritation (category 2A), H319

Specific target organ toxicity (single exposure) (category 3), respiratory tract irritation, H335

2.2 GHS Label elements, including precautionary statements

Pictogram



Signal word

Danger

Hazard statement(s)

| | |
|------|-----------------------------------|
| H225 | Highly Flammable liquid and vapor |
| H302 | Harmful if swallowed |
| H319 | Causes serious eye irritation |
| H335 | May cause respiratory irritation |

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. |
| P280 | Wear protective gloves/protective clothing/eye protection/face protection. |
| P303+P361+P353 | IF ON SKIN (or hair): Take off Immediately all contaminated clothing. Rinse SKIN with water [or shower]. |
| P305+P351+P338 | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do - continue rinsing. |
| P337+P313 | IF eye irritation persists: Get medical advice/attention. |
| 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. |
| 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. |

P304+P340+P312

IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor. if you feel unwell.

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

SECTION 3: Composition/information on ingredients

3.1 Substances

| | |
|------------------|---|
| Synonyms | : Tetramethylene oxide Diethylene oxide THF |
| Formula | : C ₄ H ₈ O |
| Molecular weight | : 72.11 |
| CAS No. | : 109-99-9 |
| EC-NO. | : 203-726-8 |

| Component | Classification | Concentration |
|------------------------|---|---|
| Tetrahydrofuran | Flammable liquid category 2; acute toxicity category No 4; serious eye damage/eye irritation Sex category 2A; Carcinogenicity category 2; Special Heterosexual target organ system toxicity (one time Touch) Category 3; H225, H302, H319, H351, H335, H336 | ACS, ≥99.0% (GC), contains 250 ppm BHT as inhibitor |

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice

Show this material safety data sheet to the doctor in attendance.

If inhaled

After inhalation: fresh air.

In case of skin contact

Wash off with soap and plenty of water. Consult a physician.

In case of eye contact

Flush eyes with water as a precaution.

If swallowed

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed

no data available

4.3 Indication of any immediate medical attention and special treatment needed

no data available

SECTION 5: Firefighting measures

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5.1 Extinguishing media

Suitable extinguishing media

no data available

Unsuitable extinguishing media

no data available

5.2 Special hazards arising from the substance or mixture

Carbon oxide

5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information

Use water spray to cool unopened containers.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For personal protection, see section 8.

6.2 Environmental precautions

Do not let product enter drains.

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). Take up dry. Dispose of properly. Clean up affected area. Avoid generation of dusts.

6.4 Reference to other sections

For disposal see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Under Inert Atmosphere, light sensitive

7.3 Specific end use(s)

no data available

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

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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

Eyeface protection

Safety glasses with side-shields conforming to EN166 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. 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. The selected protective gloves have to satisfy the specifications of Regulation (EU) 2016/425 and the standard EN 374 derived from it.

Body Protection

Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a fullface respirator with multi-purpose combination (US) or type

ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face

supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure

If safety requires, prevent further leakage or spillage. Do not let the product enter the sewer.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

| | |
|--|-------------------|
| a) Appearance | no data available |
| b) Odour | no data available |
| c) Odour Threshold | no data available |
| d) pH | no data available |
| e) Melting point/freezing point | -108.5°C |
| f) Initial boiling point and boiling range | 66°C |
| g) Flash point | -17°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 | no data available |
| n) Water solubility | no data available |
| 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

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

no data available

10.4 Conditions to avoid

no data available

10.5 Incompatible materials

Strong oxidant, acid

10.6 Hazardous decomposition products

no data available

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Acute toxicity estimate Oral-1,650 mg/kg

(Calculation method)

LD50 Oral-Rat-Male and Female-1,650 mg/kg

Remarks: (ECHA)

Symptoms: irritation of the mucous membranes

LC50 inhalation-rat-male and female-4 h-> 16.9 mg/l

(US-EPA)

Symptoms: mucosal irritation, cough, shortness of breath, possible damage:, damage to the respiratory tract

LD50 transdermal-rat-male and female-> 2,000 mg/kg

(OECD Test Guideline 402)

Skin corrosion/irritation

Skin-Rabbit Results: No skin irritation-72 h (Draize Test) Repeated or long-term contact can cause skin irritation and dermatitis, because this product has degreasing properties.

Serious eye damage/eye irritation

Eyes-Rabbit Result: Eye irritation Remarks: (ECHA) (European Community (EC) Regulation No. 1272/2008 Annex VI)

Respiratory or skin sensitisation

No mutagenic effects were found in in vivo tests Test type: In vitro mammalian cell gene mutation test Test system: Chinese hamster ovary cells Metabolism activation: with or without metabolic activation Method: OECD Test Guide 476 Result: negative Test type: Ames test Test system: Salmonella typhimurium Metabolism activation: with or without metabolic activation Method: OECD Test Guide 471 Result: negative

Germ cell mutagenicity

no data available

Carcinogenicity

no data available

Reproductive toxicity

no data available

Specific target organ toxicity - single exposure

Inhalation-May cause respiratory irritation. -Respiratory system may cause drowsiness or dizziness. - nervous system

Specific target organ toxicity - repeated exposure

This substance or mixture is not classified as a specific target organ system toxicant and has been repeatedly exposed. Aspiration hazard No aspiration toxicity classification

Aspiration hazard

no data available

Additional Information

Repeated exposure toxicity-rat-male and female-oral-28 d

Remarks: (ECHA)

Registration of Toxic Effects of Chemical Substances: LU5950000

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Central nervous system depression, coughing, chest pain, difficulty breathing, exposure to high concentrations in the air can cause anesthesia.

As far as we know, the chemical, physical and toxic properties have not been fully studied.

At high doses:

Lethargy

anaesthetization

Other dangers cannot be ruled out.

This substance must be handled with special care

SECTION 12: Ecological information

12.1 Toxicity

Toxicity to fish flow-through test LC50-Pimephales promelas (fathead minnow)-2,160 mg/l-96 h

(OECD Test Guideline 203)

No ridge to water flea and other aquatic species

Toxicity of Vertebral Animals

Static test EC50-Daphnia magna (Water flea)-3,485 mg/l-48 h

(OECD Test Guideline 202)

Toxicity to bacteria static test EC20-activated sludge-about 800 mg/l-0.5 h

(OECD Test Guideline 209)

12.2 Persistence and degradability

Aerobic Biochemical Oxygen Demand-Exposure time 28 d Result: 39%-Not easily biodegradable quickly. (OECD Test Guideline 301D)

12.3 Bioaccumulative potential

No bioaccumulation is expected ($\log Pow \leq 4$).

12.4 Mobility in soil

no data available

12.5 Results of PBT and vPvB assessment

no data available

12.6 Other adverse effects

no data available

SECTION 13:

13.1 Disposal considerations

Product

recycle to process, if possible. Consult your local regional authorities and an expert of disposal. You may be able to dissolve or mix material with a combustible solvent and little by little burn in a chemical incinerator equipped with an afterburner and scrubber system. If a large amount of the substance is burned at a time, an explosion may occur. Observe all federal, state and local regulations when disposing of the substance.

Contaminated packaging

Dispose of as unused product.

SECTION 14: Transport information

DOT (US)

UN number: 2056

Packing group: II

Class: 3

Proper shipping name: Tetrahydrofuran
Reportable Quantity(RQ): no data available

Poison Inhalation Hazard: no data available

Environmental Hazards: No

IMDG

UN number: 2056

Packing group: II

EMS-No: no data available

Proper shipping name: Tetrahydrofuran

IATA

UN number: 2056

Packing group: II

Class: 3

Proper shipping name: Tetrahydrofuran

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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