

1. Identification of the substance/preparation and of the company/undertaking**1.1 Identification of the product****Product number:** D3103**Product name:** Diethyl Ether**CAS No.:** 60-29-7**1.2 Recommended use and restriction on use**

General use : for experimental, research and industrial use

Restriction on use : Never drink, Not used except for experimental, research and industrial applications.

1.3 Manufacturer / Supplier / Distributor information**Importer/distributors identification**

Company : ASIA CHEMIE (THAILAND) CO., LTD.

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2. Hazards identification**2.1 GHS Classification**

Flammable liquids : Category1

Acute toxicity (oral) : Category4

Serious eye damage/irritation : Category2A

Specific target organ toxicity(Single exposure) : Category3(Narcotic effects)

Specific target organ toxicity(Single exposure) : Category3(Respiratory tract irritation)

2.2 GHS label elements**Hazard symbols****Signal Word:** Danger**Hazard Statements**

H224 Extremely flammable liquid and vapour

H302 Harmful if swallowed

H319 Causes serious eye irritation

H335 May cause respiratory irritation.

H336 May cause drowsiness and dizziness.

Precautionary Statements

P210 Keep away from heat/sparks/open flames/hot surfaces. 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 gas/mist/vapours/spray.

P264 Wash hands 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.

P301+P312 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.

P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

P304+P340 IF INHALED: Remove victim 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/physician if you feel unwell.

P330 Rinse mouth.

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

P370+P378 In case of fire: Use Suitable extinguishing media for extinction.

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

P403+P235 Store in a well-ventilated place. Keep cool.

P405 Store locked up.

P501 Dispose of contents/container in accordance with local/regional/national/international regulation.

2.3 Other hazards which do not result in classification : (NFPA Classification)

NFPA grade (0 ~ 4 level)

- Health : 1 , Flammability : 4, Reactivity : 1

3. Composition/information on ingredients

Chemical Name	Synonyms	CAS No.	Concentration (%)
1,1'-Oxybisethane	Ethyl ether; 1,1'-Oxybisethane; Ethyl oxide; Diethyl oxide; Diethylether; Ethoxyethane; Ether; 3-Oxapentane; Sulfuric ether;	60-29-7	100

4. First aid measures

4.1 Eye contact

- Do not rub your eyes.
- Immediately flush eyes with plenty of water for at least 15 minutes and call a doctor/physician.
- Get medical attention immediately.
- Go to the hospital immediately if symptoms (flare, irritate) occur.
- Remove contact lenses if worn.

4.2 Skin contact

- Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
- Wash contaminated clothing thoroughly before re-using.
- Get medical attention immediately.

4.3 Inhalation contact

- When exposed to large amounts of steam and mist, move to fresh air.
- Take specific treatment if needed.
- Get medical attention immediately.

4.4 Ingestion contact

- Please be advised by doctor whether induction of vomit is demanded or not.
- Rinse your mouth with water immediately.
- Get medical attention immediately.

4.5 Delayed and immediate effects and also chronic effects from short and long term exposure

- Not available

4.6 Notes to physician

- Notify medical personnel of contaminated situations and have them take appropriate protective measures.

5. Fire-fighting measures

5.1 Suitable (Unsuitable) extinguishing media

- Dry chemical, carbon dioxide, regular foam extinguishing agent, spray.
- Avoid use of water jet for extinguishing.

5.2 Specific hazards arising from the chemical

- Not available

5.3 Special protective actions for firefighters

- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- Notify your local firestation and inform the location of the fire and characteristics hazard.
- In case of conflagration, use automatic fire sprinkler. Major fire may require withdrawal, allowing the object itself to burn.
- Avoid inhalation of materials or combustion by-products.
- Use appropriate extinguishing measure suitable for surrounding fire.
- Keep containers cool with water spray.
- Vapor or gas is burned at distant ignition sources can be spread quickly.
- Due to the extremely low flash point, irrigating fire extinguishing may be less effective when put out a fire.

6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

- Wear proper personal protective apparatus as indicated in Section 8 and avoid skin contact and inhalation.
- Ventilate closed spaces before entering.
- Do not touch spilled material. Stop leak if you can do it without risk.
- Handle the damaged containers or spilled material after wearing appropriate protective equipment.
- Do not direct water at spill or source of leak.

- Avoid skin contact and inhalation.

6.2 Environmental precautions

- Prevent runoff and contact with waterways, drains or sewers.
- If large amounts have been spilled, inform the relevant authorities.

6.3 Methods and materials for containment and cleaning up

- Large spill : Stay upwind and keep out of low areas. Dike for later disposal.
- Notification to central government, local government. When emissions at least of the standard amount
- Dispose of waste in accordance with local regulation.
- Appropriate container for disposal of spilled material collected.
- Small leak: sand or other non-combustible material, please let use absorption.
- Wipe off the solvent.
- Dike for later disposal.
- Do not use plastic containers.

7. Handling and storage

7.1 Precautions for safe handling

- Avoid direct physical contact.
- Since emptied containers retain product residue (vapor, liquid, solid) follow all MSDS and label warnings even after container is emptied.
- Comply with all applicable laws and regulations for handling.
- Dealing only with a well-ventilated place.
- Do not inhale the steam prolonged or repeated.
- Avoid contact with heat, sparks, flame or other ignition sources.
- Handling only authorized person.

7.2 Conditions for safe storage, including any incompatibilities

- Do not apply direct heat.
- Do not apply any physical shock to container.
- Keep in the original container.
- Prevent static electricity and keep away from combustible materials or heat sources.
- Collected them in sealed containers.
- Do not eat, drink or smoke when using this product.
- Store in well ventilated area.

8. Exposure controls/personal protection

8.1 Exposure limits

ACGIH TLV

- [1,1'-Oxybisethane] : TWA, 400 ppm (1210 mg/m³) STEL, 500 ppm (1520 mg/m³)

OSHA PEL

- [1,1'-Oxybisethane]: 400ppm 1200mg/m³

8.2 Engineering controls

- Business owner is recommended to maintain below recommended exposure limits for the working place with general exhaust of gas/vapour/mist/fume.

8.3 Individual protection measures, such as personal protective equipment

Respiratory protection

- Under conditions of frequent use or heavy exposure, Respiratory protection may be needed.
- Respiratory protection is ranked in order from minimum to maximum.
- Consider warning properties before use.
- Any chemical cartridge respirator with organic vapor cartridge(s).
- Any chemical cartridge respirator with a full facepiece and organic vapor cartridge(s).
- Any air-purifying respirator with a full facepiece and an organic vapor canister.
- For Unknown Concentration or Immediately Dangerous to Life or Health : Any supplied-air respirator with full facepiece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply. Any self-contained breathing apparatus with a full facepiece.

Eye protection

- Wear primary eye protection such as splash resistant safety goggles with a secondary protection face shield.
- Provide an emergency eye wash station and quick drench shower in the immediate work area.

Hand protection

- Wear appropriate chemical resistant glove.

Skin protection

- Wear appropriate chemical resistant protective clothing.

Others

- Not available

9. Physical and chemical properties

A. Appearance	
- Appearance	Liquid
- Color	Colorless
B. Odor	sweet odor
C. Odor threshold	Not available
D. pH	Not available
E. Melting point/Freezing point	-116 °C
F. Initial Boiling Point/Boiling Ranges	35 °C
G. Flash point	-45 °C
H. Evaporation rate	Not available
I. Flammability (solid, gas)	Not available
J. Upper/Lower Flammability or explosive limits	48 / 1.7 %
K. Vapour pressure	58.6 kPa (20°C)
L. Solubility	6.9 g/100 ml (20 °C)
M. Vapour density	2.6
N. Specific gravity (Relative density)	0.7
O. Partition coefficient of n-octanol/water	0.89
P. Autoignition temperature	160-180 °C
Q. Decomposition temperature	Not available
R. Viscosity	0.2448 cP (20°C)
S. Molecular weight	74.12
T. Molecular formula	C ₄ H ₁₀ O

10. Stability and reactivity**10.1 Chemical Stability**

- This material is stable under recommended storage and handling conditions.

10.2 Possibility of hazardous reactions

- Contact with other combustible material may cause fire.
- Cylinders exposed to fire may vent and release flammable gas.

10.3 Conditions to avoid

- Avoid contact with incompatible materials and condition
- Avoid : Accumulation of electrostatic charges, Heating, Flames and hot surfaces
- Avoid contact with heat, sparks, flame or other ignition sources.

10.4 Incompatible materials

- Not available

10.5 Hazardous decomposition products

- May emit flammable vapour if involved in fire.

11. Toxicological information**11.1 Information on the likely routes of exposure****Respiratory tracts**

- May cause respiratory irritation.

Oral

- Harmful if swallowed

Eye · Skin

- Causes serious eye damage

11.2 Delayed and immediate effects and also chronic effects from short and long term exposure**Acute toxicity**

- * Oral

- [1,1'-Oxybisethane] : LD50 1200 mg/kg (ECHA)

*** Dermal**

- [1,1'-Oxybisethane] : LD50 > 20000 mg/kg Rabbit (ECHA)

*** Inhalation**

- [1,1'-Oxybisethane] : Steam LC50 32000 ppm 4 hr Rat (ECHA)

Skin corrosion/irritation

- Not available

Serious eye damage/irritation

- Causes serious eye irritation

Respiratory sensitization

- Not available

Skin sensitization

- Not available

Carcinogenicity

*** IARC**

- Not available

*** OSHA**

- Not available

*** ACGIH**

- Not available

*** NTP**

- Not available

*** EU CLP**

- Not available

Germ cell mutagenicity

- Not available

Reproductive toxicity

- Not available

STOT-single exposure

- May cause drowsiness and dizziness.

- May cause respiratory irritation.

STOT-repeated exposure

- Not available

Aspiration hazard

- Not available

12. Ecological information

12.1 Ecotoxicity

Fish

- [1,1'-Oxybisethane]: LC50 2560 mg/l 96 hr (ECHA)

Crustaceans

- [1,1'-Oxybisethane] : LC50 1378.63 mg/l 48 hr (NITE)

Algae

- [1,1'-Oxybisethane]: EC50>100 mg/l 72 hr (ECHA)

12.2 Persistence and degradability

Persistence

- [1,1'-Oxybisethane] : log Kow 0.89 (ICSC)

Degradability

- Not available

12.3 Bioaccumulative potential

Bioaccumulative potential

- Not available

Biodegradation

- Not available

12.4 Mobility in soil

Not available

12.5 Other adverse effects

Not available

13. Disposal considerations

13.1 Disposal methods

- Stabilization and minimization treatment by incineration or similar method can be applied, if more than two kinds of designated wastes are in mixture state and it is impractical to separate them.
- Oil water separation technology shall be applied as pre-waste treatment if it is applicable.
- It shall be treated by incineration.
- Will be pre-processed by the separation of oil and water.

13.2 Special precautions for disposal

- Anyone with business license number who generates industrial wastes shall treat the waste by him/herself or by entrusting to the legal entities who treat the wastes, recycle the wastes of others or install and operate the waste treatment facilities according to the Wastes Control Act.
- Dispose of waste in accordance with all applicable laws and regulations.

14. Transport information**14.1 UN No. (IMDG CODE/IATA DGR)**

- 1155

14.2 Proper shipping name

- DIETHYL ETHER OR ETHYL ETHER

14.3 Hazard Class

- 3

14.4 IMDG CODE/IATA DGR Packing group

- I

14.5 Marine pollutant

- Not applicable

14.6 Special precautions for user related to transport or transportation measures

- Local transport follows in accordance with Dangerous goods Safety Management Law.
- Package and transport follow in accordance with Department of Transportation (DOT) and other regulatory agency requirements.
- EmS FIRE SCHEDULE : F-E (Non-water-reactive flammable liquids)
- EmS SPILLAGE SCHEDULE : S-D (Flammable liquids)

15. Regulatory information**15.1 National and/or international regulatory information****POPs Management Law**

- Not applicable

Information of EU Classification*** Classification**

- [1,1'-Oxybisethane] : H224, H302, H336

U.S. Federal regulations*** OSHA PROCESS SAFETY (29CFR1910.119)**

- Not applicable

*** CERCLA Section 103 (40CFR302.4)**

- [1,1'-Oxybisethane] : 45.3599 kg 100 lb

*** EPCRA Section 302 (40CFR355.30)**

- Not applicable

*** EPCRA Section 304 (40CFR355.40)**

- Not applicable

*** EPCRA Section 313 (40CFR372.65)**

- Not applicable

Rotterdam Convention listed ingredients

- Not applicable

Stockholm Convention listed ingredients

- Not applicable

Montreal Protocol listed ingredients

- Not applicable

16. Other information

Reason for the revision: General update.

Date: 16/10/2014

Revision 5

Date: 05/01/2024

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