

Safety Data Sheet(SDS)

Revision Date : 01-06-2026

1. Identification

- 1) Product identifier : HIGH_PURITY_ETHYLENE_CARBOONATE
- 2) Relevant identified uses of the substance or mixture and uses advised against
 - Relevant identified uses
 - Restrictions on use
 - Use for recommended use only
 - Do not use it for weapons manufacturing and related purposes.
- 3) Supplier information
 - Seller
 - Company name : Lotte Daesan Petrochem Corporation
 - Address : 82 Dokgot 1-ro, Daesan-eup, Seosan-si, Chungcheongnam-do
 - Telephone number : +82-41-689-5114
 - Emergency phone number : (Control Room) +82-41-689-5119
 - Fax number : +82-41-689-5985

2. Hazards identification

- 1) Hazard classification
 - Acute toxicity(Oral) Category 4
 - Serious eye damage/eye irritation Category 2
 - Specific target organ toxicity repeated exposure Category 2

2) Allocation label elements

Hazard pictograms



Signal word

- WARNING

Hazard statements

H302 Harmful if swallowed

H319 Causes serious eye irritation

H373 May cause damage to organs through prolonged or repeated exposure

Precautionary statements

- Prevention

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

P264 Wash ... thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

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

- Response

P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/doctor/...

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

P314 Get medical advice/attention if you feel unwell.

P330 Rinse mouth.

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

- Disposal

P501 Dispose of contents/container to ...

3) Other hazards:

According to experience and information provided, this product does not affect harmful effects when using and handling it as a regulation.

3. Composition/Information on ingredients

Chemical name	Common name	CAS No.	Content(wt%)
1,3-Dioxolan-2-one	ethylene carbonate	96-49-1	100

4. First-aid measures

1) Following eye contact

In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.

Seek immediate medical assistance.

2) Following skin contact

For minor skin contact, avoid spreading material on unaffected skin.

In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.

Remove and isolate contaminated clothing and shoes.

Seek immediate medical assistance.

3) Following inhalation

Administer oxygen if breathing is difficult.

Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.

Give artificial respiration if victim is not breathing.

Keep victim warm and quiet.

Move to fresh air.

4) Following ingestion

Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.

Seek immediate medical assistance.

5) Delayed and immediate effects and also chronic effects from short and long term exposure

Causes serious eye irritation

Harmful if swallowed

May cause damage to organs through prolonged or repeated exposure

6) Advice to physician

Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

5. Fire-Fighting measures

1) Suitable (and unsuitable) extinguishing media

- Suitable extinguishing media

CO₂.

Use alcohol foam, carbon dioxide, or water spray when fighting fires involving this material.

Dry chemical.

Use dry sand or earth to smother fire.

Water spray.

- Unsuitable extinguishing media

Direct water.

2) Special hazards arising from the substance or mixture

- Pyrolytic product

Can decompose at high temperatures forming toxic gases.

Non-combustible, substance itself does not burn but may decompose upon heating to produce corrosive and/or toxic fumes.

During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.

- Risk of fire and explosion

Containers may explode when heated.

Some may burn but none ignite readily.

- Other

May cause toxic effects if inhaled.

3) Special protective equipment for firefighters

Substance may be transported in a molten form.

Dike fire-control water for later disposal; do not scatter the material.

Evacuate area and fight fire from a safe distance.

Fire involving Tanks: ALWAYS stay away from tanks engulfed in fire.

Fire involving Tanks: Cool containers with flooding quantities of water until well after fire is out.

Fire involving Tanks: Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.

Fire involving Tanks: For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn.

Fire involving Tanks: Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.

Move containers from fire area if you can do it without risk.

Rescuers should put on appropriate protective gear.

6. Accident release measures

1) Personal precautions, protective equipment and emergency procedures

Clean up spills immediately, observing precautions in Protective Equipment section.

Cover with plastic sheet to prevent spreading.

Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.

ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).

Please note that materials and conditions to be avoided.

Stop leak if you can do it without risk.

2) Environmental precautions

Prevent entry into waterways, sewers, basements or confined areas.

3) Methods and materials for containment and cleaning up

Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers.

Absorb spill with inert material (e.g., dry sand or earth), then place in a chemical waste container.

Absorb the liquid and scrub the area with detergent and water.

7. Handling and storage

1) Precautions for safe handling

Follow all MSDS/label precautions even after container is emptied because they may retain product residues.

Handling refer to engineering control/personal protection section.

Please note that materials and conditions to be avoided.

2) Conditions for safe storage (including any incompatibilities)

Empty drums should be completely drained, properly bunged, and promptly returned to a drum reconditioner, or properly disposed of.

Keep away from food and drinking water.

8. Exposure controls & personal protection

1) Chemical exposure limits, Biological exposure standard

- Contains no substances with occupational exposure limit values.

2) Appropriate engineering controls

Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.

3) Personal protective equipment

- o Respiratory protection

If you have a direct contact or exposed to the material, wear the appropriate form of respiratory protection certified.

- Eye protection

If the work environment or activity involves dusty conditions, mists or aerosols, wear the appropriate goggles.

- Hand protection

Wear chemical safety gloves.

- Skin protection

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

9. Physical and chemical information

Property name	Values	Source
Appearance		
Physical state	solid	Solid(20°C), Liquid(40°C) / HSDB
Color	colourless	HSDB
Odor	odourless	HSDB
Odor threshold	No data available	
pH	No data available	
Melting point/freezing point	35.5 °C	OECD Test Guideline 102
Initial boiling point and boiling range(°C)	254°C	OECD Test Guideline 103
Flash point(°C)	166°C	ASTM D3828
Evaporation rate	No data available	
Flammability(solid, gas)	No data available	
Upper/lower flammability or explosive limits	No data available	
Vapour pressure	15Pa (20°C), 22Pa (25°C)	OECD Test Guideline 104
Solubility(ies)	549 g/L (20°C)	OECD Test Guideline 105
Vapour density	3.04	HSDB
Relative density	No data available	
n-octanol/water partition coefficient	-0.340 (Log Kow)	HSDB
Auto ignition temperature	No data available	

Decomposition temperature	No data available	
Viscosity(mm ² /s, 40°C)	1.45mm ² /s	ASTM D445 (40°C)
Molecular weight(mass)	88.06 g/mol	HSDB
Density	1.319 g/cm ³ (40°C)	KS M 0004
Specific gravity	1.3292(40/40°C)	Calculated Value

10. Stability and hazardous reactivity

1) Chemical stability and Possibility of hazardous reactions

Can decompose at high temperatures forming toxic gases.

Containers may explode when heated.

Fire may produce irritating, corrosive and/or toxic gases.

Non-combustible, substance itself does not burn but may decompose upon heating to produce corrosive and/or toxic fumes.

Some may burn but none ignite readily.

2) Conditions to avoid

Ignition source(heat, spark, flame, etc.).

3) Incompatible materials

Combustibles, reducing material.

4) Hazardous decomposition products

Corrosive/toxic fume.

During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.

Irritating, corrosive and/or toxic gas.

11. Toxicological information

1) Information on the likely routes of exposure

- No data available

2) Delayed and immediate effects and also chronic effects from short and long term exposure

○ Acute toxicity

● Acute toxicity(Oral)

- Category 4 ※Source: ECHA

- Acute toxicity(Dermal)
 - LD50 >3000 mg/kg Test species: Rabbit
- Acute toxicity(Inhalation:Gases)
 - No data available
- Acute toxicity(Inhalation:Vapours)
 - No data available
- Acute toxicity(Inhalation:Dust/mist)
 - No data available
- Skin corrosion/irritation
 - Results of the rabbit open draize test indicate mild irritation.
- Serious eye damage/eye irritation
 - Moderate irritation (grade 5 on a scale of 1 to 8) (rabbit). Classified as a reversible eye effect.
- Respiratory sensitization
 - No data available
- Skin sensitization
 - No data available
- Carcinogenicity
 - No data available
- Germ cell mutagenicity
 - Negative microbial mutation test result
- Reproductive toxicity
 - No data available
- Specific target organ toxicity single exposure
 - No data available
- Specific target organ toxicity repeated exposure
 - NOAEL (28 days, oral) = 300 mg/kg bw/day (male) 1,000 mg/kg bw/day (female) (rat)
 - NOAEL (12 months, oral) = 150 mg/kg bw/day (rat) (Similar substance test data) Kidney stones were observed when repeatedly administered to rats.
- Aspiration hazard
 - No data available

12. Ecological information

1) Ecotoxicity

- Hazardous to the aquatic environment, short-term (acute)
No data available
- Hazardous to the aquatic environment, long-term (chronic)
No data available
- Fish
LC50 238.065 mg/l 96 hr
- Crustaceans
LC50 9423.147 mg/l 48 hr
- Aquatic algae
EC50 17.388 mg/l 96 hr

2) Persistence and degradability

- Degradability
No data available
- Biodegradation
No data available

3) Bioaccumulative potential

- n-octanol water partition coefficient
-0.340 log Kow
- Bioconcentration factor(BCF)
3.2

4) Mobility in soil

9.2

5) Other adverse effects

No data available

13. Disposal considerations

1) Disposal methods

Empty containers should be taken to an approved waste handling site for recycling or disposal.

2) Precautions (including disposal of contaminated container of package)

Dispose of in accordance with local regulations.

Send to a licensed waste management company.

14. Transport information

- 1) UN No. : Not applicable
 - 2) Proper shipping name : Not applicable
 - 3) Hazard class : Not applicable
 - 4) Packing group : Not applicable
 - 5) Marine pollutant : Not applicable
 - 6) Special precautions for user related to transport or transportation measures :
 - Emergency measures in case of fire : Not applicable
 - Emergency measures in the effluent : Not applicable
- ADR
 - Tunnel restriction code : Not applicable
 - IMDG
 - Marine pollutant : Not applicable
 - Air transport(IATA)
 - UN No. : Not applicable
 - Proper shipping name : Not applicable
 - Class or division : Not applicable
 - Packing group : Not applicable
 - Maritime transport in bulk according to IMO instruments :
 - Not applicable

15. Regulatory information

Australia Industrial Chemicals Notification and Assessment Act

- Inventory - Australia - Inventory of Industrial Chemicals (AIIC)
 - 1,3-Dioxolan-2-one : Applicable

China Inventory of Existing Chemical Substances (IECSC)

- Inventory - China - Inventory of Existing Chemical Substances (IECSC)
 - 1,3-Dioxolan-2-one : Applicable

92/32/EEC

- Not applicable

European Union Official Journal of the European Communities 15 June 1990 - Annex Based on Article 13 of Directive 67/548/EEC Amended by Directive 79/831/EEC

- Inventory - European Union - European Inventory of Existing Commercial Chemical Substances (EINECS)

- 1,3-Dioxolan-2-one : Applicable

Japan - ISHL Enforcement Order Notifiable Substances

Japan - ISHL Ordinance Notifiable Substances

Japan - ISHL Enforcement Order Hazardous Substances Whose Names Are to be Indicated on the Label

- Not applicable

Japan - ISHL Ordinance Hazardous Substances Whose Names Are to be Indicated on the Label

- Not applicable

Japan Law Concerning the Examination and Regulations of Manufacture, etc. of Chemical Substances

- Inventory - Japan - Existing and New Chemical Substances (ENCS)

- 1,3-Dioxolan-2-one : Applicable

New Zealand Environmental Protection Authority, Inventory of Chemicals

- Inventory - New Zealand - Inventory of Chemicals (NZIoC)

- 1,3-Dioxolan-2-one : Applicable

Turkey Regulation on Inventory and Control of Chemicals

- Not applicable

Taiwan Chemical Substance Inventory

- Inventory - Taiwan - Taiwan Chemical Substance Inventory (TCSI)

- 1,3-Dioxolan-2-one : Applicable

U.S. Toxic Substances Control Act

- Inventory - United States - Section 8(b) Inventory (TSCA)

- 1,3-Dioxolan-2-one : Applicable

Vietnam National Chemicals Inventory (NCI)

- Not applicable

Note

- Not applicable

16. Other information

1) Reference

NCIS, KOSHA, Montreal Protocol, ECHA, OECD SIDS, EU IUCLID, HSDB(PubChem), NITE, NTP, ACGIH, IARC, NIOSH, ChemIDplus, EPA, EPI Suite, INCHEM

2) Issue date : 29-01-2024

3) Revision date

○ Revised date count : 3-1

○ Last revised date : 01-06-2026

4) Other

ACGIH : American Conference of Governmental Industrial Hygienists

ADR : Agreement Concerning the International Carriage of Dangerous Goods by Road

ATE : The Acute Toxicity Estimate

ECHA : European Chemicals Agency

EPA : United States Environmental Protection Agency

EPI Suite : The Estimation Programs Interface for Windows

EU IUCLID : International Uniform Chemical Information Database

HSDB : Hazardous Substances Data Bank

IARC : International Agency for Research on Cancer

IATA : International Air Transport Association

IMDG : International Maritime Dangerous Goods Codes

INCHEM : Internationally Peer Reviewed Chemical Safety Information

M-Factor : The Multiplication Factor

NIOSH : National Institute of Occupational Safety and Health

NITE : National Institute of Technology and Evaluation(JAPAN)

NTP : National Toxicology Program

SCL : Specific Concentration Limit

OECD SIDS : Organization for Economic Co-operation and Development Screening Information Dataset

GHS/EN