

Safety Data Sheet(SDS)

Last revised date : 01-06-2026

1. Identification

- 1) Product identifier : HIGH_PURITY_DI_ETHYL_CARBONATE
- 2) Relevant identified uses of the substance or mixture and uses advised against
 - Relevant identified uses
 - 1.Raw materials and intermediates, Solvent and extraction agents, Electrolytes for batteries
 - 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
 - Flammable liquids Category 3
 - Skin corrosion/irritation Category 2
 - Serious eye damage/eye irritation Category 2
 - Reproductive toxicity Category 2

- 2) Allocation label elements

Hazard pictograms



Signal word

- WARNING

Hazard statements

H226 Flammable liquid and vapour

H315 Causes skin irritation

H319 Causes serious eye irritation

H361 Suspected of damaging fertility or the unborn child if inhaled.

Precautionary statements

- Prevention

P201 Obtain special instructions before use.

P202 Do not handle until all safety precautions have been read and understood.

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P233 Keep container tightly closed.

P240 Ground and bond container and receiving equipment.

P241 Use only explosion-proof electrical, ventilating, lighting and equipment.

P242 Use nonsparking tools.

P243 Take action to prevent static discharges.

P264 Avoid contact during pregnancy/ while nursing.

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

- Response

P302+P352 IF ON SKIN: Wash with plenty of soap and water.

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.

P308+P313 If exposed or concerned: Get medical advice/attention.

P320 Specific treatment is urgent (see supplemental instructions on the administration of antidotes on this label).

P332+P313 If skin irritation occurs: Get medical advice/attention.

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

P362+P364 Take off contaminated clothing and wash it before reuse.

P370+P378 In case of fire: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide to extinguish.

- Storage

P403+P235 Store in a wellventilated place. Keep cool.

P405 Store locked up.

- Disposal

P501 Discard the contents/containers in accordance with the laws and laws related to waste.

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%)
Carbonic acid diethyl ester	Diethyl carbonate, Ethyl carbonate, Diethyl cacbonate	105-58-8	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 hot product, immediately immerse in or flush the affected area with large amounts of cold water to dissipate heat.

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

In case of burns, immediately cool affected skin for as long as possible with cold water. Do not remove clothing if adhering to 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.

Wash skin with soap and water.

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.

Seek immediate medical assistance.

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

Causes skin irritation

Suspected of damaging fertility or the unborn child

6) Advice to physician

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

Exposures require specialized first aid with contact and medical follow-up .

5. Fire-Fighting measures

1) Suitable (and unsuitable) extinguishing media

o Suitable extinguishing media

For mixtures containing alcohol or polar solvent: Alcohol-resistant foam.

CO₂.

Regular foam.

Dry chemical.

Water spray.

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

Use dry sand or earth to smother fire.

- Unsuitable extinguishing media

Direct water.

2) Special hazards arising from the substance or mixture

- Pyrolytic product

No data available

- Risk of fire and explosion

Can form explosive mixtures at temperatures at or above the flashpoint.

Containers may explode when heated.

HIGHLY FLAMMABLE: Will be easily ignited by heat, sparks or flames.

Runoff may create fire or explosion hazard.

Some may burn but none ignite readily.

Vapor explosion hazard indoors, outdoors or in sewers.

Vapors may form explosive mixtures with air.

Vapors may travel to source of ignition and flash back.

When heated, vapors may form explosive mixtures with air: indoors, outdoors and sewers explosion hazards.

- Other

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

Vapors may cause dizziness or asphyxiation without warning.

Inhalation or contact with material may irritate or burn skin and eyes.

3) Special protective equipment for firefighters

Most vapors are heavier than air. They will spread along ground and collect in low or confined areas (sewers, basements, tanks).

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

Rescuers should put on appropriate protective gear.

Substance may be transported hot.

Substance may be transported in a molten form.

Cautions ; Most of liquids are lighter than water.

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: Do not direct water at source of leak or safety devices; icing may occur.

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.

6. Accident release measures

1) Personal precautions, protective equipment and emergency procedures

The very fine particles can cause a fire or explosion, eliminate all ignition sources.

A vapor suppressing foam may be used to reduce vapors.

All equipment used when handling the product must be grounded.

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.

Do not touch or walk through spilled material.

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.

Runoff may cause pollution.

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.

Dike and collect water used to fight fire.

Large Spill: Dike far ahead of liquid spill for later disposal.

Use clean non-sparking tools to collect absorbed material.

7. Handling and storage

1) Precautions for safe handling

Measure atmospheric oxygen concentration and ventilate the area during the operation since low-closed area can cause oxygen deficiency.

Please note that materials and conditions to be avoided.

Use care in handling/storage.

All equipment used when handling the product must be grounded.

Avoid breathing vapors from heated material.

Avoid prolonged or repeated contact with skin.

Caution: Heat.

Do not enter storage area unless adequately ventilated.

DO NOT PRESSURIZE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION;.

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

Handling refer to engineering control/personal protection section.

Loosen closure cautiously before opening.

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.

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

- 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	liquid	ICSC
Color	colourless	ICSC
Odor	characteristic	
Odor threshold	No data available	
pH	No data available	
Melting point/freezing point	< -60 °C	OECD Test Guideline 102
Initial boiling point and boiling range(°C)	128°C	OECD Test Guideline 103
Flash point(°C)	31°C	ASTM D3828
Evaporation rate	No data available	
Flammability(solid, gas)	No data available	
Upper/lower flammability or explosive limits	Upper Explosive Limit : 11.0 / Lower Explosive Limit : 1.4 %	ICSC
Vapour pressure	1200 Pa (20°C), 1600 Pa (25°C)	OECD Test Guideline 104
Solubility(ies)	1.36g/L (20°C)	OECD Test Guideline 105

Vapour density	4.1	KOSHA
Relative density	1.0	KOSHA
n-octanol/water partition coefficient	1.21 (Log Kow)	KOSHA
Auto ignition temperature	445 °C	KOSHA
Decomposition temperature	No data available	
Viscosity(mm ² /s, 40°C)	0.826 mm ² /s (20°C)	ASTM D445
Molecular weight(mass)	118.15 g/mol	KOSHA
Density	0.967 g/cm ³ (25°C)	KS M 0004
Specific gravity	0.97 (25°C)	Calculated Value

10. Stability and hazardous reactivity

1) Chemical stability and Possibility of hazardous reactions

Can decompose at high temperatures forming toxic gases.

Can form explosive mixtures at temperatures at or above the flashpoint.

Containers may explode when heated.

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

HIGHLY FLAMMABLE: Will be easily ignited by heat, sparks or flames.

Inhalation or contact with material may irritate or burn skin and eyes.

Runoff may create fire or explosion hazard.

Some may burn but none ignite readily.

Vapor explosion hazard indoors, outdoors or in sewers.

Vapors may cause dizziness or asphyxiation without warning.

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When heated, vapors may form explosive mixtures with air: indoors, outdoors and sewers explosion hazards.

2) Conditions to avoid

Heat, contamination.

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

☐ Skin Contact

Liquids can be exposed through the eyes, skin and oral.

☐ Eye Contact

Liquids can be exposed through the eyes, skin and oral.

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

☐ Acute toxicity

• Acute toxicity(Oral)

- LD50 15000 mg/kg Test species: Rat

• Acute toxicity(Dermal)

- No data available

• Acute toxicity(Inhalation:Gases)

- No data available

• Acute toxicity(Inhalation:Vapours)

- Rat LC50> 17.75 mg/L (males), 18.30 mg/L (females)/ 4hr (ECHA)

• Acute toxicity(Inhalation:Dust/mist)

- No data available

☐ Skin corrosion/irritation

- skin irritation

☐ Serious eye damage/eye irritation

- Eye irritation (THOMSON).

☐ Respiratory sensitization

- No data available
- Skin sensitization
 - No data available
- Carcinogenicity
 - No data available
- Germ cell mutagenicity
 - No data available
- Reproductive toxicity
 - Limited evidence/fetal teratogenicity in animals
- Specific target organ toxicity single exposure
 - No data available
- Specific target organ toxicity repeated exposure
 - not tested
- 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 46.738 mg/L 96 hr
- Crustaceans
LC50 481.032 mg/L 48 hr
- Aquatic algae
EC50 3.616 mg/L 96 hr

2) Persistence and degradability

- Degradability
No data available

- Biodegradation
No data available

3) Bioaccumulative potential

- n-octanol water partition coefficient
1.21 log Kow

- Bioconcentration factor(BCF)
2

4) Mobility in soil

No data available

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 or package)

Dispose of in accordance with local regulations.

Send to a licensed waste management company.

14. Transport information

1) UN No. : 2366

2) Proper shipping name : DIETHYL CARBONATE

3) Hazard class : 3

4) Packing group : III

5) Marine pollutant : Not applicable

6) Special precautions for user related to transport or transportation measures :

Emergency measures in case of fire : F-E

Emergency measures in the effluent : S-D

- ADR

· Tunnel restriction code : D/E

- IMDG

· Marine pollutant : Not applicable

- Air transport(IATA)

· UN No. : 2366

- Proper shipping name : DIETHYL CARBONATE
 - Class or division : 3
 - Packing group : III
- Maritime transport in bulk according to IMO instruments :
- IBC03

15. Regulatory information

Australia Industrial Chemicals Notification and Assessment Act

- Inventory - Australia - Inventory of Industrial Chemicals (AIIC)
- Carbonic acid diethyl ester : Present

China Inventory of Existing Chemical Substances (IECSC)

- Inventory - China - Inventory of Existing Chemical Substances (IECSC)
- Carbonic acid diethyl ester : Present [34087]

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)
- Carbonic acid diethyl ester : 203-311-1

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

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

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

- Inventory - Japan - Existing and New Chemical Substances (ENCS)
- Carbonic acid diethyl ester : (2)-1699

New Zealand Environmental Protection Authority, Inventory of Chemicals

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

- Carbonic acid diethyl ester : HSNO Approval: HSR001081

Turkey Regulation on Inventory and Control of Chemicals

- Not applicable

Taiwan Chemical Substance Inventory

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

- Carbonic acid diethyl ester : Present

U.S. Toxic Substances Control Act

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

- Carbonic acid diethyl ester : Present (ACTIVE)

Vietnam National Chemicals Inventory (NCI)

- 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 : 10-01-2024

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