

Safety Data Sheet(SDS)

Revision Date : 01-06-2026

1. Identification

- 1) Product identifier : HIGH_PURITY_DI_METHYL_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 2
 - Reproductive toxicity Category 2

- 2) Allocation label elements

Hazard pictograms



Signal word

- DANGER

Hazard statements

H225 Highly flammable liquid and vapour

H361 Suspected of damaging fertility or the unborn child in contact with skin.

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.

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

- Response

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

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

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%)
Dimethyl carbonate	dimethyl carbonate	616-38-6	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
Suspected of damaging fertility or the unborn child

6) Advice to physician

Effects of contact or inhalation may be delayed.

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

- Suitable extinguishing media

Dry chemical.

Regular foam.

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

CO₂.

Use dry sand or earth to smother fire.

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

Water spray.

- 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.

- o Other

May cause toxic effects if inhaled or absorbed through skin.

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

3) Special protective equipment for firefighters

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: 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.

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

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

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.

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.

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

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

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	5 °C	OECD Test Guideline 102
Initial boiling point and boiling range(°C)	90°C	OECD Test Guideline 103
Flash point(°C)	15°C	ASTM D3828
Evaporation rate	No data available	
Flammability(solid, gas)	No data available	
Upper/lower flammability or explosive limits	Upper Explosive Limit : 12.9%(V) /Lower Explosive Limit : 4.2 %(V)	ICSC
Vapour pressure	6200 Pa (20°C), 7800 Pa (25°C)	OECD Test Guideline 104
Solubility(ies)	126 g/L (20°C)	OECD Test Guideline 105
Vapour density	3.1	KOSHA
Relative density	1.0633 (25°C)	ECHA
n-octanol/water partition coefficient	0.354 (20°C)(Log Kow)	ECHA
Auto ignition temperature	458 °C	KOSHA
Decomposition temperature	No data available	
Viscosity(mm²/s, 40°C)	0.585 mm²/s (20°C, kinematic viscosity)	ASTM D445
Molecular weight(mass)	90.09 g/mol	KOSHA
Density	1.061 g/cm³ (25°C)	KS M 0004
Specific gravity	1.064 (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.

May cause toxic effects if inhaled or absorbed through skin.

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.

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.

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.

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

○ Acute toxicity

● Acute toxicity(Oral)

- LD50 >5,000 mg/kg Test species: Rat

● Acute toxicity(Dermal)

- LD50 >2,000 mg/kg Experimental species: Rabbit

● Acute toxicity(Inhalation:Gases)

- No data available

● Acute toxicity(Inhalation:Vapours)

- LC50 >5.36 mg/l 4 hr Species: Rat

● Acute toxicity(Inhalation:Dust/mist)

- No data available
- Skin corrosion/irritation
 - non-irritating (rabbit)
- Serious eye damage/eye irritation
 - mild stimulus (rabbit)
- Respiratory sensitization
 - No data available
- Skin sensitization
 - Skin, in vivo (non-LLNA) skin irritation test, non-irritation
- Carcinogenicity
 - No data available
- Germ cell mutagenicity
 - No data available
- Reproductive toxicity
 - As a result of developmental toxicity test in which 300~3000ppm was inhaled and exposed during organogenesis of mice, the high dose of 3000ppm suppressed the weight gain of the mother animal, decreased feed intake, and increased the loss of embryonic embryos due to increased absorption, cleft palate, microtia, A significant increase in the total incidence of fetal malformations, including multiple cranial malformations. In other words, it is classified as category 2 because it has an effect on reproduction and development of offspring at a dose that exhibits general toxicity, such as suppression of weight gain in the mother animal, and an especially serious effect, which increases the frequency of fetal malformations.
- Specific target organ toxicity single exposure
 - No data available
- Specific target organ toxicity repeated exposure
 - Results of 28-day (subacute) repeated inhalation toxicity test using F344 rats: Increased AST, ALP, APTT, and PT levels in blood and blood biochemical test results, Target organ: liver, NOEL >600 ppm-F344 rats 90-day (subchronic) repeated inhalation toxicity test used: No toxicological effects were observed up to an exposure concentration of 4000 ppm during repeated systemic inhalation exposure for 13 weeks, so the NOAEL, which is a non-toxic concentration, was judged to be over 4000 ppm. not
- 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
No data available
- Crustaceans
No data available
- Aquatic algae
No data available

2) Persistence and degradability

- Degradability
No data available
- Biodegradation
No data available

3) Bioaccumulative potential

- n-octanol water partition coefficient
0.354 log Kow (20°C)
- Bioconcentration factor(BCF)
No data available

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 of package)

Dispose of in accordance with local regulations.

Send to a licensed waste management company.

14. Transport information

- 1) UN No. : 1161
- 2) Proper shipping name : DIMETHYL CARBONATE
- 3) Hazard class : 3
- 4) Packing group : II
- 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. : 1161
 - Proper shipping name : DIMETHYL CARBONATE
 - Class or division : 3
 - Packing group : II
- Maritime transport in bulk according to IMO instruments :
 - IBC02

15. Regulatory information

Australia Industrial Chemicals Notification and Assessment Act

- Inventory - Australia - Inventory of Industrial Chemicals (AIIC)
 - Dimethyl carbonate : Present

China Inventory of Existing Chemical Substances (IECSC)

- Inventory - China - Inventory of Existing Chemical Substances (IECSC)
 - Dimethyl carbonate : Present [34064]

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)

- Dimethyl carbonate : 210-478-4

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)

- Dimethyl carbonate : (2)-2853

New Zealand Environmental Protection Authority, Inventory of Chemicals

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

- Dimethyl carbonate : HSNO Approval: HSR001252

Turkey Regulation on Inventory and Control of Chemicals

- Not applicable

Taiwan Chemical Substance Inventory

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

- Dimethyl carbonate : Present

U.S. Toxic Substances Control Act

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

- Dimethyl carbonate : Present (ACTIVE)

Vietnam National Chemicals Inventory (NCI)

- Inventory - Vietnam - National Chemicals Inventory (NCI) (DRAFT)

- Dimethyl carbonate : Present 04939

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 : 09-01-2024

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