

Safety Data Sheet(SDS)

Revision date : 01-06-2026

1. Identification

- 1) Product identifier : DEG_DI_ETHYLENE_GLYCOL
- 2) Relevant identified uses of the substance or mixture and uses advised against
 - Relevant identified uses
 - 1.Raw materials and intermediates
 - 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
 - Reproductive toxicity Category 2
 - Specific target organ toxicity repeated exposure Category 1

2) Allocation label elements

Hazard pictograms



Signal word

- DANGER

Hazard statements

H361 Suspected of damaging fertility or the unborn child

H372 Causes damage to organs through prolonged or repeated exposure

Precautionary statements

- Prevention

P201 Obtain special instructions before use.

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

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

P264 Avoid contact during pregnancy/ while nursing.

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

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

- Response

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

P314 Get medical advice/attention if you feel unwell.

- Storage

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%)
Diethylene glycol	2,2'-oxydiethanol	111-46-6	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 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 damage to organs through prolonged or repeated exposure
 - 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
- Suitable extinguishing media
 - Use alcohol foam, carbon dioxide, or water spray when fighting fires involving this material.
 - CO₂.
 - Use dry sand or earth to smother fire.
 - Dry chemical.
 - 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.
 - 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).
 - Isolate hazard area.
 - Keep unnecessary and unprotected personnel from entering.
 - 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
 - Avoid breathing vapors from heated material.
 - Do not enter storage area unless adequately ventilated.
 - 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.
 - Please note that materials and conditions to be avoided.
 - Use care in handling/storage.
- 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

- 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	Odorless	
Odor threshold	No data available	
pH	No data available	
Melting point/freezing point	-6.5 °C	ICSC
Initial boiling point and boiling range(°C)	244 °C	ECHA
Flash point(°C)	138 °C (1,013.25 hPa)	ECHA
Evaporation rate	< 0.001(Butyl acetate= 1)	KOSHA
Flammability(solid, gas)	non-naturally flammable	ECHA
Upper/lower flammability or explosive limits	Upper 12.2 %(V) Lower 1.8 %(V)	KOSHA
Vapour pressure	0.008 hPa (25 °C)	ECHA
Solubility(ies)	1,000 g/L (20 °C)	ECHA
Vapour density	3.66 (Air = 1.0)	KOSHA

Relative density	No data available	
n-octanol/water partition coefficient	logPow : -1.98	ECHA
Auto ignition temperature	372 °C (101,325 Pa)	ECHA
Decomposition temperature	No data available	
Viscosity(mm ² /s, 40°C)	30 cP(25°C)	ECHA
Molecular weight(mass)	106.12 g/mol	
Density	1.118 g/cm ³ (20 °C)	ECHA
Specific gravity	1.118	

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.
- 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 12565 mg / kg experimental species: Rat
 - Acute toxicity(Dermal)
 - LD50 11890 mg / kg experimental 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
 - Mild (500mg, rabbit)
- Serious eye damage/eye irritation
 - Mild (50mg, rabbit)
- Respiratory sensitization
 - No data available
- Skin sensitization
 - No data available
- Carcinogenicity
 - No data available
- Germ cell mutagenicity
 - No data available
- Reproductive toxicity
 - Use the mouse to have been born in a decrease in the number of times the second-generation reproduction test by the revelation of the past, as well as breeding duyeop facial deformities observed (DFGOT vol.10 (1998)). These effects are weight loss of mother animals appeared in capacity, mortality observed in hamsters, namely, clear reproductive toxicity at doses that toxicity to the parent animals expression
- Specific target organ toxicity single exposure
 - No data available
- Specific target organ toxicity repeated exposure
 - As characteristic findings caused by repeated oral exposure in the rat calcium oxalate crystals in the urine excretion increased with the oxalic acid is formed in renal impairment (nepeuroje) observed (DFGOT vol.10 (1998)). Exposure is also included technical part of it reaches the long-term bladder stones also are mild while observing the liver than in the kidney (PATTY (5th, 2001)). However, these effects are both limits of the range of the reference value (100 mg / kg / day) in excess. On the other hand, the number of people killed

numerous epidemiological studies have been carried out with respect to exposure of the material eg, by the progressive kidney failure and renal failure Finally, some report is reported to the liver (DFGOT vol.10 (1998)).

- 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 32000 mg / ℓ 96 hr
- Crustaceans
No data available
- Aquatic algae
No data available

2) Persistence and degradability

- Degradability
No data available
- Biodegradation
31 (%) 28 day ((aerobic, other bacteria: waste water, not adapted))

3) Bioaccumulative potential

- n-octanol water partition coefficient
-1.47 log Kow (estimated)
- Bioconcentration factor(BCF)
100 3 ((Leuciscus idus melanotus (Fish, fresh water), 0.05mg / l))

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. : Not applicable
 - 2) Proper shipping name : Not applicable
 - 3) Hazard class : Not applicable
 - 4) Packing group : Not applicable
 - 5) Marine pollutant : No
 - 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 : No data available
 - IMDG
 - Marine pollutant : No
 - Air transport(IATA)
 - UN No. : Not applicable
 - Proper shipping name : Not applicable
 - Class or division : Not applicable
 - Packing group : Not applicable

15. Regulatory information

Australia Industrial Chemicals Notification and Assessment Act

- Inventory - Australia - Inventory of Industrial Chemicals (AIIC)
- Diethylene glycol : Present

China Inventory of Existing Chemical Substances (IECSC)

- Inventory - China - Inventory of Existing Chemical Substances (IECSC)
- Diethylene glycol : Present [07877]

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)
- Diethylene glycol : 203-872-2

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)
- Diethylene glycol : (2)-415, (2)-2979

New Zealand Environmental Protection Authority, Inventory of Chemicals

- Inventory - New Zealand - Inventory of Chemicals (NZIoC)
- Diethylene glycol : HSNO Approval: HSR002709

Turkey Regulation on Inventory and Control of Chemicals

- Not applicable

Taiwan Chemical Substance Inventory

- Inventory - Taiwan - Taiwan Chemical Substance Inventory (TCSI)
- Diethylene glycol : Present

U.S. Toxic Substances Control Act

Vietnam National Chemicals Inventory (NCI)

- Inventory - Vietnam - National Chemicals Inventory (NCI) (DRAFT)
- Diethylene glycol : Present 02087

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 : 26-12-2022

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