

# Safety Data Sheet(SDS)

According to Regulation (EU) No. 2020/878

Version : 3-1

Revision date : 01-06-2026

## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### 1.1. Product identifier

Product identifier : DEG\_DI\_ETHYLENE\_GLYCOL

Other means of identification : No data

### 1.2. Relevant identified uses of the substance or mixture and uses advised against

#### ○ Relevant identified uses

1.Raw materials and intermediates

#### ○ Uses advised against

Use for recommended use only

Do not use it for weapons manufacturing and related purposes.

### 1.3. Details of the supplier of the safety data sheet

#### ○ Seller

Company name : Lotte Daesan Petrochem Corporation

Address : 82 Dokgot 1-ro, Daesan-eup, Seosan-si, Chungcheongnam-do

Telephone number : +82-41-689-5114

Fax number : +82-41-689-5985

Email : [www.ldpc.co.kr](http://www.ldpc.co.kr) (contact)

### 1.4. Emergency telephone number

Emergency phone number : (Control Room) +82-41-689-5119

Opening hours : 08:30~17:30 (GMT+9)

Other comments(e.g. language(s) of the phone service) : English

## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

- Acute toxicity(Oral) Category 4

### 2.2. Label elements

Hazard pictograms



Signal word

- WARNING

Hazard statements

H302 Harmful if swallowed

Precautionary statements

- Prevention

P264 Avoid contact during pregnancy/ while nursing.

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

- Response

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

P330 Rinse mouth.

- Disposal

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

2.3. Other hazards

- No data available

## SECTION 3: Composition/information on ingredients

3.1. Substances

Substance name	1) CAS No 2) EC No	Classification	1) Index number 2) SCL 3) M-Factor 4) ATE	Content(wt%)
Diethylene glycol	1) 111-46-6 2) 203-872-2	Acute Tox. 4	1) - 2) - 3) - 4) Acute toxicity(Oral) : 12565mg/kg, Acute toxicity(Dermal) : 11890mg/kg	100

3.2. Mixtures

Not applicable

## SECTION 4: First aid measures

4.1. Description of first aid measures

○ 4.1.1. 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.

○ 4.1.2. Skin contact

- For minor skin contact, avoid spreading material on unaffected skin.
- Remove and isolate contaminated clothing and shoes.
- In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.

- Seek immediate medical assistance.
- 4.1.3. Inhalation
  - Administer oxygen if breathing is difficult.
  - Keep victim warm and quiet.
  - 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.
  - Move to fresh air.
- 4.1.4. If swallowed
  - 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.
- 4.2. Most important symptoms and effects, both acute and delayed
  - No data available
- 4.3. Indication of any immediate medical attention and special treatment needed
  - Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

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## SECTION 5: Firefighting measures

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### 5.1. Extinguishing media

- Suitable extinguishing media
  - Dry chemical.
  - CO<sub>2</sub>.
  - Use alcohol foam, carbon dioxide, or water spray when fighting fires involving this material.
  - Direct water.
  - Use dry sand or earth to smother fire.
  - Water spray.
- Unsuitable extinguishing media
  - Do not use a solid water stream as it may scatter and spread fire.

### 5.2. Special hazards arising from the substance or mixture

- Containers may explode when heated.
- 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.

### 5.3. Advice for firefighters

- 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.
- Substance may be transported in a molten form.

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

#### 6.1.1. For non-emergency personnel

- Protective equipment
  - The wearing of suitable protective equipment to prevent any contamination of skin, eyes and personal clothing.
- Emergency procedures
  - Removal of ignition sources, provision of sufficient ventilation.

#### 6.1.2. For emergency responders

- Wear protective equipment and keep unprotected persons away.
- Avoid dust formation.

### 6.2. Environmental precautions

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

### 6.3. Methods and material for containment and cleaning up

#### 6.3.1. For containment

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

#### 6.3.2. For cleaning up

- Clear spills immediately.
- Don't use a brush or compressed air for cleaning surfaces or clothing.

#### 6.3.3. Other information

- Absorb the liquid and scrub the area with detergent and water.
- Absorb spill with inert material (e.g., dry sand or earth), then place in a chemical waste container.

### 6.4. Reference to other sections

- Section 8 (protective equipment), section 13 (disposal instructions)

## SECTION 7: Handling and storage

### 7.1. 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.

### 7.2. 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.

### 7.3. Specific end use(s)

- See section 1 for recommended use.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

- Contains no substances with occupational exposure limit values.

### 8.2. Exposure controls

#### 8.2.1. Appropriate engineering controls

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

#### 8.2.2. Individual protection measures, such as personal protective equipment

- Eye/face protection
  - If the work environment or activity involves dusty conditions, mists or aerosols, wear the appropriate goggles.
- Skin protection
  - (i) Hand protection
    - Wear chemical safety gloves.
  - (ii) Other
    - No data available
- Respiratory protection
  - If you have a direct contact or exposed to the material, wear the appropriate form of respiratory protection certified.
- Thermal hazards
  - Wear protective gloves/ protective clothing/ eye protection/ face protection/ hearing protection.

#### 8.2.3. Environmental exposure controls

- Ensure not to cause environmental pollution by discharging into rivers or other waterways.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Property name	Values	Source
Physical state	Liquid	ICSC
Colour	colourless	ICSC
Odour	Odorless	
Melting point/freezing point	-6.5 °C	ICSC
Initial boiling point and boiling range(°C)	244 °C	ECHA
Flammability(solid, gas)	non-naturally flammable	ECHA
Upper/lower flammability or explosive limits	Upper 12.2 %(V) Lower 1.8 %(V)	KOSHA
Flash point(°C)	138 °C (1,013.25 hPa)	ECHA
Auto ignition temperature	372 °C (101,325 Pa)	ECHA
Decomposition temperature	No data available	
pH	No data available	
Kinematic viscosity(mm <sup>2</sup> /s, 40°C)	30 cP(25°C)	ECHA
Solubility	1,000 g/L (20 °C)	ECHA

Partition coefficient(n-octanol/water)	logPow : -1.98	ECHA
Vapour pressure	0.008 hPa (25 °C)	ECHA
Density/Relative density	No data available	
Relative Vapour density	3.66(Air = 1.0)	
Particle characteristics	Not applicable	
Specific gravity	1.118	

## 9.2. Other information

### 9.2.1. Information with regard to physical hazard classes

- No data available

### 9.2.2. Other safety characteristics

- No data available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

- 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.

### 10.2. Chemical stability

- 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.

### 10.3. Possibility of hazardous reactions

- 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.

### 10.4. Conditions to avoid

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

### 10.5. Incompatible materials

- Combustibles, reducing material.

### 10.6. Hazardous decomposition products

- Corrosive/toxic fume.

- Irritating, corrosive and/or toxic gas.

## SECTION 11: Toxicological information

### 11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

- Acute toxicity
  - Acute toxicity(Oral)
    - EU-CLP Classifications (Category 4 : 500mg/kg)
    - LD50 12565 mg/kg Test species: Rat
  - Acute toxicity(Dermal)
    - LD50 11890 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
  - Mild stimulation (500mg, rabbit)
- Serious eye damage/eye irritation
  - Mild irritation (50mg, rabbit)
- Respiratory sensitization
  - No data available
- Skin sensitization
  - No data available
- Carcinogenicity
  - No data available
- Germ cell mutagenicity
  - No data available
- Reproductive toxicity
  - In a second-generation reproduction test by exposure prior to mating using mice, a decrease in the number of litters and head-lobe facial deformities were observed (DFGOT vol.10 (1998)). At the dose at which this effect was observed, weight loss in the maternal animal and death in hamsters were observed, i.e., clear reproductive toxicity at the dose at which general toxicity to the parental animal occurred.
- Specific target organ toxicity single exposure
  - No data available
- Specific target organ toxicity repeated exposure
  - As a characteristic finding by repeated oral exposure in rats, renal impairment (nephrose) was observed due to the formation of calcium oxalate crystals in the urine along with increased excretion of oxalic acid (DFGOT vol.10 (1998)). When exposure reaches long-term exposure, bladder stones are also observed, and some descriptions of hepatic injury are included, although mild compared to kidney (PATTY (5th, 2001)).

However, both of these effects exceed the limit value of the reference range (100 mg/kg/day). On the other hand, in humans, a number of epidemiological investigations have been conducted regarding the exposure of the substance, and many cases of death, progressive renal failure and eventually renal failure, and some reports of liver failure have been reported (DFGOT vol.10 (1998)).

- Aspiration hazard
  - No data available

## 11.2. Information on other hazards

### 11.2.1. Endocrine disrupting properties

- Diethylene glycol
  - Not applicable

### 11.2.2. Other information

- Diethylene glycol
  - No other hazards have been identified

## SECTION 12: Ecological information

### 12.1. Toxicity

- Fish
  - LC50 32000 mg/L 96 hr
- Crustaceans
  - No data available
- Aquatic algae
  - No data available

### 12.2. Persistence and degradability

- Degradability
  - No data available
- Biodegradation
  - 31 (%) 28 day ((aerobic, other bacteria: Abwasser, nicht adaptiert))

### 12.3. Bioaccumulative potential

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

### 12.4. Mobility in soil

No data available

### 12.5. Result of PBT and vPvB assessment

Not applicable

### 12.6. Endocrine disrupting properties

Not applicable

### 12.7. Other adverse effects

Not applicable

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

#### 13.1.1. Product / Packaging disposal

- Empty containers should be taken to an approved waste handling site for recycling or disposal.
- o Waste codes / waste designations according to LoW
  - No data available

#### 13.1.2. Waste treatment-relevant information

- Disposal according to local regulations.

#### 13.1.3. Sewage disposal-relevant information

- Disposal according to local regulations and avoid release to the environment.

#### 13.1.4. Other disposal recommendations

- No data available

## SECTION 14: Transport information

14.1. UN number or ID number : Not applicable

14.2. UN proper shipping name : Not applicable

14.3. Transport hazard class(es) : Not applicable

14.4. Packing group : Not applicable

14.5. Environmental hazards : No

14.6. Special precautions for user :

Emergency measures in case of fire : Not applicable

Emergency measures in the effluent : Not applicable

14.7. Maritime transport in bulk according to IMO instruments :

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

## SECTION 15: Regulatory information

### 15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

#### 15.1.1. EU regulations

- EU - REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous Substances
  - Diethylene glycol : Use restricted. See item 75.
- EU - REACH (1907/2006) - Annex XIV - Substances Subject to Authorization
  - Diethylene glycol : Not applicable

#### 15.1.2. Other EU regulations

- EU - Persistent Organic Pollutants (POPs) (2019/1021) - Annex III - Substances Subject to Release Reduction Provisions
  - Not applicable
- EU - Persistent Organic Pollutants (POPs) (2019/1021) - Annex I - Substances Subject to Prohibitions
  - Not applicable
- EU - Persistent Organic Pollutants (POPs) (2019/1021) - Annex IV - Waste Management - Concentration Limits
  - Not applicable
- EU - Persistent Organic Pollutants (POPs) (2019/1021) - Annex V - Waste Management - Maximum Concentration Limits
  - Not applicable
- EU - Paints, Varnishes, Vehicle Refinishing Products (2004/42/CE) - Annex II A - WB Phase 1 - VOCs
  - Not applicable
- EU - Paints, Varnishes, Vehicle Refinishing Products (2004/42/CE) - Annex II A - WB Phase 2 - VOCs
  - Not applicable
- EU - Paints, Varnishes, Vehicle Refinishing Products (2004/42/CE) - Annex II B - Vehicles - VOCs
  - Not applicable
- EU - Paints, Varnishes, Vehicle Refinishing Products (2004/42/CE) - Annex II A - SB Phase 1 - VOCs
  - Not applicable
- EU - Paints, Varnishes, Vehicle Refinishing Products (2004/42/CE) - Annex II A - SB Phase 2 - VOCs
  - Not applicable
- EU - Seveso III Directive (2012/18/EU) - Qualifying Quantities of Dangerous Substances - Lower-Tier Requirements
  - Not applicable
- EU - Seveso III Directive (2012/18/EU) - Qualifying Quantities of Dangerous Substances - Higher-Tier Requirements
  - Not applicable
- EU - Export and Import Restrictions (649/2012) - Chemicals Subject to Export Notification Procedure
  - Not applicable

- EU - Export and Import Restrictions (649/2012) - Chemicals and Articles Subject to Export Ban
  - Not applicable
- EU - Export and Import Restrictions (649/2012) - Chemicals Subject to the PIC Procedure under the Rotterdam Convention
  - Not applicable
- EU - Export and Import Restrictions (649/2012) - Chemicals Qualifying for PIC Notification
  - Not applicable

## 15.2. Chemical safety assessment

- A Chemical Safety Assessment has been carried out.

## SECTION 16: Other information

### 16.1. Key literature references and sources for data

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

### 16.2. Issuing date : 26-12-2022

### 16.3. Indication of changes

- Revision number : 3-1
- Revision date : 01-06-2026

### 16.4. Abbreviations and acronyms

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

For explanation of abbreviations see section 16.

- This substance/mixture contain(s) only ingredients which have been registered, or are exempt from registration, according to Regulation (EC) No. 1907/2006 (REACH).

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at

the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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