

Safety Data Sheet(SDS)

Revision date : 01-06-2026

1. Identification

- 1) Product identifier : BDG_BUTYL_DIGLYCOL_ETHER
- 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
 - Serious eye damage/eye irritation Category 2

- 2) Allocation label elements

Hazard pictograms



Signal word

- WARNING

Hazard statements

H319 Causes serious eye irritation

Precautionary statements

- Prevention

P264 Avoid contact during pregnancy/ while nursing.

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

- Response

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

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

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%)
2-(2-Butoxyethoxy)ethanol	diethylene glycol monobutyl ether	112-34-5	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.
- Give artificial respiration if victim is not breathing.
- Keep victim warm and quiet.
- Move to fresh air.

4) Following ingestion

- Seek immediate medical assistance.

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

- Causes serious eye irritation

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

8. Exposure controls & personal protection

- 1) Chemical exposure limits, Biological exposure standard

Components	ACGIH regulations	Biological limit values
2-(2-Butoxyethoxy)ethanol	10 ppm TWA (inhalable fraction and vapor)	No data available

- 2) Appropriate engineering controls
 - Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.
- 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	
Color	colourless	
Odor	slight smell	
Odor threshold	No data available	
pH	about 7.0	
Melting point/freezing point	-66 °C (1013.25 hPa)	
Initial boiling point and boiling range(°C)	231 °C (1013.25 hPa)	
Flash point(°C)	113 °C (1,013 hPa)	Lab Test
Evaporation rate	< 1.0 (Butyl acetate= 1)	
Flammability(solid, gas)	No data available	
Upper/lower flammability or explosive limits	Upper 24.6 %(V) Lower 0.85 %(V)	
Vapour pressure	0.0291 hPa (25 °C)	
Solubility(ies)	Soluble, miscible with most organic solvents 955 g/L (20 °C)	
Vapour density	5.6	
Relative density	No data available	
n-octanol/water partition coefficient	logPow : about 1.0 (20 °C)	
Auto ignition temperature	210 °C (101.325 kPa)	
Decomposition temperature	No data available	
Viscosity(mm ² /s, 40°C)	6.806 mm ² /s	
Molecular weight(mass)	162.23g/mol	
Density	955.3 kg/m ³ (20 °C)	
Specific gravity	0.9553 (20 °C)	

10. Stability and hazardous reactivity

- 1) Chemical stability and 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.
- 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
 - 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 5660 mg/kg Test species: Rat
 - Acute toxicity(Dermal)
 - LD50 2700 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
 - Non-irritant (rabbit)
 - Serious eye damage/eye irritation
 - Moderate irritation (20 mg, 24 hours, rabbit), severe irritation (20 mg, rabbit) EHCA harmonized classification category 2

- Moderate irritation (20 mg, 24 hours, rabbit), severe irritation (20 mg, rabbit) EHCA harmonized classification category 2

- Respiratory sensitization
 - No data available
- Skin sensitization
 - No data available
- Carcinogenicity
 - No data available
- Germ cell mutagenicity
 - No data available
- Reproductive toxicity
 - No data available
- Specific target organ toxicity single exposure
 - No data available
- Specific target organ toxicity repeated exposure
 - No data available
- 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 1300 mg/l 96 hr
- Crustaceans
No data available
- Aquatic algae
No data available

2) Persistence and degradability

- Degradability
BOD5/COD 0.12
- Biodegradation
58 (%) 28 day ((aerobic, activated sludge, easily decomposed))

3) Bioaccumulative potential

- n-octanol water partition coefficient
No data available
 - 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. : 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)
- 2-(2-Butoxyethoxy)ethanol : Applicable

China Inventory of Existing Chemical Substances (IECSC)

- Inventory - China - Inventory of Existing Chemical Substances (IECSC)
- 2-(2-Butoxyethoxy)ethanol : 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)
- 2-(2-Butoxyethoxy)ethanol : Applicable

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)
- 2-(2-Butoxyethoxy)ethanol : Applicable

New Zealand Environmental Protection Authority, Inventory of Chemicals

- Inventory - New Zealand - Inventory of Chemicals (NZIoC)
- 2-(2-Butoxyethoxy)ethanol : Applicable

Turkey Regulation on Inventory and Control of Chemicals

- Not applicable

Taiwan Chemical Substance Inventory

- Inventory - Taiwan - Taiwan Chemical Substance Inventory (TCSI)
- 2-(2-Butoxyethoxy)ethanol : Applicable

U.S. Toxic Substances Control Act

- Inventory - United States - Section 8(b) Inventory (TSCA)
- 2-(2-Butoxyethoxy)ethanol : Applicable

Vietnam National Chemicals Inventory (NCI)

- Inventory - Vietnam - National Chemicals Inventory (NCI) (DRAFT)
- 2-(2-Butoxyethoxy)ethanol : 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 : 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