Safety Data Sheet(SDS)

Revision date : 01-06-2026

1. Identification

1) Product identifier : BTG_BUTYL_TRIGLYCOL_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 1

2) Allocation label elements

Hazard pictograms

Signal word

- DANGER

Hazard statements

H318 Causes serious eye damage

Precautionary statements

- Prevention

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

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.

P310 Immediately call a POISON CENTER / toxins center / physician.

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%)
Triethylene glycol monobutyl ether	Triglycol Monobutyl Ether	143-22-6	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.
- 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 damage

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 dry sand or earth to smother fire.
- Dry chemical.
- CO2.
- 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

- Non-combustible, substance itself does not burn but may decompose upon heating to produce corrosive and/or toxic fumes.
- During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.

○ 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

   - Contains no substances with occupational exposure limit values.

2) Appropriate engineering controls
   - Ensure adequate ventilation and exhaust ventilation at the workplace.

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	7	
Melting point/freezing point	-35.2 ℃	
Initial boiling point and boiling range(℃)	278℃	
Flash point(℃)	145℃	
Evaporation rate	No data available	
Flammability(solid, gas)	No data available	
Upper/lower flammability or explosive limits	Upper 3.8 %(V) Lower 0.8 %(V)	
Vapour pressure	0.004 hPa (25 ℃)	
Solubility(ies)	1,000 g/L (25 ℃), Miscible with most organic solvents	
Vapour density	7.1 (Air = 1.0)	
Relative density	No data available	
n-octanol/water partition coefficient	logPow : 0.02	
Auto ignition temperature	202 ℃	
Decomposition temperature	No data available	
Viscosity(㎟/s, 40℃)	9.2 ㎟/s (25 ℃)	
Molecular weight(mass)	206.3g/mol	
Density	0.989 g/㎤	
Specific gravity	0.989	

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 5300 ㎎/㎏ Test species: Rat
- Acute toxicity(Dermal)
  - LD50 2000 ㎎/㎏ 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

- Weak stimulus (10 mg, 24 hours, rabbit), Weak stimulus (500 mg, 24 hours, rabbit)

○ Serious eye damage/eye irritation

- Moderate irritation (20 mg, 24 hours, rabbit), severe irritation (50 mg, rabbit), EU CLP Category 1

○ 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

  No data available

- Crustaceans

  No data available

- Aquatic algae

  No data available

2) Persistence and degradability

- Degradability

  BOD5/COD 0.16

- Biodegradation

  77 (%) 6 day ((aerobic, other bacteria: BASF-Belebtschlamm))

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)

  - Triethylene glycol monobutyl ether : Applicable

China Inventory of Existing Chemical Substances (IECSC)

- Inventory - China - Inventory of Existing Chemical Substances (IECSC)

  - Triethylene glycol monobutyl ether : 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)

  - Triethylene glycol monobutyl ether : 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)

  - Triethylene glycol monobutyl ether : Applicable

New Zealand Environmental Protection Authority, Inventory of Chemicals

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

  - Triethylene glycol monobutyl ether : Applicable

Turkey Regulation on Inventory and Control of Chemicals

 - Not applicable

Taiwan Chemical Substance Inventory

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

  - Triethylene glycol monobutyl ether : Applicable

U.S. Toxic Substances Control Act

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

  - Triethylene glycol monobutyl ether : Applicable

Vietnam National Chemicals Inventory (NCI)

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

  - Triethylene glycol monobutyl ether : 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