

SAFETY DATA SHEET



1. IDENTIFICATION

- A. Product name
 - DIETHYLENE GLYCOL [DEG]
- B. Recommended use and restriction on use
 - General use : Industrial use
 - Restriction on use : Do not use for other purpose than recommendations
- C. Manufacturer / Supplier / Distributor information
 - o Manufacturer information
 - Company name : (주)LG Chem Daesan Plant
 - Address : Chungcheongnam-do Seosan City Daesan-eup Daejuk-ri 679
 - Dept. : EG/SM Production Team (EG Part)
 - Telephone number : 041-661-2561
 - Emergency telephone number : 041-661-2565
 - Fax number : 041-661-2569
 - E-mail address : youngjoonoh@lgchem.com
 - o Supplier/Distributor information
 - Company name : (주)LG Chem Daesan Plant
 - Address : Chungcheongnam-do Seosan City Daesan-eup Daejuk-ri 679
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2. HAZARD IDENTIFICATION

- A. GHS Classification
 - Reproductive toxicity : Category2
 - Specific target organ toxicity(Repeated exposure) : Category1
- B. GHS label elements
 - o Hazard symbols



- o Signal words
 - Danger
- o Hazard statements
 - H361 Suspected of damaging fertility or the unborn child
 - H372 Causes damage to organs through prolonged or repeated exposure (Refer Section SDS)
- o Precautionary statements
 - 1) 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 Wash hands thoroughly after handling.
 - P270 Do not eat, drink or smoke when using this product.
 - P281 Use personal protective equipment as required.
 - 2) Response
 - P308+P313 If exposed or concerned: Get medical advice/attention.
 - P314 Get medical advice/attention if you feel unwell.
 - 3) Storage
 - P405 Store locked up.

4) Disposal

- P501 Dispose of contents/container in accordance with

C. Other hazards which do not result in classification : (NFPA Classification)

- o NFPA grade (0 ~ 4 level)

- Health : 1 , Flammability : 1, Reactivity : 0

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	Trade names and Synonyms	CAS No.	Content(%)
2,2'-Oxybisethanol	Bis(b-hydroxyethyl) ether	111-46-6	100

4. FIRST AID MEASURES

A. Eye contact

- Do not rub your eyes.
- Immediately flush eyes with plenty of water for at least 15 minutes and call a doctor/physician.
- Get medical attention immediately.

B. Skin contact

- Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and
- Laundering enough contaminated clothing before reuse.
- Get medical attention immediately.

C. Inhalation contact

- When exposed to large amounts of steam and mist, move to fresh air.
- Take specific treatment if needed.
- Get medical attention immediately.
- If breathing is stopped or irregular, give artificial respiration and supply oxygen.

D. Ingestion contact

- Please be advised by doctor whether induction of vomit is demanded or not.
- Rinse your mouth with water immediately.
- Get medical attention immediately.

E. Delayed and immediate effects and also chronic effects from short and long term exposure

- Not available

F. Notes to physician

- Notify medical personnel of contaminated situations and have them take appropriate protective
- If exposed or concerned, get medical attention/advice.

5. FIREFIGHTING MEASURES

A. Suitable (Unsuitable) extinguishing media

- Dry chemical, carbon dioxide, regular foam extinguishing agent, spray
- Avoid use of water jet for extinguishing

B. Specific hazards arising from the chemical

- Not available

C. Special protective actions for firefighters

- Cool containers with water until well after fire is out.
- Keep unauthorized personnel out.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- Notify your local fire station and inform the location of the fire and characteristics hazard.
- Wear appropriate protective equipment.
- Keep containers cool with water spray.

6. ACCIDENTAL RELEASE MEASURES

A. Personal precautions, protective equipment and emergency procedures

- Wear proper personal protective apparatus as indicated in Section 8 and avoid skin contact and
- Do not touch spilled material. Stop leak if you can do it without risk.
- Move container to safe area from the leak area.
- Remove all sources of ignition.
- Keep unauthorized people away, isolate hazard area and deny entry.

B. Environmental precautions

- Prevent runoff and contact with waterways, drains or sewers.
- If large amounts have been spilled, inform the relevant authorities.

C. Methods and materials for containment and cleaning up

- Large spill : Stay upwind and keep out of low areas. Dike for later disposal.
- Notification to central government, local government. When emissions at least of the standard

- Dispose of waste in accordance with local regulation.
- Appropriate container for disposal of spilled material collected.

7. HANDLING AND STORAGE

A. Precautions for safe handling

- Refer to Engineering controls and personal protective equipment.
- Dealing only with a well-ventilated place.
- Do not handle until all safety precautions have been read and understood.
- Contaminated work clothing should not be allowed out of the workplace.

B. Conditions for safe storage, including any incompatibilities

- Check regularly for leaks.
- Do not use damaged containers.
- Do not apply direct heat.
- Prevent static electricity and keep away from combustible materials or heat sources.
- Collected them in sealed containers.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

A. Exposure limits

- o ACGIH TLV
 - Not available
- o OSHA PEL
 - Not available

B. Engineering controls

- A system of local and/or general exhaust is recommended to keep employee exposures above the Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. The use of local exhaust ventilation is recommended to control emissions near the source.

C. Individual protection measures, such as personal protective equipment

- o Respiratory protection
 - Under conditions of frequent use or heavy exposure, Respiratory protection may be needed.
 - Respiratory protection is ranked in order from minimum to maximum.
 - Consider warning properties before use.
- o Eye protection
 - Wear primary eye protection such as splash resistant safety goggles with a secondary
 - Provide an emergency eye wash station and quick drench shower in the immediate work area.
- o Hand protection
 - Wear appropriate glove.
- o Skin protection
 - Wear appropriate clothing.
- o Others
 - Not available

9. PHYSICAL AND CHEMICAL PROPERTIES

A. Appearance

- Appearance : Hygroscopic Liquid
- Color : Colorless

B. Odor : Odorless

C. Odor threshold : Not available

D. pH : Not available

E. Melting point/Freezing point : -6.5 °C

F. Initial Boiling Point/Boiling Ranges : 244 °C ~ 245 °C

G. Flash point : 124 °C

H. Evaporation rate : (< 0.001 (Butyl acetate=1))

I. Flammability(solid, gas) : Not available

J. Upper/Lower Flammability or explosive limits : 12.2 / 1.8 %

K. Vapour pressure : 0.0057 mmHg (25 °C)

L. Solubility : 100 g/100ml (25 °C (soluble))

M. Vapour density : 3.66

N. Specific gravity(Relative density) : 1.1197 (15 °C)

O. Partition coefficient of n-octanol/water : -1.47(Estimate)

- P. Autoignition temperature : 229 °C
Q. Decomposition temperature : Not available
R. Viscosity : 30 cP (25 °C)
S. Molecular weight : 106.12

10. STABILITY AND REACTIVITY

- A. Chemical Stability
- This material is stable under recommended storage and handling conditions.
- B. Possibility of hazardous reactions
- Hazardous Polymerization will not occur.
- C. Conditions to avoid
- Avoid contact with incompatible materials and condition.
- Avoid : Accumulation of electrostatic charges, Heating, Flames and hot surfaces
- D. Incompatible materials
- Not available
- E. Hazardous decomposition products
- May emit flammable vapour if involved in fire.

11. TOXICOLOGICAL INFORMATION

- A. Information on the likely routes of exposure
- (Respiratory tracts)
 - Not available
 - (Oral)
 - Not available
 - (Eye-Skin)
 - Not available
- B. Delayed and immediate effects and also chronic effects from short and long term exposure
- Acute toxicity
 - * Oral
 - [2,2'-Oxybisethanol] : LD50 = 12565 mg/kg Rat (HSDB)
 - * Dermal
 - [2,2'-Oxybisethanol] : LD50 = 11890 mg/kg Rabbit (HSDB)
 - * Inhalation
 - Not available
 - Skin corrosion/irritation
 - Not available
 - Serious eye damage/irritation
 - Not available
 - Respiratory sensitization
 - Not available
 - Skin sensitization
 - Not available
 - Carcinogenicity
 - * IARC
 - Not available
 - * OSHA
 - Not available
 - * ACGIH
 - Not available
 - * NTP
 - Not available
 - * EU CLP
 - Not available
 - Germ cell mutagenicity
 - Not available
 - Reproductive toxicity
 - Suspected of damaging fertility or the unborn child
 - STOT-single exposure
 - Not available

- STOT-repeated exposure
 - Causes damage to organs through prolonged or repeated exposure (Refer Section SDS 11)
- Aspiration hazard
 - Not available

12. ECOLOGICAL INFORMATION

- A. Ecotoxicity
 - Fish
 - [2,2'-Oxybisethanol] : LC50 = 75200 mg/l 96 hr Pimephales promelas (ECOTOX)
 - Crustaceans
 - Not available
 - Algae
 - Not available
- B. Persistence and degradability
 - Persistence
 - [2,2'-Oxybisethanol] : log Kow -1.47
 - Degradability
 - Not available
- C. Bioaccumulative potential
 - Bioaccumulative potential
 - [2,2'-Oxybisethanol] : BCF = 100 3 (Leuciscus idus melanotus(Fish, fresh water), 0.05mg/l)
 - Biodegradation
 - [2,2'-Oxybisethanol] : Biodegradability = 31 (%) 28 day (Aerobic, other bacteria: Abwasser, nicht)
- D. Mobility in soil
 - Not available
- E. Other adverse effects
 - Not available

13. DISPOSAL CONSIDERATIONS

- A. Disposal methods
 - Since more than two kinds of designaed waste is mixed, it is difficult to treat seperatly, then can be reduction or stabilization by incineration or similar process.
 - If water separation is possible, pre-process with Water separation process.
 - Dispose by incineration.
- B. Special precautions for disposal
 - The user of this product must disposal by oneself or entrust to waste disposer or person who other's waste recycle and dispose, person who establish and operate waste disposal facilities.
 - Dispose of waste in accordance with all applicable laws and regulations.

14. TRANSPORT INFORMATION

- A. UN No. (IMDG)
 - Not applicable
- B. Proper shipping name
 - Not applicable
- C. Hazard Class
 - Not applicable
- D. IMDG Packing group
 - Not applicable
- E. Marine pollutant
 - Not available
- F. Special precautions for user related to transport or transportation measures
 - Local transport follows in accordance with Dangerous goods Safety Management Law.
 - Package and transport follow in accordance with Department of Transportation (DOT) and other regulatory agency requirements.
 - Air transport(IATA): Not subject to LATA regulations.
 - EmS FIRE SCHEDULE : Not available
 - EmS SPILLAGE SCHEDULE : Not available

15. REGULATORY INFORMATION

- A. National and/or international regulatory information

- POPs Management Law
 - Not applicable
- Information of EU Classification
 - * Classification
 - [2,2'-Oxybisethanol] : H302
- U.S. Federal regulations
 - * OSHA PROCESS SAFETY (29CFR1910.119)
 - Not applicable
 - * CERCLA Section 103 (40CFR302.4)
 - Not applicable
 - * EPCRA Section 302 (40CFR355.30)
 - Not applicable
 - * EPCRA Section 304 (40CFR355.40)
 - Not applicable
 - * EPCRA Section 313 (40CFR372.65)
 - Not applicable
- Rotterdam Convention listed ingredients
 - Not applicable
- Stockholm Convention listed ingredients
 - Not applicable
- Montreal Protocol listed ingredients
 - Not applicable

16. OTHER INFORMATION

A. Reference

- The information contained herein is believed to be accurate. It is provided independently of any sale of the product for purpose of hazard communication. It is not intended to constitute performance information concerning the product. No express warranty, or implied warranty of merchantability or fitness for a particular purpose is made with respect to the product or the information contained herein.
- This Safety Data Sheet was compiled with data and information from the following sources: KOSHA, NITE, ESIS, NLM, SIDS, IPCS

B. Issue date

- 2017-02-27

C. Revision number and Last date revised

- 4 times, 2018-01-24

D. Other

- This SDS is prepared according to the Globally Harmonized System (GHS).