

BG_BUTYL_GLYCOL_ETHER

Version 1.7

Date of last issue: 2017/04/14

Revision Date: 2018/05/29

Date of first issue: 2014/12/31

1. PRODUCT AND COMPANY IDENTIFICATION

Product name : BG_BUTYL_GLYCOL_ETHER

Recommended use of the chemical and restrictions on use

Recommended use : Raw material for industry
Detergent
Dyestuff

Restrictions on use : Prohibition of recommendation applications outside of use

Manufacturer or supplier's details

Company : LOTTE Chemical Corporation

Address : Lotte World Tower, 300, Olympic-ro, Songpa-gu, Seoul, 05551
Rep. of KOREA

Telephone : Head-Office 82-2-829-4190
Yeosu Plant 82-61-688-2021
Daesan Plant 82-41-689-5800
Ulsan Plant 82-52-278-3421

Emergency telephone number : Head-Office 82-2-829-4190
Yeosu Plant 82-61-688-2021
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Ulsan Plant 82-52-278-3421

Telefax : 82-2-834-6070

2. HAZARDS IDENTIFICATION

GHS Classification

:

Acute toxicity (Oral, Dermal) : Category 4

Skin corrosion/irritation : Category 2

Serious eye damage/eye irritation : Category 2

Specific target organ toxicity - single exposure : Category 3 (Respiratory system)

GHS label elements

Hazard pictograms :



Signal word : Warning

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Hazard statements : H315 Causes skin irritation.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.
H302 + H312 + H332 Harmful if swallowed, in contact with skin or if inhaled.

Precautionary statements

General Information:

P263 Avoid contact during pregnancy/ while nursing.

Prevention:

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

P271 Use only outdoors or in a well-ventilated area.

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

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

Response:

P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell. Rinse mouth.

P302 + P352 + P312 IF ON SKIN: Wash with plenty of water. Call a POISON CENTER/doctor if you feel unwell.

P304 + P340 + P310 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor/ physician.

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

P321 Specific treatment (see supplemental first aid instructions on this label).

P332 + P313 If skin irritation occurs: Get medical advice/ attention.

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

P362 + P364 Take off contaminated clothing and wash it before reuse.

P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.

Storage:

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

P403 + P235 Store in a well-ventilated place. Keep cool.

P405 Store locked up.

Disposal:

P501 Dispose of contents and container according to wastes control act.

Other hazards which do not result in classification

According to our experience and to the information provided to us, the product does not have any harmful effects if it is used and handled as specified.

3. COMPOSITION/INFORMATION ON INGREDIENTS**Components**

Chemical name	Common Name	CAS-No.	Concentration (%)
2-butoxyethanol	2-butoxyethanol	111-76-2	>= 95 ~ <= 100

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4. FIRST AID MEASURES

General advice	: Move out of dangerous area. Show this safety data sheet to the doctor in attendance. Do not leave the victim unattended.
In case of eye contact	: Immediately flush eye(s) with plenty of water. Remove contact lenses. Keep eye wide open while rinsing. If eye irritation persists, consult a specialist.
In case of skin contact	: Wash off immediately with plenty of water for at least 15 minutes. If on skin, rinse well with water. If on clothes, remove clothes.
If inhaled	: Oxygen or artificial respiration if needed. Move to fresh air. If unconscious, place in recovery position and seek medical advice. If symptoms persist, call a physician.
If swallowed	: Induce vomiting immediately and call a physician. Keep respiratory tract clear. Do not give milk or alcoholic beverages. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician.
Most important symptoms and effects, both acute and delayed	: None known.
Protection of first-aiders	: First Aid responders should pay attention to self-protection and use the recommended protective clothing
Notes to physician	: In case of ingestion, the stomach should be emptied by gastric lavage under qualified medical supervision. Oxygen, if needed.

5. FIREFIGHTING MEASURES**Suitable and unsuitable extinguishing media**

Suitable extinguishing media : Carbon dioxide (CO₂)
Water
Dry powder
Alcohol-resistant foam
Sand

Unsuitable extinguishing media : No data available

Specific hazards during firefighting : No data available

Hazardous combustion prod- : Carbon oxides

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ucts	Hazardous combustion products
Specific extinguishing methods	: For safety reasons in case of fire, cans should be stored separately in closed containments. Use a water spray to cool fully closed containers.
Special protective equipment for firefighters	: Wear self-contained breathing apparatus for firefighting if necessary. Use personal protective equipment. Exposure to decomposition products may be a hazard to health.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	: Use personal protective equipment.
Environmental precautions	: Prevent further leakage or spillage if safe to do so. If the product contaminates rivers and lakes or drains inform respective authorities.
Methods and materials for containment and cleaning up	: Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). Keep in suitable, closed containers for disposal. Soak up with inert absorbent material.

7. HANDLING AND STORAGE

Advice on safe handling	: Avoid formation of aerosol. Do not breathe vapours/dust. Avoid exposure - obtain special instructions before use. Avoid contact with skin and eyes. For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. Provide sufficient air exchange and/or exhaust in work rooms. Dispose of rinse water in accordance with local and national regulations.
Conditions for safe storage	: Keep in a well-ventilated place. Observe label precautions. Electrical installations / working materials must comply with the technological safety standards.
Materials to avoid	: Strong oxidizing agents
Recommended storage temperature	: < 40 °C
Storage period	: 12 Months

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Packaging material : Suitable material: Stainless steel, Polypropylene, Cold Rolled Carbon Steel

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
2-butoxyethanol	111-76-2	TWA	20 ppm 97 mg/m ³	KR OEL
	Further information: Limited evidence of carcinogenicity in humans or animals, which is not sufficiently convincing to place the substance in Category 1, Substances designated by 'Skin' may be absorbed into the bloodstream through the skin, mucous membrane and eye and contribute to the overall effect. (Skin notation does not apply to the skin irritant)			
		TWA	20 ppm	ACGIH
		TWA	5 ppm 24 mg/m ³	NIOSH REL
		TWA	50 ppm 240 mg/m ³	OSHA Z-1
		TWA	25 ppm 120 mg/m ³	OSHA P0
		PEL	20 ppm 97 mg/m ³	CAL PEL

Biological occupational exposure limits

Components	CAS-No.	Control parameters	Biological specimen	Sampling time	Permissible concentration	Basis
2-butoxyethanol	111-76-2	Butoxyacetic acid	Urine	End of shift	200 mg/g	ACGIH BEI
		Butoxyacetic acid	Urine	End of shift	200 mg/g	ACGIH BEI

Engineering measures : Handle only in a place equipped with local exhaust (or other appropriate exhaust).
Maintain air concentrations below occupational exposure standards.

Personal protective equipment

Respiratory protection : In the case of vapour formation use a respirator with an approved filter.

Eye protection : Goggles
Wear face-shield and protective suit for abnormal processing problems.

Hand protection
Material : Impervious gloves

Remarks : The suitability for a specific workplace should be discussed with the producers of the protective gloves.

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Skin and body protection	: Impervious clothing Choose body protection according to the amount and concentration of the dangerous substance at the work place.
Protective measures	: Personal protective equipment comprising: suitable protective gloves, safety goggles and protective clothing Wear suitable protective equipment.
Hygiene measures	: When using do not eat or drink. When using do not smoke. Wash hands before breaks and at the end of workday.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	: liquid
Colour	: transparent
Odour	: sweet
Odour Threshold	: 9.3 ppm
pH	: 7.0 (25 °C)
Melting point/freezing point	: -75 °C
Initial boiling point and boiling range	: 171 °C
Flash point	: 67 °C
Evaporation rate	: 0.08 (Butyl Acetate=1.0)
Flammability (solid, gas)	: No data available
Flammability (liquids)	: No data available
Burning rate	: No data available
Self-ignition	: No data available
Burning number	: No data available
Upper explosion limit / Upper flammability limit	: Upper flammability limit 12.7 %(V)
Lower explosion limit / Lower flammability limit	: Lower flammability limit 1.1 %(V)
Vapour pressure	: 0.8 hPa (20 °C)
Bulk density	: No data available
Solubility(ies) Water solubility	: 900 g/l soluble (20 °C)

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Solubility in other solvents	:	Solvent: Ethyl ether Description: miscible
		Solvent: Ethyl alcohol Description: miscible
		Description: miscible with most organic solvents
Relative vapour density	:	4.08
Relative density	:	0.9 (20 °C)
Density	:	No data available
Partition coefficient: n-octanol/water	:	Pow: 6.46 (20 °C)
		log Pow: 0.81 (25 °C)
Auto-ignition temperature	:	230 °C (1,013 hPa)
Decomposition temperature	:	No data available
Self-Accelerating decomposition temperature (SADT)	:	No data available
Self-accelerating polymerization (SAPT)	:	No data available
Viscosity		
Viscosity, dynamic	:	No data available
Viscosity, kinematic	:	3.64 mm ² /s (20 °C)
Flow time	:	No data available
Solvent separation	:	No data available
Explosive properties	:	No data available
Oxidizing properties	:	No data available
Self-heating substances	:	No data available
Heat of combustion	:	No data available
Impact sensitivity	:	No data available
Surface tension	:	No data available
Conductivity	:	No data available
Molecular weight	:	118.2 g/mol
Minimum explosible dust concentration	:	No data available

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Dust deflagration index (Kst)	:	No data available
Dust explosion class	:	No data available
Radioactivity	:	No data available
Metal corrosion rate	:	No data available
Particle size	:	No data available
Particle Size Distribution	:	No data available

10. STABILITY AND REACTIVITY

Chemical stability and possibility of hazardous reactions	:	No decomposition if stored and applied as directed. Stable under normal conditions., Decomposes on exposure to light. Vapours may form explosive mixture with air.
Conditions to avoid	:	Heat, flames and sparks.
Incompatible materials	:	Strong oxidizing agents
Hazardous decomposition products	:	It is easy to form peroxide upon exposure to air and light.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure	:	Skin contact Inhalation
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Health hazard information**Acute toxicity****Product:**

Acute oral toxicity : LD50 (Rat): 1,300 mg/kg

Acute dermal toxicity : LD50 (Rat): 2,000 mg/kg

Components:**2-butoxyethanol:**

Acute oral toxicity : LD50 (Guinea pig): 1,414 mg/kg

Skin corrosion/irritation**Product:**

Species: Rabbit

Exposure time: 24 h

Result: Mild skin irritation

Remarks: May cause skin irritation in susceptible persons.

Components:

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2-butoxyethanol:

Remarks: Irritating to eyes and skin.

Serious eye damage/eye irritation

Components:

2-butoxyethanol:

Species: Rabbit

Result: irritating

Exposure time: 168 h

Method: OECD Test Guideline 405

Remarks: At high concentrations product causes severe inflammation of conjunctiva and cornea.

Respiratory or skin sensitisation

No data available

Carcinogenicity

Components:

2-butoxyethanol:

Carcinogenicity - Assessment : Carcinogenicity is not confirmed.

Germ cell mutagenicity

Components:

2-butoxyethanol:

Germ cell mutagenicity- Assessment : Animal testing did not show any mutagenic effects.

Reproductive toxicity

No data available

STOT - single exposure

Components:

2-butoxyethanol:

Target Organs: Respiratory system

Assessment: May cause respiratory irritation.

STOT - repeated exposure

No data available

Aspiration toxicity

No data available

Further information

Product:

Remarks: No data available

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12. ECOLOGICAL INFORMATION**Ecotoxicity****Components:****2-butoxyethanol:**

Toxicity to fish : LC50 (Fish): 1,474 mg/l
Exposure time: 96 h

Toxicity to daphnia and other : EC50 (Daphnia magna (Water flea)): 1,800 mg/l
aquatic invertebrates Exposure time: 48 h

Toxicity to algae : EC50: 911 mg/l
Exposure time: 72 h

Persistence and degradability**Components:****2-butoxyethanol:**

Biodegradability : Biodegradation: 96 %

Bioaccumulative potential**Components:****2-butoxyethanol:**

Partition coefficient: n- : log Pow: 0.81
octanol/water

Mobility in soil

No data available

Other adverse effects

No data available

Product:

Additional ecological infor- : No data available
mation

Hazardous to the ozone layer

Not applicable

13. DISPOSAL CONSIDERATIONS**Disposal methods**

Waste from residues : Do not dispose of waste into sewer.
Do not contaminate ponds, waterways or ditches with chemi-
cal or used container.
Send to a licensed waste management company.

Contaminated packaging : Empty remaining contents.
Dispose of as unused product.
Do not re-use empty containers.
Do not burn, or use a cutting torch on, the empty drum.

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Disposal precautions

Dispose of in accordance with local regulations.

14. TRANSPORT INFORMATION**International Regulations****UNRTDG**

Not regulated as a dangerous good

IATA-DGR

Not regulated as a dangerous good

IMDG-Code

Not regulated as a dangerous good

UN number	: Not applicable
Proper shipping name	: Not applicable
Class	: Not applicable
Subsidiary risk	: Not applicable
Packing group	: Not applicable
Labels	: Not applicable
EmS Code	: Not applicable
Marine pollutant	: Not applicable

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

National Regulations

Refer to section 15 for specific national regulation.

Special precautions for user

Not applicable

15. REGULATORY INFORMATION**National regulatory information****Regulation under the Occupational Safety and Health Act****Harmful Substances Prohibited from Manufacturing**

Not applicable

Harmful Substances Required Permission for Manufacture

Not applicable

Hazardous substances requiring management

Chemical name	CAS-No.	Threshold limits (%)
2-Butoxyethanol	111-76-2	>= 1 Vol-%

Controlled Substances Subject to Environment Monitoring

Chemical name	CAS-No.	Threshold limits (%)
2-Butoxyethanol	111-76-2	>= 1 %

Controlled Substances Subject to Health Examination

Chemical name	CAS-No.	Threshold limits (%)
2-Butoxyethanol	111-76-2	>= 1 %

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Act on the Registration and Evaluation, etc. of Chemical Substances, Chemicals Control Act**Toxic Chemicals**

Not applicable

Restricted Chemicals

Not applicable

Prohibited Chemicals

Not applicable

Toxic Release Inventory

Not applicable

Accident Precaution Chemicals

Not applicable

Dangerous Substances Safety Management Act

Classification : Group 4, Flammable liquids, Type 2 petroleum, Water soluble liquid

Hazard rank : Hazardous rank III

Designated Quantity : 2000 litre

Safety Warning : Keep away from fire

Wastes Control Act

Industrial waste

Follow article 13 of the act to dispose the product waste

Other requirements in domestic and other countries

No data available

16. OTHER INFORMATION**Further information**

Sources of key data used to compile the Safety Data Sheet : ECHA, ICSC, IUCLID, KOSHA, HSDB, ACGIH, ATSDR, ECETOC, SAP Chemical Portal, Germany SAP SERC Database

Revision number and date

Number of Revision : 1.7

Revision Date : 2018/05/29

Other information

Date format : yyyy/mm/dd

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

SAFETY DATA SHEET



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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.