Butyl Glycol Ether

SECTION 1  IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Trade name  Butyl Glycol Ether
Synonyms  Butyl cellosolve, Ethylene glycol monobutyl ether
Use  Hard-surface cleaner, Industrial & Institutional cleaning, Industrial use, Intermediate, Paint and Coatings, Paper Chemical, Raw material for chemical processes, Raw material for industry, Solvent
Company  Sasol Chemicals (USA) LLC
(an affiliate of Sasol Chemicals North America LLC)
Address  12120 Wickchester Lane   Houston TX 77079
Telephone  CHEMTREC North America Transportation Emergency (24-hr) (800) 424-9300
CHEMTREC World Wide (703) 527-3887
Other Emergencies (24-hr) (337) 494-5142
MSDS and Product Information (8:00am-4:30pm CST) (281) 588-3491
Health and Safety Information (7:30am-4:00pm CST) (281) 588-3492
E-mail address  SasolElectronicSDS@us.sasol.com

SECTION 2  HAZARDS IDENTIFICATION

GHS Hazards
Flammable liquids  Category 4
Acute toxicity (Oral)  Category 4
Acute toxicity (Inhalation)  Category 4
Acute toxicity (Dermal)  Category 4
Eye irritation  Category 2A
Skin irritation  Category 2

LABEL ELEMENTS

Hazard symbols

Signal word  Warning

Hazard statements  H227  Combustible liquid.
H302  Harmful if swallowed.
H312  Harmful in contact with skin.
H315  Causes skin irritation.
H319  Causes serious eye irritation.
H332  Harmful if inhaled.
Precautionary statements

Prevention
P210  Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P261  Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P264  Wash skin thoroughly after handling.
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.

Response
P301 + P312  IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell.
P302 + P352  IF ON SKIN: Wash with plenty of soap and water.
P330  Rinse mouth.
P337 + P313  If eye irritation persists: Get medical advice/ attention.
P362  Take off contaminated clothing and wash before reuse.
P333 + P313  If skin irritation or rash occurs: Get medical advice/ attention.
P305 + P351 + P338  IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P333 + P313  If skin irritation or rash occurs: Get medical advice/ attention.
P304 + P340  IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

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

Disposal
P501  Dispose of contents/ container to an approved waste disposal plant.

SECTION 3  COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Weight percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-butoxyethanol</td>
<td>111-76-2</td>
<td>100</td>
</tr>
</tbody>
</table>

See Section 8 for Exposure Guidelines and Section 15 for Regulatory Classifications.

SECTION 4  FIRST AID MEASURES

Eye contact
Rinse immediately with plenty of water for at least 15 minutes. If eye irritation persists, consult a specialist.

Skin contact
If skin irritation persists, call a physician. Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.

Inhalation
Remove to fresh air. If breathing is irregular or stopped, administer artificial respiration. Call a physician immediately.

Ingestion
Do NOT induce vomiting. Consult a physician.
Butyl Glycol Ether

SECTION 5  FIREFIGHTING MEASURES

FLAMMABLE PROPERTIES
Fire/explosion  NFPA Class IIIA combustible liquid.

Suitable extinguishing media  Water spray, Foam, Dry chemical, Carbon dioxide (CO2)

Protective equipment and precautions for firefighters  In the event of fire, wear self-contained breathing apparatus.

Further information  Keep containers and surroundings cool with water spray.

SECTION 6  ACCIDENTAL RELEASE MEASURES

Methods and materials for containment and cleaning up  Evacuate the area and eliminate all sources of ignition. 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).

SECTION 7  HANDLING AND STORAGE

Safe handling advice  Ensure all equipment is electrically grounded before beginning transfer operations. Keep away from heat and sources of ignition.

Storage/Transport pressure  Ambient

Load/Unload temperature  Ambient

SECTION 8  EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING MEASURES  Air contaminant levels should be controlled below the PEL or TLV for this product (see Exposure Guidelines).

PERSONAL PROTECTIVE EQUIPMENT

Eyes  Wear as appropriate: Goggles, Face-shield

Skin  Wear suitable protective clothing, gloves and eye/face protection.

Inhalation  Respiratory protection is normally not required except in emergencies or when conditions cause excessive airborne levels of mists or vapors. Use NIOSH approved respiratory protection.
Butyl Glycol Ether

EXPOSURE GUIDELINES

<table>
<thead>
<tr>
<th>Components</th>
<th>Exposure limit(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-butoxyethanol</td>
<td>OSHA PEL 50 ppm 240 mg/m3</td>
</tr>
<tr>
<td></td>
<td>ACGIH TLV (8-hour) 20 ppm</td>
</tr>
<tr>
<td></td>
<td>Confirmed animal carcinogen with unknown relevance to humans.</td>
</tr>
</tbody>
</table>

PEL= Permissible Exposure Limits  
TWA= Time Weighted Average (8 hr.)  
TLV= Threshold Limit Value  
STEL= Short Term Exposure Limit (15 min.)  
EL= Excursion Limit  
WEEL= Workplace Environmental Exposure Level

SECTION 9  PHYSICAL AND CHEMICAL PROPERTIES

- **Appearance**: liquid;
- **Colour**: Clear, colorless
- **Form**: liquid
- **Odour**: mild
- **Odour Threshold**: no data available
- **Flash point**: 67 °C, 152 °F;
- **Flammability**: Upper explosion limit: ca. 10.6 %(V)
  Lower explosion limit: ca. 1.1 %(V)
- **Boiling point/boiling range**: 171 °C, 340 °F;
- **Melting point/range**: -75 °C, -103 °F;
- **Auto-ignition temperature**: ca. 230 °C, 446 °F;
- **Decomposition temperature**: no data available
- **Flammability (solid, gas)**: no data available
- **Vapour pressure**: 1 hPa @ 20 °C, 68 °F;
- **Vapour density**: 4.1
- **Density**: 0.9 g/cm3 @ 20 °C, 60 °F;
- **Specific gravity**: no data available
- **Water solubility**: completely miscible
Butyl Glycol Ether

**Viscosity** no data available

**Viscosity, dynamic** 3.3 mPa.s @ 20 °C, 68 °F;

**pH** 7 @ 20 °C, 68 °F;

**Evaporation rate** no data available

**Partition coefficient: n-octanol/water** no data available

**SECTION 10 STABILITY AND REACTIVITY**

**Reactivity** Stable at normal ambient temperature and pressure.

**Chemical stability** No decomposition if stored and applied as directed.

**Conditions to avoid** Keep away from heat and sources of ignition.

**Hazardous decomposition products** Combustion products include carbon dioxide, carbon monoxide and possibly other unidentified organic compounds.

**Materials to avoid** Oxidizing agents

**Hazardous polymerisation** Stable

**SECTION 11 TOXICOLOGICAL INFORMATION**

**Acute dermal toxicity** LD50 Rabbit: > 1,000 - 2,000 mg/kg (literature value)

**Acute inhalation toxicity** LC50 Rat (4 hours): > 10 - 20 mg/l (literature value)

**Acute oral toxicity** LD50 Rat: > 300 - 2,000 mg/kg (literature value)

**Skin corrosion/irritation** (Rabbit) Irritating.

**Eye damage/irritation** (Rabbit) Irritating.

**Respiratory or skin sensitization** Guinea pig: not sensitizing; Maximisation Test (GPMT) (literature value)

**Germ cell mutagenicity** Genotoxicity in vitro:

Type: Ames test
System: Salmonella typhimurium; with and without metabolic activation

Result: In vitro tests did not show mutagenic effects
Butyl Glycol Ether

(literature value)

**Genotoxicity in vivo:**
no data available

**Assessment Mutagenicity:**
Based on available data, the classification criteria are not met.

**Reproductive toxicity**

**Reproductive toxicity:**
no data available

**Assessment Reproductive toxicity:**
no data available

**Teratogenicity:**
no data available

**Assessment teratogenicity:**
no data available

**STOT - single exposure**
no data available

**STOT - repeated exposure**
no data available

**Aspiration toxicity**
no data available

**Carcinogenicity**

**Assessment carcinogenicity:**
Contains no ingredient listed as a carcinogen

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**SECTION 12 ECOLOGICAL INFORMATION**

**Toxicity to fish**
LC50 (Oncorhynchus mykiss (rainbow trout)) 96 hours: > 100 mg/l; static test (literature value)

**Toxicity to aquatic invertebrates**
EC50 (Daphnia magna (Water flea)) 48 hours: > 100 mg/l; static test (literature value)

**Toxicity to algae**
EC50 (Pseudokirchneriella subcapitata (green algae)) 72 hours: > 100 mg/l; static test (literature value)

**Chronic toxicity to fish**
NOEC (Danio rerio (zebra fish)) 21 d: > 100 mg/l; semi-static test; OECD Test Guideline 204 (literature value)

**Chronic toxicity to aquatic invertebrates**
EC10 (Daphnia magna (Water flea)) 21 d: > 100 mg/l; semi-static test; OECD Test Guideline 211 (literature value)

**Biodegradation**
Readily biodegradable
Butyl Glycol Ether

OECD Test Guideline 301B (28 d): > 60 %
(literature value)

Bioaccumulation no data available
Mobility in soil no data available
Other adverse effects This substance is not considered to be persistent, bioaccumulating and toxic (PBT);

SECTION 13 DISPOSAL CONSIDERATIONS

Waste Code Any unused product or empty containers may be disposed of as non-hazardous in accordance with state and federal requirements. Re-evaluation of the product may be required by the user at the time of disposal, since the product uses, transformations, mixtures, contamination, and spillage may change the classification. If the resulting material is determined to be hazardous, please dispose in accordance with state and federal (40 CFR 262) hazardous waste regulations.

Disposal methods Dispose of only in accordance with local, state, and federal regulations.

Empty containers. Empty containers retain product residue (liquid and/or vapor) and can be dangerous. DO NOT PRESSURIZE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION; THEY MAY EXPLODE AND CAUSE INJURY OR DEATH. Empty drums should be completely drained, triple-rinsed, properly bunged and promptly returned to a drum reconditioner, or properly disposed.

SECTION 14 TRANSPORT INFORMATION

DOT NA 1993, Combustible liquid, n.o.s.(2-butoxyethanol), III
This product is regulated as a hazardous material according to the Department of Transportation only in bulk quantities (greater than 119 gallons per package).

IATA Not regulated.

IMDG Shipment by water under IMDG is non-regulated; however it must be shipped per the applicable DOT hazard classification if any part of the shipment is by ground.

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

Remarks no data available

SECTION 15 REGULATORY INFORMATION

U.S. FEDERAL REGULATIONS

OSHA Hazards (HCS 1994)
Combustible liquid., Eye irritation, Skin irritation
Butyl Glycol Ether

TSCA Inventory Listing

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-butoxyethanol</td>
<td>111-76-2</td>
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SARA 302 Status

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Weight percent</th>
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</thead>
<tbody>
<tr>
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</table>

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 311/312 Classification

"Immediate (acute) health hazard", "Fire hazard"

SARA 313 Chemical

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Weight percent</th>
</tr>
</thead>
<tbody>
<tr>
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</tbody>
</table>

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

US. EPA CERCLA Hazardous Substances (40 CFR 302)

<table>
<thead>
<tr>
<th>Components</th>
<th>Reportable Quantity</th>
<th>Weight percent</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>

none

INTERNATIONAL REGULATIONS

WHMIS Classification

Class B, Division 3: Combustible liquid.
Class D, Division 2, Subdivision B: Toxic material.

European Union

Classification according to Regulation (EU) 1272/2008.

- Flammable liquids, Category 4
- Acute toxicity (Dermal), Category 4
- Acute toxicity (Inhalation), Category 4
- Acute toxicity (Oral), Category 4
- Eye irritation, Category 2
- Skin irritation, Category 2

Australia. Inventory of Chemical Substances (AICS) Listed

Japan. Inventory of Existing and New Chemical Substances (ENCS) Listed

Japan. Industrial Safety & Health Law (ISHL) Inventory Listed

Canada. Domestic Substances List (DSL) Inventory Listed

Canadian Non-Domestic Substance Listing (NDSL) Not listed

European Inventory of Existing Commercial Chemical Substances (EINECS) Listing Listed

Philippines. Inventory of Chemicals / Chemical Substances (PICCS) Listed
Butyl Glycol Ether

Korea. Existing Chemicals Inventory (KECI) Listed
China. Inventory of Existing Chemical Substances (IECSC) Listed
Mexico. National Inventory of Chemical Substances (INSQ) Listed
New Zealand. Inventory of Chemicals (NZIoC) Listed
Switzerland. Inventory of Notified New Substances (CHINV) Listed
Taiwan. National Existing Chemical Inventory (NECI) Listed

Please note: The names and CAS numbers which are used for this product in the stated inventories may deviate from the information which is listed in Section 3.

STATE REGULATIONS

California Prop. 65
Components none

SECTION 16 OTHER INFORMATION

HAZARD RATINGS

<table>
<thead>
<tr>
<th></th>
<th>Health</th>
<th>Flammability</th>
<th>Physical Hazard/ Instability</th>
</tr>
</thead>
<tbody>
<tr>
<td>HMIS®</td>
<td>2</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>NFPA</td>
<td>2</td>
<td>2</td>
<td>0</td>
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</tbody>
</table>

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