

SAFETY DATA SHEET



1,3-BG (Industrial Quality)
10010

Version / Revision 4 .00***
Supersedes Version 3 .01***

Revision Date 13-May-2015
Issuing date 15-May-2015

SECTION 1: Identification

1.1. Product identifier

Identification of the substance/preparation

1,3-BG (Industrial Quality)

Chemical Name 1,3-Butylene glycol
CAS-No 107-88-0

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the Substance / Preparation Intermediate
Monomer

1.3. Details of the supplier of the safety data sheet

Supplier **OXEA Corporation**
1505 West LBJ Freeway, Suite 400
Dallas, TX 75234
USA
Phone: +1 972 481 2700

Product Information Product Stewardship
FAX: +49 (0)208 693 2053
email: psq@oxea-chemicals.com

1.4. Emergency telephone number

Emergency telephone number in USA, call 800 424 9300
outside USA, call 703 527 3887, collect calls accepted
available 24/7***

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

This substance is not hazardous in accordance with paragraph (d) of §1910.1200 (GHS-US classification).***

OSHA Specified Hazards Not applicable.

2.2. Label elements

Not required according to §1910.1200 (GHS-US labeling).***

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2.3. Other hazards

None known

SECTION 3: Composition/information on ingredients

3.1. Substances

Component	CAS-No	Concentration (%)
1,3-Butylene glycol (Butane-1,3-diol)	107-88-0	> 99,5

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation

Keep at rest. Aerate with fresh air. When symptoms persist or in all cases of doubt seek medical advice.

Eyes

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses. Immediate medical attention is required.

Skin

Wash off immediately with plenty of water. When symptoms persist or in all cases of doubt seek medical advice.

Ingestion

Call a physician immediately. Do not induce vomiting without medical advice.

4.2. Most important symptoms and effects, both acute and delayed

Main symptoms

cough.

Special hazard

Lung irritation.

4.3. Indication of any immediate medical attention and special treatment needed

General advice

Remove contaminated, soaked clothing immediately and dispose of safely. First aider needs to protect himself.

Treat symptomatically. If ingested, irrigate the stomach using activated charcoal.

SECTION 5: Firefighting measures

5.1. Extinguishing media

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Suitable extinguishing media

foam, dry chemical, carbon dioxide (CO₂), water spray

Extinguishing media which must not be used for safety reasons

Do not use a solid water stream as it may scatter and spread fire.

5.2. Special hazards arising from the substance or mixture

Under conditions giving incomplete combustion, hazardous gases produced may consist of:

carbon monoxide (CO)

carbon dioxide (CO₂)

Combustion gases of organic materials must in principle be graded as inhalation poisons

Vapours are heavier than air and may spread along floors

5.3. Advice for firefighters

Special protective equipment for firefighters

Fire fighter protection should include a self-contained breathing apparatus (NIOSH-approved or EN 133) and full fire-fighting turn out gear.

Precautions for firefighting

Cool containers / tanks with water spray. Dike and collect water used to fight fire. Keep people away from and upwind of fire.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Avoid contact with skin and eyes. Avoid breathing vapors or mists. Keep people away from and upwind of spill/leak.

Ensure adequate ventilation, especially in confined areas. Keep away from heat and sources of ignition.

For emergency responders: Personal protection see section 8.

6.2. Environmental precautions

Prevent further leakage or spillage. Do not discharge product into the aquatic environment without pretreatment (biological treatment plant).

6.3. Methods and material for containment and cleaning up

Methods for containment

Stop the flow of material, if possible without risk. Dike spilled material, where this is possible.

Methods for cleaning up

Soak up with inert absorbent material. Keep in suitable, closed containers for disposal. If liquid has been spilt in large quantities clean up promptly by scoop or vacuum. Dispose of in accordance with local regulations. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapours).

6.4. Reference to other sections

For personal protective equipment see section 8.

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SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product. Provide sufficient air exchange and/or exhaust in work rooms.

Hygiene measures

When using, do not eat, drink or smoke. Take off all contaminated clothing immediately. Wash hands before breaks and immediately after handling the product.

Advice on the protection of the environment

See Section 8: Environmental exposure controls.

Incompatible products

strong oxidizing agents

7.2. Conditions for safe storage, including any incompatibilities

Advice on protection against fire and explosion

Keep away from sources of ignition - No smoking. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapours). In case of fire, emergency cooling with water spray should be available. Ground and bond containers when transferring material.

Technical measures/Storage conditions

Keep containers tightly closed in a cool, well-ventilated place. Handle and open container with care. Keep at temperatures between 15 and 32 °C (60 and 90 °F).***

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure limits United States of America

No exposure limits established.

8.2. Exposure controls

Appropriate Engineering controls

General or dilution ventilation is frequently insufficient as the sole means of controlling employee exposure. Local ventilation is usually preferred. Explosion-proof equipment (for example fans, switches, and grounded ducts) should be used in mechanical ventilation systems.

Individual protection measures, such as personal protective equipment

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General industrial hygiene practice

Avoid contact with skin, eyes and clothing. Do not breathe vapours or spray mist. Ensure that eyewash stations and safety showers are close to the workstation location.

Hygiene measures

When using, do not eat, drink or smoke. Take off all contaminated clothing immediately. Wash hands before breaks and immediately after handling the product.

Eye protection

Tightly fitting safety goggles. In addition to goggles, wear a face shield if there is a reasonable chance for splash to the face.

Hand protection

Wear protective gloves. Recommendations are listed below. Other protective material may be used, depending on the situation, if adequate degradation and permeation data is available. If other chemicals are used in conjunction with this chemical, material selection should be based on protection for all chemicals present.

Suitable material	nitrile rubber
Evaluation	according to EN 374: level 6
Glove thickness	approx 0,55 mm
Break through time	> 480 min

Suitable material	polyvinylchloride / nitrile rubber
Evaluation	according to EN 374: level 6
Glove thickness	approx 0,9 mm
Break through time	> 480 min

Skin and body protection

Impervious clothing. Wear face-shield and protective suit for abnormal processing problems.

Respiratory protection

Respirator with filter for organic vapour. Use the indicated respiratory protection if the occupational exposure limit is exceeded and/or in case of product release (dust). Equipment should conform to NIOSH.

Environmental exposure controls

If possible use in closed systems. If leakage can not be prevented, the substance needs to be suck off at the emersion point, if possible without danger. Observe the exposure limits, clean exhaust air if needed. If recycling is not practicable, dispose of in compliance with local regulations. Inform the responsible authorities in case of leakage into the atmosphere, or of entry into waterways, soil or drains.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	liquid
Colour	colourless
Odour	weak
Odour threshold	No data available
pH	6,1 (500 g/l in water @ 20 °C (68 °F))
Melting point/range	-71 °F (-57 °C)
Boiling point/range	408 °F (209 °C) @ 1 atm (101,3 kPa)

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Flash point	239 °F (115 °C)				
Method	ISO 2719				
Evaporation rate	No data available				
Flammability (solid, gas)	Does not apply, the substance is a liquid				
Lower explosion limit	1,9 Vol %				
Upper explosion limit	12,6 Vol %				
Vapour pressure	***				
Values	Values	Values	@ °C	@ °F	Method
[hPa]	[kPa]	[atm]			
< 1	< 0,1	< 0,001	20	68	
1,8	0,18	0,002	50	122	
Vapour density	3,2 (Air = 1) @ 20 °C (68 °F)				
Relative density	***				
Values	@ °C	@ °F	Method		
1,0035	20	68	DIN 51757		
Solubility	No data available				
Water solubility	miscible OECD 105				
log Pow	-0,9 (measured) OECD 117				
Autoignition temperature	770 °F (410 °C)				
Method	DIN 51794				
Decomposition temperature	No data available				
Viscosity	131,8 mPa*s @ 68 °F (20 °C)				
Method	DIN 51562, dynamic				

9.2. Other information

Molecular weight	90,12
Molecular formula	C4 H10 O2
Oxidizing properties	Does not apply, substance is not oxidising. There are no chemical groups associated with oxidizing properties
Refractive Index	1,440 @ 68 °F (20 °C)
Explosive properties	Does not apply, substance is not explosive. There are no chemical groups associated with explosive properties
Surface tension	72,6 mN/m (1 g/l @ 20°C), OECD 115
hygroscopic.	

SECTION 10: Stability and reactivity

10.1. Reactivity

The reactivity of the product corresponds to the typical reactivity shown by the substance group as described in any text book on organic chemistry.

10.2. Chemical stability

Stable under recommended storage conditions.

10.3. Possibility of hazardous reactions

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Hazardous polymerisation does not occur.***

10.4. Conditions to avoid

Avoid contact with heat, sparks, open flame and static discharge. Avoid any source of ignition.

10.5. Incompatible materials

strong oxidizing agents.

10.6. Hazardous decomposition products

No decomposition if stored and applied as directed.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Likely routes of exposure Ingestion, Inhalation, Eye contact, Skin contact***

1,3-Butylene glycol (Butane-1,3-diol), CAS: 107-88-0

Main symptoms

cough.

Target Organ Systemic Toxicant - Single exposure

Based on available data, the classification criteria are not met for:

STOT SE***

Target Organ Systemic Toxicant - Repeated exposure

Based on available data, the classification criteria are not met for:

STOT RE***

Acute toxicity				
1,3-Butylene glycol (Butane-1,3-diol) (107-88-0)				
Routes of Exposure	Endpoint	Values	Species	Method
Oral	LD50	22800 mg/kg	rat, male	
Inhalative	LC0	290 mg/m ³	rat, male	OECD 403

1,3-Butylene glycol (Butane-1,3-diol), CAS: 107-88-0

Assessment

Based on available data, the classification criteria are not met for:

Acute oral toxicity

Acute inhalation toxicity

STOT SE

For acute dermal toxicity, no data are available***

Irritation and corrosion				
1,3-Butylene glycol (Butane-1,3-diol) (107-88-0)				
Target Organ Effects	Species	Result	Method	
Skin	rabbit	No skin irritation		
Eyes	rabbit	Mild eye irritation		

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1,3-Butylene glycol (Butane-1,3-diol), CAS: 107-88-0

Assessment

Based on available data, the classification criteria are not met for:

skin irritation/corrosion

eye irritation/corrosion

For respiratory irritation, no data are available***

Sensitization

1,3-Butylene glycol (Butane-1,3-diol) (107-88-0)

Target Organ Effects	Species	Evaluation	Method	
Skin	Human experience	not sensitizing	Patch-test	

1,3-Butylene glycol (Butane-1,3-diol), CAS: 107-88-0

Assessment

Based on available data, the classification criteria are not met for:

Skin sensitization

For respiratory sensitization, no data are available***

Subacute, subchronic and prolonged toxicity

1,3-Butylene glycol (Butane-1,3-diol) (107-88-0)

Type	Dose	Species	Method	
Chronic toxicity	NOAEL: 5000 mg/kg/d	rat, male/female	Oral	two-year

1,3-Butylene glycol (Butane-1,3-diol), CAS: 107-88-0

Assessment

Based on available data, the classification criteria are not met for:

STOT RE***

Carcinogenicity, Mutagenicity, Reproductive toxicity

1,3-Butylene glycol (Butane-1,3-diol) (107-88-0)

Type	Dose	Species	Evaluation	Method	
Mutagenicity		rat, male/female	negative		in vivo
Reproductive toxicity	LOAEL 12000 mg/kg/d	rat		Oral	
Reproductive toxicity	NOAEL 5000 mg/kg/d	rat		Oral	
Developmental Toxicity	NOAEL 2500 mg/kg/d	rat		Oral	Maternal toxicity
Developmental Toxicity	NOAEL 12000 mg/kg/d	rat		Oral	Teratogenicity
Developmental Toxicity	LOAEL 5000 mg/kg/d	rat		Oral	Fetal toxicity
Developmental Toxicity	NOAEL 2500 mg/kg/d	rat		Oral	Fetal toxicity
Carcinogenicity	NOAEL 5000 mg/kg/d	rat, male/female		Oral	

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1,3-Butylene glycol (Butane-1,3-diol), CAS: 107-88-0

CMR Classification

The available data on CMR properties are summarized in the table above. They do not indicate a classification into categories 1A or 1B***

Evaluation

Did not show carcinogenic, teratogenic or mutagenic effects in animal experiments***

1,3-Butylene glycol (Butane-1,3-diol), CAS: 107-88-0

Aspiration toxicity

no data available***

Note

Special hazards or target organ effects are given as a generic warning, substance specific data is not available. Handle in accordance with good industrial hygiene and safety practice. Further details on substance data can be found in the registration dossier under the following link: <http://apps.echa.europa.eu/registered/registered-sub.aspx>.

SECTION 12: Ecological information

12.1. Toxicity

Acute aquatic toxicity			
1,3-Butylene glycol (Butane-1,3-diol) (107-88-0)			
Species	Exposure time	Dose	Method
Daphnia magna (Water flea)	48h	EC50: > 1000 mg/l	OECD 202
Desmodesmus subspicatus	72h	EC50: > 1070 mg/l (Growth rate)	OECD 201
Oryzias latipes (Medaka)	96h	LC50: > 100 mg/l	OECD 203
Activated sludge (bacteriae)	3 h	EC20: > 100 mg/l	OECD 209

Long term toxicity

1,3-Butylene glycol (Butane-1,3-diol) (107-88-0)				
Type	Species	Dose	Method	
Reproductive toxicity	Daphnia magna (Water flea)	EC50: > 85 mg/l/21d	OECD 202	

12.2. Persistence and degradability

1,3-Butylene glycol (Butane-1,3-diol), CAS: 107-88-0

Biodegradation

81 % (29 d), activated sludge (domestic), aerobic, non-adapted, OECD 301 B.

12.3. Bioaccumulative potential

log Pow -0,9 (measured) OECD 117

12.4. Mobility in soil

1,3-Butylene glycol (Butane-1,3-diol) (107-88-0)

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Type	Result	Method
Surface tension***	72,6 mN/m (1 g/l @ 20°C)***	OECD 115***

12.5 Other adverse effects

1,3-Butylene glycol (Butane-1,3-diol), CAS: 107-88-0

No data available***

Note

Avoid release to the environment.

SECTION 13: Disposal considerations

Product Information

Disposal required in compliance with all waste management related state and local regulations. The choice of the appropriate method of disposal depends on the product composition by the time of disposal as well as the local statutes and possibilities for disposal.

Uncleaned empty packaging

Contaminated packaging should be emptied as far as possible and after appropriate cleansing may be taken for reuse.

SECTION 14: Transport information

Section 14.1 - 14.6 ***

D.O.T. (49CFR) Not restricted

ICAO/IATA Not restricted

IMDG Not restricted

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code not applicable***

SECTION 15: Regulatory information

Federal and State Regulations

Components of the product are listed in the quoted regulations. For details please refer to the regulations directly. This list is not exhaustive, please check for other applicable regulations.

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Federal Regulations

This product is listed on the TSCA inventory

1,3-Butylene glycol (Butane-1,3-diol), CAS: 107-88-0
40CFR 63.100-.107, Table 1: Group II***

International Inventories

1,3-Butylene glycol (Butane-1,3-diol), CAS: 107-88-0

AICS (AU)
DSL (CA)
IECSC (CN)
EC-No. 2035297 (EU)
ENCS (2)-235 (JP)
ISHL (2)-235 (JP)
KECI KE-03787 (KR)
INSQ (MX)***
PICCS (PH)
TSCA (US)
NZIoC (NZ)
TCSI (TW)***

SECTION 16: Other information

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Hazard Rating Systems

NFPA (National Fire Protection Association)

Health Hazard 1***
Fire Hazard 1
Reactivity 0

HMIS (Hazardous Material Information System)

Health Hazard 1***
Flammability 1
Physical Hazard 0

Training advice

For effective first-aid, special training / education is needed.

Sources of key data used to compile the datasheet

Information contained in this safety data sheet is based on Oxea owned data and public sources deemed valid or acceptable. The absence of data elements required by ANSI or Annex II, Regulation 1907/2006/EC indicates, that no data meeting these requirements is available.

Further information for the safety data sheet

Changes against the previous version are marked by ***. Observe national and local legal requirements. For more information, other material safety data sheets or technical data sheets please consult the Oxea homepage (www.oxea-chemicals.com).

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Disclaimer

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End of Safety Data Sheet