

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 (REACH) Article 31, Annex II as amended



1,3-BG (Industrial Quality) 10010

Version / Revision 2.01
Supersedes Version 2.00***

Revision Date 25-Jan-2023
Issuing date 25-Jan-2023

SECTION 1: Identification of the substance / mixture and of the company / undertaking

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
EC No. 203-529-7
Registration number (REACH) 01-2119455875-25

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

Identified uses Polymer productions
pharmaceutical
Formulation
laboratory chemicals
Lubricant in medicale care
Ceramic pastes and glazes (dental technology)
Ingredient in fog machines
Intermediate
Consumer use of washing and cleaning products
Cosmetics, personal care products

Uses advised against None

1.3. Details of the supplier of the safety data sheet

Company/Undertaking Identification **OQ Chemicals GmbH**
Rheinpromenade 4A
D-40789 Monheim
Germany

Product Information Product Stewardship
FAX: +49 (0)208 693 2053
email: sc.psq@oq.com

1.4. Emergency telephone number

Emergency telephone number +44 (0) 1235 239 670 (UK)
available 24/7

National emergency telephone number National Poisons Information Centre
+353 (0)1 809 2166
available to the public 8 am - 10 pm
+353 (0)1 809 2566
available 24/7 for medical professionals

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

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Based on present data no classification and labelling is required according to Directive 1272/2008/EC and its amendments (CLP Regulation)

2.2. Label elements

Not required.

2.3. Other hazards

None known

PBT and vPvB assessment This substance is not considered to be persistent, bioaccumulating nor toxic (PBT), nor very persistent nor very bioaccumulating (vPvB)

Endocrine disrupting assessments The substance is not listed on the candidate list according to Art. 59(1), REACH. The substance was not assessed as having endocrine disrupting properties according to regulation 2017/2100/EU or 2018/605/EU.

SECTION 3: Composition / information on ingredients

3.1. Substances

Component	CAS-No	REACH-No	1272/2008/EC	Concentration (%)
1,3-Butylene glycol (Butane-1,3-diol)	107-88-0	01-2119455875-25	-	> 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.

Skin

Wash off immediately with plenty of water. 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.

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

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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

Suitable extinguishing media

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

Unsuitable Extinguishing Media

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

For non-emergency personnel: For personal protective equipment see section 8. 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

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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.

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).

Temperature class

T2

7.3. Specific end use(s)

Polymer productions
pharmaceutical
Formulation
laboratory chemicals
Lubricant in medicale care
Ceramic pastes and glazes (dental technology)
Ingredient in fog machines
Intermediate
Consumer use of washing and cleaning products
Cosmetics, personal care products

SECTION 8: Exposure controls / personal protection

8.1. Control parameters

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Exposure limits European Union

No exposure limits established

Exposure limits Ireland

No exposure limits established.

DNEL & PNEC

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

DN(M)EL - long-term exposure - systemic effects - Inhalation	No hazard identified
DN(M)EL - acute / short-term exposure - systemic effects - Inhalation	No hazard identified
DN(M)EL - long-term exposure - local effects - Inhalation	No hazard identified
DN(M)EL - acute / short-term exposure - local effects - Inhalation	No hazard identified
DN(M)EL - long-term exposure - systemic effects - Dermal	No hazard identified
DN(M)EL - acute / short-term exposure - systemic effects - Dermal	No hazard identified
DN(M)EL - long-term exposure - local effects - Dermal	No hazard identified
DN(M)EL - acute / short-term exposure - local effects - Dermal	No hazard identified
DN(M)EL - local effects - eyes	No hazard identified

General population

DN(M)EL - long-term exposure - systemic effects - Inhalation	No hazard identified
DN(M)EL - acute / short-term exposure - systemic effects - Inhalation	No hazard identified
DN(M)EL - long-term exposure - local effects - Inhalation	No hazard identified
DN(M)EL - acute / short-term exposure - local effects - Inhalation	No hazard identified
DN(M)EL - long-term exposure - systemic effects - Dermal	No hazard identified
DN(M)EL - acute / short-term exposure - systemic effects - Dermal	No hazard identified
DN(M)EL - long-term exposure - local effects - Dermal	No hazard identified
DN(M)EL - acute / short-term exposure - local effects - Dermal	No hazard identified
DN(M)EL - long-term exposure - systemic effects - Oral	25 mg/kg bw/day
DN(M)EL - acute / short-term exposure - systemic effects - Oral	No hazard identified
DN(M)EL - local effects - eyes	No hazard identified

Environment

PNEC aqua - freshwater	No hazard identified
PNEC aqua - marine water	No hazard identified
PNEC STP	1803,5 mg/l
PNEC sediment - freshwater	No hazard identified
PNEC sediment - marine water	No hazard identified
PNEC Air	No hazard identified
PNEC soil	No hazard identified
Secondary poisoning	No potential for bioaccumulation

8.2. Exposure controls

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Special adaptations (REACH)

Not applicable.

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.

Personal protective equipment

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.

Equipment should conform to EN 166

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.

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.

Additional advice

Further details on substance data can be found in the registration dossier under the following link:
<http://echa.europa.eu/information-on-chemicals/registered-substances>.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state liquid

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Colour	colourless				
Odour	weak				
Odour threshold	No data available				
Melting point/freezing point	-57 °C				
Method	DIN ISO 3016				
Boiling point or initial boiling point and boiling range	209 °C @ 1013 hPa				
Method	OECD 103				
Flammability	Even if not classified as flammable, the product is capable of catching fire or being set on fire.***				
Lower explosion limit	1,9 Vol %				
Upper explosion limit	12,6 Vol %				
Flash point	115 °C @ 1013 hPa				
Method	ISO 2719				
Autoignition temperature	410 °C @ 1019 hPa				
Method	DIN 51794				
Decomposition temperature	No data available				
pH	6 - 9				
Kinematic Viscosity	131,340 mm ² /s @ 20 °C				
Method	DIN 51562				
Solubility	miscible, in water, OECD 105				
Partition coefficient n-octanol/water (log value)	- 0,9 (measured) OECD 117				
Vapour pressure					
Values [hPa]	Values [kPa]	Values [atm]	@ °C	@ °F	Method
< 1	< 0,1	< 0,001	20	68	
1,8	0,18	0,002	50	122	
Density and/or relative density					
Values	@ °C	@ °F	Method		
1,0035	20	68	DIN 51757		
Relative vapour density	3,2 (Air = 1) @ 20 °C (68 °F)				
Particle characteristics	not applicable				

9.2. Other information

Explosive properties	Does not apply, substance is not explosive. There are no chemical groups associated with explosive properties
Oxidizing properties	Does not apply, substance is not oxidising. There are no chemical groups associated with oxidizing properties
Molecular weight	90,12
Molecular formula	C ₄ H ₁₀ O ₂
Dissociation constant	pKa 15,1 @ 25 °C (77 °F) OECD 112
Refractive index	1,440 @ 20 °C
Surface tension	72,6 mN/m (1 g/l @ 20°C (68°F)), OECD 115
Evaporation rate	No data available
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

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Stable under recommended storage conditions.

10.3. Possibility of hazardous reactions

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 hazard classes as defined in Regulation (EC) No 1272/2008

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

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	292 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		

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	
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Skin	Human experience	not sensitizing	Patch-test	
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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 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	
Subchronic toxicity	NOAEL: 6000 mg/kg/d	dog, male/female	Oral	90-day
Chronic toxicity	NOAEL: 5000 mg/kg/d	rat, male/female	Oral	two-year
Chronic toxicity	NOAEL: >= 750 mg/kg/d	dog, 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 12000 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	

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

Main symptoms

cough.

Target Organ Systemic Toxicant - Single exposure

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

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STOT SE

Target Organ Systemic Toxicant - Repeated exposure

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

STOT RE

Aspiration toxicity

no data available

11.2. Information on other hazards

Endocrine disrupting properties

The substance has not been identified as having endocrine disrupting properties in accordance with section 2.3.

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://echa.europa.eu/information-on-chemicals/registered-substances>.

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 read across
Desmodesmus subspicatus	72h	EC50: > 1070 mg/l (Growth rate)	OECD 201
Oryzias latipes (Medaka)	96h	LC50: > 100 mg/l	OECD 203 read across
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 read across
Aquatic toxicity	Scenedesmus subspicatus	NOEC: 1070 mg/l (3d)	OECD 201

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.

Abiotic Degradation		
1,3-Butylene glycol (Butane-1,3-diol) (107-88-0)		
Type	Result	Method
Hydrolysis	not expected	
Photolysis	Half-life (DT50): 27 h	calculated

12.3. Bioaccumulative potential

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1,3-Butylene glycol (Butane-1,3-diol) (107-88-0)		
Type	Result	Method
log Pow	- 0,9	measured, OECD 117
BCF	No potential for bioaccumulation	

12.4. Mobility in soil

1,3-Butylene glycol (Butane-1,3-diol) (107-88-0)		
Type	Result	Method
Surface tension	72,6 mN/m (1 g/l @ 20°C (68°F))	OECD 115
Adsorption/Desorption	log Koc: 0	calculated
Distribution to environmental compartments	no data available	

12.5. Results of PBT and vPvB assessment

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

PBT and vPvB assessment

This substance is not considered to be persistent, bioaccumulating nor toxic (PBT), nor very persistent nor very bioaccumulating (vPvB)

12.6. Endocrine disrupting properties

The substance has not been identified as having endocrine disrupting properties in accordance with section 2.3.

12.7. Other adverse effects

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

No data available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

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

ADR/RID

Not restricted

ADN

ADN: Container and Tanker
Not restricted

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ICAO-TI / IATA-DGR

Not restricted

IMDG

Not restricted

14.7. Maritime transport in bulk according to IMO instruments not applicable

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

Regulation 1272/2008, Annex VI

not listed

DI 2012/18/EU (Seveso III)

Category not subject

DI 1999/13/EC (VOC Guideline)

Component	Status
1,3-Butylene glycol (Butane-1,3-diol) CAS: 107-88-0	not subject

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)

15.2. Chemical safety assessment

The Chemical Safety Report (CSR) has been generated. As this product is not hazardous under REACH, no Exposure Scenarios have been calculated.

SECTION 16: Other information

Abbreviations

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A table of terms and abbreviations can be found under the following link:
http://echa.europa.eu/documents/10162/13632/information_requirements_r20_en.pdf

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 OQ owned data and public sources deemed valid or acceptable. The absence of data elements required by OSHA, 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 OQ homepage (www.chemicals.oq.com).

The annex is not required because the substance is not hazardous under REACH

Disclaimer

For industrial use only. The information contained herein is accurate to the best of our knowledge. We do not suggest or guarantee that any hazards listed herein are the only ones which exist. OQ Chemicals makes no warranty of any kind, express or implied, concerning the safe use of this material in your process or in combination with other substances. User has the sole responsibility to determine the suitability of the materials for any use and the manner of use contemplated. User must meet all applicable safety and health standards.

End of Safety Data Sheet