

Safety Data Sheet

according to Regulation (EC) No 1907/2006

Ethylene glycol monobutylether (butyl glycol) for synthesis

Revision date: 30.11.2022

Product code: 25294

Page 1 of 12

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

1.1. Product identifier

Ethylene glycol monobutylether (butyl glycol) for synthesis

REACH Registration Number: 01-2119475108-36-XXXX
CAS No: 111-76-2
Index No: 603-014-00-0
EC No: 203-905-0

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

Use of the substance/mixture

Laboratory chemicals
Industrial uses: Uses of substances as such or in preparations at industrial sites
Professional uses: Public domain (administration, education, entertainment, services, craftsmen)

Uses advised against

Do not use for private purposes (household).

1.3. Details of the supplier of the safety data sheet

Company name: Fa. Bernd Kraft GmbH
Street: Stempelstraße 6
Place: D-47167 Duisburg
Telephone: 0203/5194-0
e-mail: info@berndkraft.de
Contact person: Abteilung Produktsicherheit
e-mail: produktsicherheit@berndkraft.de
Internet: www.berndkraft.de
Responsible Department: Abteilung Produktsicherheit
Telefax: 0203/5194-290
Telephone: 0203/5194-107/117

1.4. Emergency telephone number:

For Hazardous Materials [or Dangerous Goods] Incidents Spill, Leak, Fire, Exposure, or Accident Call CHEMTREC Day or Night Within USA and Canada: 1-800-424-9300 Outside USA and Canada: +1 703-741-5970 (collect calls accepted)

Further Information

No data available

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Regulation (EC) No 1272/2008

Acute Tox. 3; H331
Acute Tox. 4; H302
Skin Irrit. 2; H315
Eye Irrit. 2; H319

Full text of hazard statements: see SECTION 16.

2.2. Label elements

Regulation (EC) No 1272/2008

Signal word: Danger

Pictograms:



Ethylene glycol monobutylether (butyl glycol) for synthesis

Revision date: 30.11.2022

Product code: 25294

Page 2 of 12

Hazard statements

H302 Harmful if swallowed.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H331 Toxic if inhaled.

Precautionary statements

P280 Wear protective gloves/protective clothing/eye protection/face protection.
P302+P352 IF ON SKIN: Wash with plenty of water.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P313 If eye irritation persists: Get medical advice/attention.
P403+P233 Store in a well-ventilated place. Keep container tightly closed.

2.3. Other hazards

No data available

SECTION 3: Composition/information on ingredients

3.1. Substances

Sum formula: C₄H₉OCH₂CH₂OH
Molecular weight: 118,17 g/mol

Hazardous components

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	Classification (Regulation (EC) No 1272/2008)			
111-76-2	2-butoxyethanol			100 %
	203-905-0	603-014-00-0	01-2119475108-36-XXXX	
	Acute Tox. 3, Acute Tox. 4, Skin Irrit. 2, Eye Irrit. 2; H331 H302 H315 H319			

Full text of H and EUH statements: see section 16.

Specific Conc. Limits, M-factors and ATE

CAS No	EC No	Chemical name	Quantity
	Specific Conc. Limits, M-factors and ATE		
111-76-2	203-905-0	2-butoxyethanol	100 %
	inhalation: ATE 3 mg/l (vapours); dermal: LD50 = > 2000 mg/kg; oral: ATE 1200 mg/kg		

Further Information

This product does not contain substances of very high concern according to Regulation (EC) No 1907/2006 (REACH), Article 57 above the respective regulatory concentration limit of = 0.1 % (w/w).

SECTION 4: First aid measures

4.1. Description of first aid measures

General information

Self-protection of the first aider Do not breathe vapour/aerosol.

After inhalation

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

After contact with skin

Wash immediately with: Water
Take off immediately all contaminated clothing and wash it before reuse.
Call a physician immediately.

Ethylene glycol monobutylether (butyl glycol) for synthesis

Revision date: 30.11.2022

Product code: 25294

Page 3 of 12

After contact with eyes

Rinse immediately carefully and thoroughly with eye-bath or water.
Remove contact lenses, if present and easy to do. Continue rinsing.
Consult an ophthalmologist.

After ingestion

Rinse mouth immediately and drink plenty of water.
Call a physician immediately.

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

Headache
Pulmonary oedema
Irritant
Dyspnoea
Cough
Dizziness
Agitation
Vomiting
Gastrointestinal complaints

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

No data available

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Foam
Carbon dioxide (CO₂)
Extinguishing powder

Unsuitable extinguishing media

no restriction

5.2. Special hazards arising from the substance or mixture

Combustible liquids
Hazardous combustion products
In case of fire may be liberated:
Carbon dioxide (CO₂) Carbon monoxide
In case of warming:
Vapours are heavier than air, spread along floors and form explosive mixtures with air.

5.3. Advice for firefighters

In case of fire: Wear self-contained breathing apparatus.
In case of fire and/or explosion do not breathe fumes.
Avoid contact with skin, eyes and clothes.

Additional information

Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.
Move undamaged containers from immediate hazard area if it can be done safely.
Use water spray jet to protect personnel and to cool endangered containers.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General advice

Do not breathe vapour/aerosol.

For non-emergency personnel

Provide adequate ventilation.
Use personal protection equipment.

Ethylene glycol monobutylether (butyl glycol) for synthesis

Revision date: 30.11.2022

Product code: 25294

Page 4 of 12

Avoid contact with skin, eyes and clothes.
Remove persons to safety.
Emergency procedures
Do not breathe dust/fume/gas/mist/vapours/spray.

For emergency responders

Precautionary statements For emergency responders : Personal protection equipment: see section 8

6.2. Environmental precautions

Do not allow to enter into surface water or drains.

6.3. Methods and material for containment and cleaning up

For containment

Cover drains.
Prevent spread over a wide area (e.g. by containment or oil barriers).
Collect in closed and suitable containers for disposal.
Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents).

For cleaning up

Clean contaminated articles and floor according to the environmental legislation.

Other information

Provide adequate ventilation.
Do not breathe dust/fume/gas/mist/vapours/spray.
Wear breathing apparatus if exposed to vapours/dusts/aerosols.

6.4. Reference to other sections

Safe handling: see section 7
Personal protection equipment: see section 8
Disposal: see section 13

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling

Read label before use. Handle and open container with care.
When using do not eat, drink, smoke, sniff. Keep container tightly closed.
Use personal protection equipment. Use extractor hood (laboratory).
Do not breathe gas/fumes/vapour/spray. Provide adequate ventilation.

Advice on protection against fire and explosion

Usual measures for fire prevention.
In case of warming:
Vapours are heavier than air, spread along floors and form explosive mixtures with air.

Advice on general occupational hygiene

Keep away from food, drink and animal feedingstuffs.

Further information on handling

Take off immediately all contaminated clothing and wash it before reuse.
Draw up and observe skin protection programme. Wash hands and face before breaks and after work and take a shower if necessary. If handled uncovered, arrangements with local exhaust ventilation have to be used.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Store in a place accessible by authorized persons only.
Store in a well-ventilated place.
Keep container tightly closed and dry.
Unsuitable container/equipment material: Light metal

Hints on joint storage

TRGS 510

Ethylene glycol monobutylether (butyl glycol) for synthesis

Revision date: 30.11.2022

Product code: 25294

Page 5 of 12

Further information on storage conditions

Keep cool. Protect from sunlight.
storage temperature < +30°C
Protect against: Light

7.3. Specific end use(s)

Laboratory chemicals

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits

CAS No	Substance	ppm	mg/m ³	fib/cm ³	Category	Origin
111-76-2	2-Butoxyethanol (EGBE)	20	98		TWA (8 h)	
		50	246		STEL (15 min)	

Biological limit values

CAS No	Substance	Parameter	Value	Test material	Sampling time
111-76-2	2-Butoxyethanol	BAA	200 mg/g	Creatinine	End of shift

DNEL/DMEL values

CAS No	Substance	Exposure route	Effect	Value
111-76-2	2-butoxyethanol			
	Consumer DNEL, acute	oral	systemic	26,7 mg/kg bw/day
	Consumer DNEL, long-term	oral	systemic	6,3 mg/kg bw/day
	Worker DNEL, long-term	inhalation	systemic	98 mg/m ³
	Worker DNEL, acute	inhalation	systemic	1091 mg/m ³
	Worker DNEL, acute	inhalation	local	246 mg/m ³
	Worker DNEL, long-term	dermal	systemic	125 mg/kg bw/day
	Worker DNEL, acute	dermal	systemic	89 mg/kg bw/day
	Consumer DNEL, long-term	inhalation	systemic	59 mg/m ³
	Consumer DNEL, acute	inhalation	systemic	426 mg/m ³
	Consumer DNEL, acute	inhalation	local	147 mg/m ³
	Consumer DNEL, long-term	dermal	systemic	75 mg/kg bw/day
	Consumer DNEL, acute	dermal	systemic	89 mg/kg bw/day

Ethylene glycol monobutylether (butyl glycol) for synthesis

Revision date: 30.11.2022

Product code: 25294

Page 6 of 12

PNEC values

CAS No	Substance	
Environmental compartment		Value
111-76-2	2-butoxyethanol	
Freshwater		8,8 mg/l
Freshwater (intermittent releases)		26,4 mg/l
Marine water		0,88 mg/l
Freshwater sediment		34,6 mg/kg
Marine sediment		3,46 mg/kg
Secondary poisoning		20 mg/kg
Micro-organisms in sewage treatment plants (STP)		463 mg/l
Soil		2,33 mg/kg

8.2. Exposure controls

Appropriate engineering controls

Technical measures and the application of suitable work processes have priority over personal protection equipment.

If handled uncovered, arrangements with local exhaust ventilation have to be used.

Individual protection measures, such as personal protective equipment

Eye/face protection

goggles

Face protection umbrella

Hand protection

When handling with chemical substances, protective gloves must be worn with the CE-label including the four control digits. The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

Protective gloves are recommended Company KCL GmbH, D-36124 Eichenzell, email: vertrieb@kcl.de With specification (test according to EN374):

By long-term hand contact

Trade name/designation: KCL 898 Butoject®

Recommended material: Butyl caoutchouc (butyl rubber) 0,7 mm

Wearing time with permanent contact: > 480 min

By short-term hand contact

Trade name/designation: KCL 730 Camatril® Velours

Recommended material: NBR (Nitrile rubber) 0,4 mm

Wearing time with occasional contact (splashes): > 120 min

The breakthrough times stated above were determined by KCL in laboratory tests acc. to EN374 with samples of the recommended glove types. This recommendation applies only to the product stated in the safety data sheet supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Skin protection

Take off immediately all contaminated clothing and wash it before reuse.

Wear fire resistant or flame retardant clothing.

Ethylene glycol monobutylether (butyl glycol) for synthesis

Revision date: 30.11.2022

Product code: 25294

Page 7 of 12

Wash hands and face before breaks and after work and take a shower if necessary.

Draw up and observe skin protection programme.

Respiratory protection

Wear breathing apparatus if exposed to vapours/dusts/aerosols.

Filtering device with filter or ventilator filtering device of type: A

Thermal hazards

No data available

Environmental exposure controls

Do not allow to enter into surface water or drains.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state:	Liquid
Colour:	colourless
Odour:	like: Ether
Odour threshold:	No data available

	Test method
Melting point/freezing point:	-74,8 °C
Boiling point or initial boiling point and boiling range:	171 °C
Flammability	
Solid/liquid:	No data available
Gas:	No data available
Lower explosion limits:	1,1 vol. %
Upper explosion limits:	10,6 vol. %
Flash point:	67 °C
Auto-ignition temperature:	No data available
Decomposition temperature:	No data available
pH-Value (at 20 °C):	No data available
Viscosity / kinematic: (at 20 °C)	3,642 mm ² /s
Water solubility: (at 20 °C)	900 g/L
Solubility in other solvents	
No data available	
Dissolution rate:	No data available
Partition coefficient n-octanol/water:	log Pow: 0,81 (25 °C)
Dispersion stability:	No data available
Vapour pressure: (at 20 °C)	1,17 hPa
Vapour pressure:	No data available
Density:	0,9 g/cm ³
Relative density:	No data available
Bulk density:	No data available
Relative vapour density:	No data available
Particle characteristics:	No data available

9.2. Other information

Information with regard to physical hazard classes

Explosive properties

Vapours are heavier than air, spread along floors and form explosive mixtures with air.

Sustaining combustion: Sustaining combustion

Self-ignition temperature: 230°C

Ethylene glycol monobutylether (butyl glycol) for synthesis

Revision date: 30.11.2022

Product code: 25294

Page 8 of 12

Solid:	No data available
Gas:	No data available
Oxidizing properties	
No data available	
Other safety characteristics	
Evaporation rate:	No data available
Solvent separation test:	No data available
Solvent content:	No data available
Solid content:	No data available
Sublimation point:	No data available
Softening point:	No data available
Pour point:	No data available
:	No data available
Viscosity / dynamic: (at 20 °C)	3,3 mPa·s
Flow time:	No data available

Further Information

No data available

SECTION 10: Stability and reactivity

10.1. Reactivity

In case of warming:
Vapours may form explosive mixtures with air.

10.2. Chemical stability

Protect against:
Light
Air

10.3. Possibility of hazardous reactions

Aluminium
Oxidising agent, strong

10.4. Conditions to avoid

Heat

10.5. Incompatible materials

No data available

10.6. Hazardous decomposition products

Peroxides

Further information

No data available

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Toxicokinetics, metabolism and distribution

No data available

Acute toxicity

Toxic if inhaled.
Harmful if swallowed.

Ethylene glycol monobutylether (butyl glycol) for synthesis

Revision date: 30.11.2022

Product code: 25294

Page 9 of 12

CAS No	Chemical name				
	Exposure route	Dose	Species	Source	Method
111-76-2	2-butoxyethanol				
	oral	ATE 1200 mg/kg			
	dermal	LD50 > 2000 mg/kg	Rat	Study report (1993)	OECD Guideline 402
	inhalation vapour	ATE 3 mg/l			

Irritation and corrosivity

Causes skin irritation.

Causes serious eye irritation.

Sensitising effects

Based on available data, the classification criteria are not met.

Carcinogenic/mutagenic/toxic effects for reproduction

Based on available data, the classification criteria are not met.

STOT-single exposure

Based on available data, the classification criteria are not met.

Liver and kidney damage

STOT-repeated exposure

Based on available data, the classification criteria are not met.

Aspiration hazard

Based on available data, the classification criteria are not met.

Information on likely routes of exposure

No data available

Specific effects in experiment on an animal

No data available

Additional information on tests

No data available

Practical experience

No data available

11.2. Information on other hazards

Endocrine disrupting properties

No data available

Other information

No data available

Further information

Headache

Pulmonary oedema

Irritant

Dyspnoea

Cough

Dizziness

Agitation

Vomiting

Gastrointestinal complaints

SECTION 12: Ecological information

12.1. Toxicity

Based on available data, the classification criteria are not met.

Ethylene glycol monobutylether (butyl glycol) for synthesis

Revision date: 30.11.2022

Product code: 25294

Page 10 of 12

CAS No	Chemical name						
	Aquatic toxicity	Dose	[h] [d]	Species	Source	Method	
111-76-2	2-butoxyethanol						
	Acute fish toxicity	LC50 mg/l	1474	96 h	Oncorhynchus mykiss	Toxicol Mech Meth 12, 255-63 (2002)	OECD Guideline 203
	Acute algae toxicity	ErC50	911 mg/l	72 h	Pseudokirchneriella subcapitata	Toxicol Mech Meth 12, 255-63 (2002)	OECD Guideline 201
	Acute crustacea toxicity	EC50 mg/l	1550	48 h	Daphnia magna	Toxicol Mech Meth 12, 255-63 (2002)	OECD Guideline 202
	Fish toxicity	NOEC mg/l	> 100	21 d	Danio rerio	Toxicol Mech Meth 12, 255-63 (2002)	OECD Guideline 204
	Crustacea toxicity	NOEC	100 mg/l	21 d	Daphnia magna	Toxicol Mech Meth 12, 255-63 (2002)	OECD Guideline 211

12.2. Persistence and degradability

90,4 %; 28 d; aerob
OECD-301B
Readily biodegradable (according to OECD criteria).

12.3. Bioaccumulative potential

log Pow: 0,81 (25 °C)
No indication of bioaccumulation potential.

Partition coefficient n-octanol/water

CAS No	Chemical name	Log Pow
111-76-2	2-butoxyethanol	0,81

12.4. Mobility in soil

No data available

12.5. Results of PBT and vPvB assessment

This substance does not meet the PBT/vPvB criteria of REACH, annex XIII.
c

12.6. Endocrine disrupting properties

This substance does not have endocrine disrupting properties with respect to non-target organisms.
c

12.7. Other adverse effects

Do not allow to enter into surface water or drains.

Further information

Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Disposal recommendations

Waste disposal according to directive 2008/98/EC, covering waste and dangerous waste.
Send to a physico-chemical treatment facility under observation of official regulations.
Do not empty into drains.

Contaminated packaging

Handle contaminated packages in the same way as the substance itself.

Ethylene glycol monobutylether (butyl glycol) for synthesis

Revision date: 30.11.2022

Product code: 25294

Page 11 of 12

The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.

SECTION 14: Transport information

Land transport (ADR/RID)

14.1. UN number or ID number:	UN 2810
14.2. UN proper shipping name:	TOXIC LIQUID, ORGANIC, N.O.S. (2-butoxyethanol)
14.3. Transport hazard class(es):	6.1
14.4. Packing group:	III
Hazard label:	6.1
Classification code:	T1
Special Provisions:	274 614
Limited quantity:	5 L
Excepted quantity:	E1
Transport category:	2
Hazard No:	60
Tunnel restriction code:	E

Inland waterways transport (ADN)

14.1. UN number or ID number:	UN 2810
14.2. UN proper shipping name:	TOXIC LIQUID, ORGANIC, N.O.S. (2-butoxyethanol)
14.3. Transport hazard class(es):	6.1
14.4. Packing group:	III
Hazard label:	6.1
Classification code:	T1
Special Provisions:	274 614 802
Limited quantity:	5 L
Excepted quantity:	E1

Marine transport (IMDG)

14.1. UN number or ID number:	UN 2810
14.2. UN proper shipping name:	TOXIC LIQUID, ORGANIC, N.O.S. (2-butoxyethanol)
14.3. Transport hazard class(es):	6.1
14.4. Packing group:	III
Hazard label:	6.1
Special Provisions:	223, 274
Limited quantity:	5 L
Excepted quantity:	E1
EmS:	F-A, S-A

Air transport (ICAO-TI/IATA-DGR)

14.1. UN number or ID number:	UN 2810
14.2. UN proper shipping name:	TOXIC LIQUID, ORGANIC, N.O.S. (2-butoxyethanol)
14.3. Transport hazard class(es):	6.1
14.4. Packing group:	III
Hazard label:	6.1
Special Provisions:	A3 A4 A137
Limited quantity Passenger:	2 L
Passenger LQ:	Y642
Excepted quantity:	E1
IATA-packing instructions - Passenger:	655
IATA-max. quantity - Passenger:	60 L
IATA-packing instructions - Cargo:	663
IATA-max. quantity - Cargo:	220 L

14.5. Environmental hazards

Ethylene glycol monobutylether (butyl glycol) for synthesis

Revision date: 30.11.2022

Product code: 25294

Page 12 of 12

ENVIRONMENTALLY HAZARDOUS: No

14.6. Special precautions for user

No dangerous good in sense of this transport regulation.

14.7. Maritime transport in bulk according to IMO instruments

No dangerous good in sense of this transport regulation.

SECTION 15: Regulatory information

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

EU regulatory information

Restrictions on use (REACH, annex XVII):

Entry 3

Information according to 2012/18/EU (SEVESO III): H2 ACUTE TOXIC

National regulatory information

Employment restrictions: Observe restrictions to employment for juveniles according to the 'juvenile work protection guideline' (94/33/EC). Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.

Water hazard class (D): 1 - slightly hazardous to water

SECTION 16: Other information

Changes

This data sheet contains changes from the previous version in section(s): 1,2,4,6,7,8,9,12,14,15.

Relevant H and EUH statements (number and full text)

H302 Harmful if swallowed.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H331 Toxic if inhaled.

Further Information

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material. The information is based on the present level of our knowledge. It does not, however, give assurance of product properties and establishes no contract legal rights. The receiver of our product is singularly responsible for adhering to existing laws and regulations.