

SECTION 1: Identification

1.1. Identification

Product form	: Substance
Trade name	: BUTYL CELLOSOLVE (EB)
CAS-No.	: 111-76-2
Product code	: TS103
Formula	: C6H14O2
Synonyms	: 2-butoxyethanol / BGE / butyl cellosolve / butyl OXITOL / butylglycol ether / EGBE / ethanol, 2-butoxy- / ethylene glycol monobutyl ether / monobutyl ether of ethyleneglycol
BIG no	: 50483

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

Use of the substance/mixture	: Solvent Chemical intermediate
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1.3. Details of the supplier of the safety data sheet

Crown Paint Company
1801 W. Sheridan
Oklahoma City, 73106 - United States
T 1-405-232-8580
crownpaint@polyglasscoatings.com - www.crownpaintok.com

1.4. Emergency telephone number

Emergency number	: In the event of an emergency involving dangerous goods: in Canada call CHEMTREC at 1-800-424-9300 24 hours / 7 days (Account Name for Canada Endura Manufacturing Co. Ltd.) in the US call CHEMTREC at 1-800-424-9300 24 hours / 7 days (Account Name for US is Polyglass Coatings)
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SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS US classification

Flammable liquids Category 4	H227	Combustible liquid
Acute toxicity (oral) Category 4	H302	Harmful if swallowed
Acute toxicity (dermal) Category 4	H312	Harmful in contact with skin
Acute toxicity (inhalation:dust,mist) Category 4	H332	Harmful if inhaled
Skin corrosion/irritation Category 2	H315	Causes skin irritation
Serious eye damage/eye irritation Category 2	H319	Causes serious eye irritation
Full text of H statements : see section 16		

2.2. Label elements

GHS US labeling

Hazard pictograms (GHS-US)



GHS07

Signal word (GHS-US)

: Warning

Hazard statements (GHS-US)

: H227 - Combustible liquid
H302+H312+H332 - Harmful if swallowed, in contact with skin or if inhaled
H315 - Causes skin irritation
H319 - Causes serious eye irritation

Precautionary statements (GHS-US)

: P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P261 - Avoid breathing dust/fume/gas/mist/vapors/spray.
P264 - Wash 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.
P301+P312 - IF SWALLOWED: call a POISON CENTER or doctor/physician if you feel unwell

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P302+P352 - IF ON SKIN: Wash with plenty of soap and water
P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing
P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P312 - Call a poison center/doctor/physician if you feel unwell
P321 - Specific treatment (see 4.1. First aid procedures on this label)
P322 - Specific treatment (see supplemental first aid instruction on this label)
P330 - Rinse mouth.
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 chemical powder, alcohol-resistant foam, carbon dioxide (CO₂) to extinguish
P403+P235 - Store in a well-ventilated place. Keep cool.
P501 - Dispose of contents/container in accordance with all local, regional, national and international regulations.

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/Information on ingredients

3.1. Substances

Substance type : Mono-constituent

Name	Product identifier	wt%	GHS US classification
BUTYL CELLOSOLVE (EB) (Main constituent)	(CAS-No.) 111-76-2	100	Flam. Liq. 4, H227 Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Dermal), H312 Acute Tox. 4 (Inhalation:dust,mist), H332 Skin Irrit. 2, H315 Eye Irrit. 2, H319

Full text of H-phrases: see section 16

3.2. Mixtures

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

- First-aid measures general : Check the vital functions. Unconscious: maintain adequate airway and respiration. Respiratory arrest: artificial respiration or oxygen. Cardiac arrest: perform resuscitation. Victim conscious with laboured breathing: half-seated. Victim in shock: on his back with legs slightly raised. Vomiting: prevent asphyxia/aspiration pneumonia. Prevent cooling by covering the victim (no warming up). Keep watching the victim. Give psychological aid. Keep the victim calm, avoid physical strain. Depending on the victim's condition: doctor/hospital. Never give alcohol to drink. Call a poison center/doctor/physician if you feel unwell.
- First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing. Remove the victim into fresh air. Respiratory problems: consult a doctor/medical service. Call a poison center/doctor/physician if you feel unwell.
- First-aid measures after skin contact : Wash immediately with lots of water. Soap may be used. Do not apply (chemical) neutralizing agents without medical advice. Take victim to a doctor if irritation persists. Wash skin with plenty of water. Take off contaminated clothing. If skin irritation occurs: Get medical advice/attention.
- First-aid measures after eye contact : Rinse immediately with plenty of water. Remove contact lenses, if present and easy to do. Continue rinsing. Do not apply (chemical) neutralizing agents without medical advice. Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
- First-aid measures after ingestion : Rinse mouth with water. Do not apply (chemical) neutralizing agents without medical advice. Call Poison Information Centre (www.big.be/antigif.html). Consult a doctor/medical service if you feel unwell. Ingestion of large quantities: immediately to hospital. Take the container/vomit to the doctor/hospital. Give activated charcoal. Rinse mouth. Call a poison center/doctor/physician if you feel unwell.

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

- Symptoms/effects after inhalation : EXPOSURE TO HIGH CONCENTRATIONS: Nausea. Headache. Dizziness. Disturbances of consciousness. Central nervous system depression. Mental confusion. Runny nose. Metal taste.

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Symptoms/effects after skin contact	: ON CONTINUOUS EXPOSURE/CONTACT: Tingling/irritation of the skin. Red skin. Symptoms similar to those listed under inhalation. Irritation.
Symptoms/effects after eye contact	: No effects known. Irritation of the eye tissue. Irritation to eyes.
Symptoms/effects after ingestion	: AFTER INGESTION OF HIGH QUANTITIES: Dry/sore throat. Risk of aspiration pneumonia. Central nervous system depression. Gastrointestinal complaints. Symptoms similar to those listed under inhalation. Change in the haemogramme/blood composition. Change in urine composition. Irritation of the oral mucous membranes.
Chronic symptoms	: No effects known.

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

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	: Quick-acting ABC powder extinguisher. Quick-acting BC powder extinguisher. Quick-acting class B foam extinguisher. Quick-acting CO2 extinguisher. Class B foam (alcohol-resistant). Water spray if puddle cannot expand. Water spray. Dry powder. Foam. Carbon dioxide.
Unsuitable extinguishing media	: Water (quick-acting extinguisher, reel); risk of puddle expansion. Water; risk of puddle expansion.

5.2. Special hazards arising from the substance or mixture

Fire hazard	: DIRECT FIRE HAZARD: Material presenting a fire hazard. INDIRECT FIRE HAZARD: Temperature above flashpoint: higher fire/explosion hazard. Combustible liquid.
Explosion hazard	: INDIRECT EXPLOSION HAZARD: Reactions with explosion hazards: see "Reactivity Hazard".
Reactivity	: On exposure to air: peroxidation resulting in increased fire or explosion risk. Reacts violently with (strong) oxidizers: (increased) risk of fire/explosion. Reacts violently with (some) bases: (increased) risk of fire.

5.3. Advice for firefighters

Precautionary measures fire	: Exposure to fire/heat: keep upwind. Exposure to fire/heat: seal off low-lying areas. Exposure to fire/heat: have neighbourhood close doors and windows.
Firefighting instructions	: Cool tanks/drums with water spray/remove them into safety.
Protection during firefighting	: Heat/fire exposure: compressed air apparatus (EN 136 + EN 137). Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Protective equipment	: Gloves (EN 374). Face shield (EN 166). Protective clothing (EN 14605 or EN 13034).
Emergency procedures	: Ventilate spillage area. Mark the danger area. No naked flames. Wash contaminated clothes. No open flames, no sparks, and no smoking. Avoid contact with skin, eyes and clothing. Avoid breathing dust/fume/gas/mist/vapors/spray.

6.1.2. For emergency responders

Protective equipment	: Do not attempt to take action without suitable protective equipment. For further information refer to section 8 Exposure controls/personal protection".
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6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

For containment	: Contain released product, pump into suitable containers. Plug the leak, cut off the supply.
Methods for cleaning up	: Take up liquid spill into absorbent material. Take up liquid spill into absorbent material, e.g.: sand, earth, vermiculite or powdered limestone. Take up liquid spill into inert absorbent material. Scoop absorbed substance into closing containers. Clean contaminated surfaces with an excess of water. Wash clothing and equipment after handling. Notify authorities if product enters sewers or public waters.
Other information	: Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 8 : Exposure-controls/personal protection".

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SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Precautions for safe handling : Keep away from naked flames/heat. At temperature > flashpoint: use spark-/explosionproof appliances. Use earthed equipment. In finely divided state: use spark-/explosionproof appliances. Finely divided: keep away from ignition sources/sparks. Carry operations in the open/under local exhaust/ventilation or with respiratory protection. Comply with the legal requirements. Clean contaminated clothing. Keep container tightly closed. Before use: check for peroxides and eliminate them. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Wear personal protective equipment. Do not get in eyes, on skin, or on clothing. Use only outdoors or in a well-ventilated area. Avoid breathing dust/fume/gas/mist/vapors/spray.
- Hygiene measures : Observe normal hygiene standards. Avoid prolonged and repeated contact with skin. Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

- Storage conditions : Store in a well-ventilated place. Keep cool.
- Heat-ignition : KEEP SUBSTANCE AWAY FROM: heat sources.
- Information on mixed storage : KEEP SUBSTANCE AWAY FROM: combustible materials. oxidizing agents. (strong) bases.
- Storage area : Meet the legal requirements. Store in a dry area. Store in a dark area. Ventilation at floor level. May be stored under nitrogen.
- Special rules on packaging : SPECIAL REQUIREMENTS: closing. opaque. correctly labelled. meet the legal requirements. Secure fragile packagings in solid containers.
- Packaging materials : SUITABLE MATERIAL: steel. stainless steel. nickel. polyethylene. polypropylene. glass. MATERIAL TO AVOID: aluminium.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

BUTYL CELLOSOLVE (EB) (111-76-2)		
ACGIH	ACGIH TWA (ppm)	20 ppm
ACGIH	Remark (ACGIH)	Eye & URT irr
OSHA	OSHA PEL (TWA) (mg/m ³)	240 mg/m ³
OSHA	OSHA PEL (TWA) (ppm)	50 ppm

8.2. Exposure controls

- Appropriate engineering controls : Ensure good ventilation of the work station.
- Materials for protective clothing : GIVE EXCELLENT RESISTANCE: butyl rubber. viton. GIVE GOOD RESISTANCE: polyethylene. tetrafluoroethylene. polyethylene/ethylenevinylalcohol. nitrile rubber. neoprene. GIVE LESS RESISTANCE: PVA. GIVE POOR RESISTANCE: styrene-butadiene rubber. natural rubber. PVC.
- Hand protection : Protective gloves against chemicals (EN 374).
- Eye protection : Face shield (EN 166). Safety glasses.
- Skin and body protection : Protective clothing (EN 14605 or EN 13034).
- Respiratory protection : Full face mask with filter type A at conc. in air > exposure limit. Wear respiratory protection.
- Environmental exposure controls : Avoid release to the environment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

- Physical state : Liquid
- Appearance : Liquid.
- Color : No data available
- Odor : Pleasant odour Sweet odour
- Odor threshold : No data available
- pH : No data available in the literature
- Melting point : -75 °C (1013 hPa)
- Freezing point : No data available
- Boiling point : 171 °C (1013 atm)

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Critical temperature	: 368 °C
Critical pressure	: 32416 hPa
Flash point	: 67 °C (Closed cup, 1013 hPa, DIN 51758: Flash point (Pensky-Martens))
Relative evaporation rate (butyl acetate=1)	: 0.1
Relative evaporation rate (ether=1)	: 89
Flammability (solid, gas)	: No data available
Explosion limits	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available
Vapor pressure	: 0.8 hPa (20 °C)
Relative density	: 0.9 (20 °C, DIN 51757: Testing of mineral oils and related materials - Determination of density)
Relative vapor density at 20 °C	: 4.1
Relative density of saturated gas/air mixture	: 1
Specific gravity / density	: 900 kg/m ³ (DIN 51757: Testing of mineral oils and related materials - Determination of density)
Molecular mass	: 118.17 g/mol
Solubility	: Soluble in water. Soluble in ethanol. Soluble in ether. Soluble in acetone. Soluble in oils/fats. Soluble in aromatic hydrocarbons. Soluble in aliphatic hydrocarbons. Soluble in heptane. Soluble in tetrachloroethane. Water: 90 g/100ml (20 °C) Ethanol: complete Ether: complete Acetone: complete
Partition coefficient n-octanol/water (Log Pow)	: 0.81 (Experimental value, BASF test, 25 °C)
Auto-ignition temperature	: 230 °C (1013 hPa)
Decomposition temperature	: No data available
Viscosity	: No data available
Viscosity, kinematic	: 3.642 mm ² /s (20 °C)
Viscosity, dynamic	: 3.28 mPa.s (20 °C, Test data)

9.2. Other information

Specific conductivity	: > 10000 pS/m
Saturation concentration	: 5.8 g/m ³
VOC content (Regulatory - Less water and exempt solvents)	: 100 %
Other properties	: Gas/vapour heavier than air at 20°C. Clear. Slightly volatile. Neutral reaction. May generate electrostatic charges.

SECTION 10: Stability and reactivity

10.1. Reactivity

On exposure to air: peroxidation resulting in increased fire or explosion risk. Reacts violently with (strong) oxidizers: (increased) risk of fire/explosion. Reacts violently with (some) bases: (increased) risk of fire.

10.2. Chemical stability

Unstable on exposure to air.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

Avoid contact with hot surfaces. Heat. No flames, no sparks. Eliminate all sources of ignition.

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

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Likely routes of exposure : Dermal; Inhalation; Skin and eye contact

Acute toxicity : Not classified

BUTYL CELLOSOLVE (EB) (111-76-2)	
LD50 oral rat	1746 mg/kg body weight (Equivalent or similar to OECD 401, Rat, Male, Experimental value, Oral, 14 day(s))
LC50 inhalation rat (mg/l)	> 4.26 mg/l (4 h, Rat, Male / female, Experimental value, Inhalation (vapours), 14 day(s))
ATE US (oral)	1414 mg/kg body weight
ATE US (dermal)	1100 mg/kg body weight
ATE US (dust, mist)	1.5 mg/l/4h

Skin corrosion/irritation : Causes skin irritation.

pH: No data available in the literature

Serious eye damage/irritation : Causes serious eye irritation.

pH: No data available in the literature

Respiratory or skin sensitization : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

Reproductive toxicity : Not classified

Specific target organ toxicity – single exposure : Not classified

Specific target organ toxicity – repeated exposure : Not classified

Aspiration hazard : Not classified

Potential Adverse human health effects and symptoms : Harmful if swallowed. Causes skin irritation. Harmful in contact with skin. Harmful if inhaled. Causes serious eye irritation. Caution! Substance is absorbed through the skin.

Symptoms/effects after inhalation : EXPOSURE TO HIGH CONCENTRATIONS: Nausea. Headache. Dizziness. Disturbances of consciousness. Central nervous system depression. Mental confusion. Runny nose. Metal taste.

Symptoms/effects after skin contact : ON CONTINUOUS EXPOSURE/CONTACT: Tingling/irritation of the skin. Red skin. Symptoms similar to those listed under inhalation. Irritation.

Symptoms/effects after eye contact : No effects known. Irritation of the eye tissue. Irritation to eyes.

Symptoms/effects after ingestion : AFTER INGESTION OF HIGH QUANTITIES: Dry/sore throat. Risk of aspiration pneumonia. Central nervous system depression. Gastrointestinal complaints. Symptoms similar to those listed under inhalation. Change in the haemogramme/blood composition. Change in urine composition. Irritation of the oral mucous membranes.

Chronic symptoms : No effects known.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : Not classified as dangerous for the environment according to the criteria of Regulation (EC) No 1272/2008.

Ecology - air : Not included in the list of substances which may contribute to the greenhouse effect (IPCC). Not included in the list of fluorinated greenhouse gases (Regulation (EU) No 517/2014). Photolysis in the air. Not classified as dangerous for the ozone layer (Regulation (EC) No 1005/2009).

Ecology - water : Not harmful to crustacea (Daphnia). Not harmful to fishes. Groundwater pollutant. Not harmful to algae. Slightly harmful to bacteria. No significant hydrolysis.

BUTYL CELLOSOLVE (EB) (111-76-2)	
LC50 fish 1	1474 mg/l (OECD 203: Fish, Acute Toxicity Test, 96 h, Oncorhynchus mykiss, Static system, Fresh water, Experimental value, Lethal)
EC50 Daphnia 1	1550 mg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 48 h, Daphnia magna, Static system, Fresh water, Experimental value, Locomotor effect)
ErC50 (algae)	1840 mg/l (OECD 201: Alga, Growth Inhibition Test, 72 h, Pseudokirchneriella subcapitata, Static system, Fresh water, Experimental value, Nominal concentration)

12.2. Persistence and degradability

BUTYL CELLOSOLVE (EB) (111-76-2)	
Persistence and degradability	Readily biodegradable in water.

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12.3. Bioaccumulative potential

BUTYL CELLOSOLVE (EB) (111-76-2)	
Partition coefficient n-octanol/water (Log Pow)	0.81 (Experimental value, BASF test, 25 °C)
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).

12.4. Mobility in soil

BUTYL CELLOSOLVE (EB) (111-76-2)	
Surface tension	65.03 mN/m (20 °C, 2 g/l)
Partition coefficient n-octanol/water (Log Koc)	0.451 – 0.882 (log Koc, SRC PCKOCWIN v2.0, Calculated value)
Ecology - soil	Highly mobile in soil.

12.5. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

- Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.
- Product/Packaging disposal recommendations : Do not discharge into drains or the environment. Dispose of at authorized waste collection point. Remove waste in accordance with local and/or national regulations. Hazardous waste shall not be mixed together with other waste. Different types of hazardous waste shall not be mixed together if this may entail a risk of pollution or create problems for the further management of the waste. Hazardous waste shall be managed responsibly. All entities that store, transport or handle hazardous waste shall take the necessary measures to prevent risks of pollution or damage to people or animals.
- Additional information : Hazardous waste according to Directive 2008/98/EC, as amended by Regulation (EU) No 1357/2014 and Regulation (EU) No 2017/997.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT
Not regulated for transport

Transportation of Dangerous Goods

No additional information available

Transport by sea

No additional information available

Air transport

No additional information available

SECTION 15: Regulatory information

15.1. US Federal regulations

BUTYL CELLOSOLVE (EB) (111-76-2)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

15.2. International regulations

CANADA

No additional information available

EU-Regulations

No additional information available

National regulations

No additional information available

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15.3. US State regulations

BUTYL CELLOSOLVE (EB) (111-76-2)

State or local regulations

U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) List

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer and/or reproductive harm

SECTION 16: Other information

Revision date : 07/15/2021

Full text of H-phrases:

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

NFPA health hazard

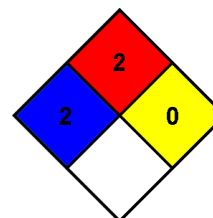
: 2 - Materials that, under emergency conditions, can cause temporary incapacitation or residual injury.

NFPA fire hazard

: 2 - Materials that must be moderately heated or exposed to relatively high ambient temperatures before ignition can occur.

NFPA reactivity

: 0 - Material that in themselves are normally stable, even under fire conditions.



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