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-Be / 2-butoxy-1-ethanol / 2-butoxyethanol / 2-n-butoxyethanol / 2-normal-butoxyethanol / 3-oxa-1-heptanol / A13-0993 / beta-butoxyethanol / BGE / breaxit 8002 / BUCS / butoxyethanol / butoxyethanol, normal- / butyl cellosolve / butylcellu-sol / butylcesosolve / butylethylenglycol, ortho- / butylglycol ether / butylglycol-cellosolve / butylglyrase / butylmonoetherglycol / butyloxitol (=2-butoxyethanol) / Caswell No. 121 / CHIMEC NR / COREXIT 7610 / DOWANOL EB / EGBE / EKTASOLVE EB / ethanol, 2-butoxy- / ethylene glycol monobutyl ether / ethylene glycol n-butyl ether / ethylene glycol normal-butyl ether / ethyleneglycol n-butyl ether / ethyleneglycolmonobutyl ether / ethyleneoxyglycolmono-normal-butyl ether / ethyleneoxyglycol-normal-butyl ether / GAFCOL EB / glycol ether EB / glycol ether EB acetate / glycolbutyl ether / glycolmonobutyl ether / jeffersol EB / minex BDH / monobutyl ether of ethyleneglycol / monobutyletherglycol / monoethoxyglycolmonoethyl ether / n-butoxyethanol / normal-butoxyethanol / O-butyletherglycol / ortho-butyletherglycol / POLY-SOLV EB / Substances with a flash-point above 60 °C and not more than 100 °C / Substances with a flash-point above 60 °C and not more than 100 °C, which do not belong to another class

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

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

1.4. Emergency telephone number

Emergency number: In the event of an emergency involving dangerous goods:
in Canada call CANUTEC at 613-996-6666 or *666 on a cellular phone.
in the US call CHEMTREC at 800-424-9300 (Account Name for US is Polyglass Coatings)

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS-US classification:
Flam. Liq. 4 H227 - Combustible liquid
Acute Tox. 4 (Oral) H302 - Harmful if swallowed
Acute Tox. 4 (Dermal) H312 - Harmful in contact with skin
Acute Tox. 4 (Inhalation:dust,mist) H332 - Harmful if inhaled
Skin Irrit. 2 H315 - Causes skin irritation
Eye Irrit. 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): !

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
BUTYL CELLOSOLVE (EB)
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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.
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.

H319 - Causes serious eye irritation

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

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

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:

First-aid measures after inhalation:
Remove the victim into fresh air. Respiratory problems: consult a doctor/medical service.

First-aid measures after skin contact:
Wash immediately with lots of water. Soap may be used. Take victim to a doctor if irritation persists.

First-aid measures after eye contact:
Rinse immediately with plenty of water. Do not apply neutralizing agents. Take victim to an ophthalmologist if irritation persists.

First-aid measures after ingestion:

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

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

Symptoms/effects after eye contact: Irritation of the eye tissue.

Symptoms/effects after ingestion: Risk of aspiration pneumonia. AFTER INGESTION OF HIGH QUANTITIES: Central nervous system depression. Symptoms similar to those listed under inhalation. Change in the haemogramme/blood composition. Change in urine composition.

Chronic symptoms: ON CONTINUOUS/REPEATED EXPOSURE/CONTACT: Tingling/irritation of the skin.

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

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media


Unsuitable extinguishing media: Container may slop over if solid jet (water/foam) is applied.

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. Reactions involving a fire hazard: see "Reactivity Hazard".

Explosion hazard: INDIRECT EXPLOSION HAZARD: Reactions with explosion hazards: see "Reactivity Hazard".

Reactivity: Upon combustion: CO and CO2 are formed. 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.


SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel


Emergency procedures: Mark the danger area. No naked flames. Wash contaminated clothes.

6.1.2. For emergency responders

No additional information available

6.2. Environmental precautions

No additional information available

6.3. Methods and material for containment and cleaning up

For containment: Contain released product, pump into suitable containers. Consult "Material-handling" to select material of containers. Plug the leak, cut off the supply.

Methods for cleaning up: Take up liquid spill into absorbent material, e.g. sand, earth, vermiculite or powdered limestone. Scoop absorbed substance into closing containers. Spill must not return in its original container. See "Material-handling" for suitable container materials. Clean contaminated surfaces with an excess of water. Wash clothing and equipment after handling.

6.4. Reference to other sections

No additional information available

SECTION 7: Handling and storage

7.1. Precautions for safe handling

7.2. Conditions for safe storage, including any incompatibilities

Heat-ignition: KEEP SUBSTANCE AWAY FROM: heat sources.

Information on mixed storage: KEEP SUBSTANCE AWAY FROM: combustible materials, oxidizing agents. (strong) bases.

Storage area: Store in a cool area. Keep out of direct sunlight. Store in a dry area. Store in a dark area. Ventilation at floor level. Fireproof storeroom. Provide the tank with earthing. May be stored under nitrogen. Meet the legal requirements.

Special rules on packaging: SPECIAL REQUIREMENTS: hermetical. clean. opaque. correctly labelled. meet the legal requirements. Secure fragile packagings in solid containers.


SECTION 8: Exposure controls/personal protection

8.1. Control parameters

<table>
<thead>
<tr>
<th>BUTYL CELLOSOLVE (EB) (111-76-2)</th>
<th>ACGIH TWA (ppm)</th>
<th>20 ppm (2-Butoxyethanol (EGBE): USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACGIH</td>
<td>Remark (ACGIH)</td>
<td>Eye &amp; URT irr</td>
</tr>
<tr>
<td>OSHA</td>
<td>OSHA PEL (TWA) (mg/m³)</td>
<td>240 mg/m³</td>
</tr>
<tr>
<td>OSHA</td>
<td>OSHA PEL (TWA) (ppm)</td>
<td>50 ppm</td>
</tr>
</tbody>
</table>

8.2. Exposure controls


Hand protection: Gloves.

Eye protection: Face shield.

Skin and body protection: Protective clothing.

Respiratory protection: Wear gas mask with filter type A if conc. in air > exposure limit.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state: Liquid

Appearance: Liquid.

No data available

Odor threshold: 0.10 - 0.48 ppm

0.5 - 2.3 mg/m³

pH: No data available

Melting point: -75 °C

Freezing point: No data available

Boiling point: 171 °C (Test data)

Critical temperature: 368 °C

Critical pressure: 32416 hPa

Flash point: 67 °C

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: 1.17 hPa (25 °C)

Relative density: 0.9 (20 °C; Test data)

Relative vapor density at 20 °C: 4.1
BUTYL CELLOSOLVE (EB)
Safety Data Sheet
according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Relative density of saturated gas/air mixture: 1
Specific gravity / density: 902 kg/m³
Molecular mass: 118.17 g/mol

Log Pow: 0.81 (Test data; 20 °C)
Auto-ignition temperature: 230 °C
Decomposition temperature: No data available
Viscosity: No data available
Viscosity, kinematic: No data available
Viscosity, dynamic: 0.0033 Pa.s (20 °C; Test data)

9.2. Other information
Saturation concentration: 5.8 g/m³
VOC content (Regulatory - Less water and exempt solvents): 100 %

SECTION 10: Stability and reactivity

10.1. Reactivity
Upon combustion: CO and CO₂ are formed. 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 additional information available

10.4. Conditions to avoid
No additional information available

10.5. Incompatible materials
No additional information available

10.6. Hazardous decomposition products
No additional information available

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity: Not classified

<table>
<thead>
<tr>
<th>BUTYL CELLOSOLVE (EB) (111-76-2)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50 oral rat</td>
<td>1746 mg/kg body weight (Rat; Equivalent or similar to OECD 401; Experimental value)</td>
</tr>
<tr>
<td>LD50 dermal rat</td>
<td>&gt; 2000 mg/kg body weight (Rat; Experimental value; OECD 402: Acute Dermal Toxicity)</td>
</tr>
<tr>
<td>LC50 inhalation rat (mg/l)</td>
<td>2.2 mg/l/4h (Rat; Experimental value)</td>
</tr>
<tr>
<td>LC50 inhalation rat (ppm)</td>
<td>450 ppm/4h (Rat; Experimental value)</td>
</tr>
<tr>
<td>ATE US (oral)</td>
<td>1746 mg/kg body weight</td>
</tr>
<tr>
<td>ATE US (dermal)</td>
<td>1100 mg/kg body weight</td>
</tr>
<tr>
<td>ATE US (gases)</td>
<td>450 ppm/4h</td>
</tr>
<tr>
<td>ATE US (vapors)</td>
<td>2.2 mg/l/4h</td>
</tr>
<tr>
<td>ATE US (dust, mist)</td>
<td>2.2 mg/l/4h</td>
</tr>
</tbody>
</table>

Skin corrosion/irritation: Causes skin irritation.
pH: No data available
Serious eye damage/irritation: Causes serious eye irritation.

pH: No data available

Respiratory or skin sensitization: Not classified

Germ cell mutagenicity: Not classified

Carcinogenicity: Not classified

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

<table>
<thead>
<tr>
<th>IARC group</th>
<th>3 - Not Classifiable</th>
</tr>
</thead>
</table>

Reproductive toxicity: Not classified

Specific target organ toxicity – single exposure: Not classified

Specific target organ toxicity – repeated exposure: Not classified

Aspiration hazard: Not classified


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

Symptoms/effects after eye contact: Irritation of the eye tissue.

Symptoms/effects after ingestion: Risk of aspiration pneumonia. AFTER INGESTION OF HIGH QUANTITIES: Central nervous system depression. Symptoms similar to those listed under inhalation. Change in the haemogramme/blood composition. Change in urine composition.

**Chronic symptoms**: ON CONTINUOUS/REPEATED EXPOSURE/CONTACT: Tingling/irritation of the skin.

### SECTION 12: Ecological information

#### 12.1. Toxicity

**Ecology - general**: Classification concerning the environment: not applicable.

**Ecology - air**: Not classified as dangerous for the ozone layer (Regulation (EC) No 1005/2009). TA-Luft Klasse 5.2.5.


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

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>LC50 fish 1</td>
<td>1474 ppm (LC50; OECD 203: Fish, Acute Toxicity Test; 96 h; Oncorhynchus mykiss; Static system; Fresh water; Experimental value)</td>
</tr>
<tr>
<td>EC50 Daphnia 1</td>
<td>1550 mg/l (EC50; OECD 202: Daphnia sp. Acute Immobilisation Test; 48 h; Daphnia magna; Static system; Fresh water; Experimental value)</td>
</tr>
<tr>
<td>Threshold limit algae 1</td>
<td>911 mg/l (EC50; OECD 201: Alga, Growth Inhibition Test; 72 h; Pseudokirchneriella subcapitata; Static system; Fresh water; Experimental value)</td>
</tr>
<tr>
<td>Threshold limit algae 2</td>
<td>88 mg/l (NOEC; OECD 201: Alga, Growth Inhibition Test; 72 h; Pseudokirchneriella subcapitata; Static system; Fresh water; Experimental value)</td>
</tr>
</tbody>
</table>

#### 12.2. Persistence and degradability

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

Persistence and degradability: Readily biodegradable in water. Low potential for adsorption in soil. Photooxidation in the air.

#### 12.3. Bioaccumulative potential

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

Log Pow: 0.81 (Test data; 20 °C)

Bioaccumulative potential: Low potential for bioaccumulation (Log Kow < 4).

#### 12.4. Mobility in soil

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

Surface tension: 0.065 N/m (20 °C; Calculated value)

#### 12.5. Other adverse effects

No additional information available
SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product/Packaging disposal recommendations: 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. Recycle by distillation. Remove to an authorized waste incinerator for solvents with energy recovery. Do not discharge into surface water. May be discharged to wastewater treatment installation.

Additional information: LWCA (the Netherlands): KGA category 03. Hazardous waste according to Directive 2008/98/EC.

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

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: 06/12/2019
**BUTYL CELLOSOLVE (EB)**

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

<table>
<thead>
<tr>
<th>H-phrase</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>H227</td>
<td>Combustible liquid</td>
</tr>
<tr>
<td>H302</td>
<td>Harmful if swallowed</td>
</tr>
<tr>
<td>H312</td>
<td>Harmful in contact with skin</td>
</tr>
<tr>
<td>H315</td>
<td>Causes skin irritation</td>
</tr>
<tr>
<td>H319</td>
<td>Causes serious eye irritation</td>
</tr>
<tr>
<td>H332</td>
<td>Harmful if inhaled</td>
</tr>
</tbody>
</table>

**NFPA health hazard**: 3 - Materials that, under emergency conditions, can cause serious or permanent 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.

The information contained here has been compiled from sources considered by Endura Manufacturing Co. Ltd to be dependable and is accurate to the best of the Company’s knowledge. However, neither Endura Manufacturing Co. Ltd or any of its subsidiaries assume any liability whatsoever for the accuracy of completeness of the information contained herein. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown health hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist.