

# SAFETY DATA SHEET

twinbond

Based upon Regulation (EC) No 1907/2006, as amended by Regulation (EU) No 2020/878

## SFA-100 B

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

#### 1.1. Product identifier

Product name : SFA-100 B  
Registration number REACH : Not applicable (mixture)  
Product type REACH : Mixture

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

##### 1.2.1 Relevant identified uses

Sealing compound

##### 1.2.2 Uses advised against

No uses advised against known

#### 1.3. Details of the supplier of the safety data sheet

##### Supplier of the safety data sheet

Twinbond\*  
Industrielaan 5B  
B-2250 Olen  
☎ +32 14 25 76 40  
✉ +32 14 22 02 66  
info@novatech.be  
\* Twinbond is a registered trademark of Novatech International N.V.

##### Manufacturer of the product

Novatech International N.V.  
Industrielaan 5B  
B-2250 Olen  
☎ +32 14 85 97 37  
✉ +32 14 85 97 38  
info@novatech.be

#### 1.4. Emergency telephone number

24h/24h (Telephone advice: English, French, German, Dutch) :  
+32 14 58 45 45 (BIG)

24h/24h :  
Nederland - Nationaal Vergiftigingen Informatie Centrum (NVIC): +31 88 755 8000  
(Uitsluitend bestemd om artsen te informeren bij accidentele vergiftigingen)  
(Only for the purpose of informing medical personnel in cases of acute intoxications)

### SECTION 2: Hazards identification

#### 2.1. Classification of the substance or mixture

Classified as dangerous according to the criteria of Regulation (EC) No 1272/2008

Class	Category	Hazard statements
Skin Sens.	category 1	H317: May cause an allergic skin reaction.
Acute Tox.	category 4	H332: Harmful if inhaled.
Acute Tox.	category 4	H302: Harmful if swallowed.
Skin Corr.	category 1	H314: Causes severe skin burns and eye damage.
Eye Dam.	category 1	H318: Causes serious eye damage.
Aquatic Acute	category 1	H400: Very toxic to aquatic life.
Aquatic Chronic	category 1	H410: Very toxic to aquatic life with long lasting effects.

#### 2.2. Label elements



Contains: 2-butoxyethanol; benzyl alcohol; m-phenylenebis(methylamine); reaction products of ethylenediamine and 2,2'-[[1-methylethylidene]bis(4,1-phenyleneoxymethylene)]bisoxirane.

Signal word Danger

H-statements  
H317 May cause an allergic skin reaction.

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H302 + H332  
H314  
H410

Harmful if swallowed or if inhaled.  
Causes severe skin burns and eye damage.  
Very toxic to aquatic life with long lasting effects.

## P-statements

P280  
P260  
P304 + P340  
P303 + P361 + P353  
P305 + P351 + P338

Wear protective gloves, protective clothing and eye protection/face protection.  
Do not breathe vapours/mist.  
IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.  
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.  
Continue rinsing.  
Immediately call a POISON CENTER/doctor.

## 2.3. Other hazards

Caution! Substance is absorbed through the skin

## SECTION 3: Composition/information on ingredients

### 3.1. Substances

Not applicable

### 3.2. Mixtures

Name REACH Registration No	CAS No EC No	Conc. (C)	Classification according to CLP	Note	Remark	M-factors and ATE
2-butoxyethanol 01-2119475108-36	111-76-2 203-905-0	C<50%	Acute Tox. 4; H332 Acute Tox. 4; H302 Skin Irrit. 2; H315 Eye Irrit. 2; H319	(1)(2)(10)	Constituent	ATE inhalation (vapour): 3 mg/l ATE oral: 1200 mg/kg
benzyl alcohol 01-2119492630-38	100-51-6 202-859-9	12.5% <C<25%	Acute Tox. 4; H332 Acute Tox. 4; H302 Eye Irrit. 2; H319	(1)(2)(6)(10)	Constituent	
formaldehyde, polymer with m-phenylenebis(methylamine) and phenol	57214-10-5	12.5% <C<25%	Aquatic Acute 1; H400 Aquatic Chronic 1; H410	(1)(10)	Constituent	
m-phenylenebis(methylamine) 01-2119480150-50	1477-55-0 216-032-5	5%<C<10%	Skin Sens. 1B; H317 Acute Tox. 4; H332 Acute Tox. 4; H302 Skin Corr. 1B; H314 Eye Dam. 1; H318 Aquatic Chronic 3; H412 EUH071	(1)(2)(10)	Constituent	
reaction products of ethylenediamine and 2,2'-[[1-methylethylidene]bis(4,1-phenyleneoxymethylene)]bisoxirane 01-2120766318-46	72480-18-3	2.5%<C<5%	Skin Sens. 1; H317 Acute Tox. 4; H302 Skin Corr. 1; H314 Eye Dam. 1; H318 Aquatic Acute 1; H400 Aquatic Chronic 1; H410	(1)	Constituent	M: 1 (Acute, BIG) M: 1 (Chronic, BIG)

(1) For H- and EUH-statements in full: see section 16

(2) Substance with a Community workplace exposure limit

(6) Enumerated in Annex VI of Regulation (EC) No. 1272/2008 but the classification has been adapted after evaluation of available test data

(10) Subject to restrictions of Annex XVII of Regulation (EC) No. 1907/2006

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

#### General:

Observe (own) safety. If possible, approach victim and check vital functions. In case of injury and/or intoxication, call the European emergency number 112. Treat symptoms starting with most life-threatening injuries and disorders. Keep victim under observation, possibility of delayed symptoms.

#### After inhalation:

Remove victim into fresh air. Immediately consult a doctor/medical service.

#### After skin contact:

If possible, wipe up/dry remove chemical. Then rinse/shower immediately for 30 minutes with (lukewarm) water. Cut clothing; never remove burnt clothing from the wound. Do not give any pain medication. Consult a doctor/medical service.

#### After eye contact:

Rinse immediately with plenty of water for 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Consult a doctor/medical service.

#### After ingestion:

Rinse mouth with water. Immediately consult a doctor/medical service. Do not wait for symptoms to occur to consult Poison Center.

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

### 4.2.1 Acute symptoms

#### After inhalation:

EXPOSURE TO HIGH CONCENTRATIONS: Corrosion of the upper respiratory tract.

#### After skin contact:

Caustic burns/corrosion of the skin.

#### After eye contact:

Corrosion of the eye tissue.

#### After ingestion:

Burns to the gastric/intestinal mucosa. Possible esophageal perforation.

### 4.2.2 Delayed symptoms

No effects known.

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

If applicable and available it will be listed below.

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

#### 5.1.1 Suitable extinguishing media:

Small fire: Quick-acting ABC powder extinguisher, Quick-acting BC powder extinguisher, Quick-acting class B foam extinguisher, Quick-acting CO2 extinguisher.

Major fire: Class B foam (alcohol-resistant), Water spray if puddle cannot expand.

#### 5.1.2 Unsuitable extinguishing media:

Small fire: Water (quick-acting extinguisher, reel); risk of puddle expansion.

Major fire: Water; risk of puddle expansion.

### 5.2. Special hazards arising from the substance or mixture

On burning: release of toxic and corrosive gases/vapours (nitrous vapours, carbon monoxide - carbon dioxide).

### 5.3. Advice for firefighters

#### 5.3.1 Instructions:

Dilute toxic gases with water spray. Take account of toxic/corrosive precipitation water. Take account of toxic fire-fighting water. Use water moderately and if possible collect or contain it. Heat exposure: dilute toxic gas/vapour with water spray.

#### 5.3.2 Special protective equipment for fire-fighters:

Gloves (EN 374). Face shield (EN 166). Corrosion-proof suit (EN 14605). Large spills/in enclosed spaces: self-contained breathing apparatus (EN 136 + EN 137). Large spills/in enclosed spaces: gas-tight suit (EN 943). Heat/fire exposure: self-contained breathing apparatus (EN 136 + EN 137).

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

No naked flames. Large spills/in confined spaces: consider evacuation. Exposure to fire/heat: keep upwind. Exposure to fire/heat: consider evacuation. Exposure to fire/heat: have neighbourhood close doors and windows.

#### 6.1.1 Protective equipment for non-emergency personnel

See section 8.2

#### 6.1.2 Protective equipment for emergency responders

Gloves (EN 374). Face shield (EN 166). Corrosion-proof suit (EN 14605). Large spills/in enclosed spaces: self-contained breathing apparatus (EN 136 + EN 137). Large spills/in enclosed spaces: gas-tight suit (EN 943).

#### Suitable protective clothing

See section 8.2

### 6.2. Environmental precautions

Contain released product, collect/pump into suitable containers. Plug the leak, cut off the supply. Dam up the liquid spill. Prevent soil and water pollution. Prevent spreading in sewers.

### 6.3. Methods and material for containment and cleaning up

Take up liquid spill into inert absorbent material. Scoop absorbed substance into closing containers. Carefully collect the spill/leftovers. Damaged/cooled tanks must be emptied. Clean contaminated surfaces with an excess of water. Take collected spill to manufacturer/competent authority. Wash clothing and equipment after handling.

### 6.4. Reference to other sections

See section 13.

## SECTION 7: Handling and storage

The information in this section is a general description. If applicable and available, exposure scenarios are attached in annex. Always use the relevant exposure scenarios that correspond to your identified use.

### 7.1. Precautions for safe handling

Keep away from naked flames/heat. In finely divided state: use spark-/explosionproof appliances. Finely divided: keep away from ignition sources/sparks. Observe very strict hygiene - avoid contact. Remove contaminated clothing immediately. Keep container tightly closed. Do not discharge the waste into the drain.

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## 7.2. Conditions for safe storage, including any incompatibilities

### 7.2.1 Safe storage requirements:

Meet the legal requirements. Provide for a tub to collect spills.

### 7.2.2 Keep away from:

Heat sources.

### 7.2.3 Suitable packaging material:

No data available

### 7.2.4 Non suitable packaging material:

No data available

## 7.3. Specific end use(s)

If applicable and available, exposure scenarios are attached in annex. See information supplied by the manufacturer.

## SECTION 8: Exposure controls/personal protection

## 8.1. Control parameters

### 8.1.1 Occupational exposure

#### a) Occupational exposure limit values

If limit values are applicable and available these will be listed below.

#### EU

2-Butoxyethanol	Time-weighted average exposure limit 8 h (Indicative occupational exposure limit value)	20 ppm
	Time-weighted average exposure limit 8 h (Indicative occupational exposure limit value)	98 mg/m <sup>3</sup>
	Short time value (Indicative occupational exposure limit value)	50 ppm
	Short time value (Indicative occupational exposure limit value)	246 mg/m <sup>3</sup>

#### Belgium

2-Butoxyéthanol	Time-weighted average exposure limit 8 h	20 ppm
	Time-weighted average exposure limit 8 h	98 mg/m <sup>3</sup>
	Short time value	50 ppm
	Short time value	246 mg/m <sup>3</sup>
m-Xylène α, α'-diamine	Short time value	0.1 mg/m <sup>3</sup> (M)

La mention "M" indique que lors d'une exposition supérieure à la valeur limite, des irritations apparaissent ou un danger d'intoxication aiguë existe. Le procédé de travail doit être conçu de telle façon que l'exposition ne dépasse jamais la valeur limite. Lors des mesurages, la période d'échantillonnage doit être aussi courte que possible afin de pouvoir effectuer des mesurages fiables. Le résultat des mesurages est calculé en fonction de la période d'échantillonnage.

#### Germany

2-Butoxyethanol	Time-weighted average exposure limit 8 h (TRGS 900)	10 ppm
	Time-weighted average exposure limit 8 h (TRGS 900)	49 mg/m <sup>3</sup>
Benzylalkohol	Time-weighted average exposure limit 8 h (TRGS 900)	5 ppm
	Time-weighted average exposure limit 8 h (TRGS 900)	22 mg/m <sup>3</sup>

#### UK

2-Butoxyethanol	Time-weighted average exposure limit 8 h (Workplace exposure limit (EH40/2005))	25 ppm
	Time-weighted average exposure limit 8 h (Workplace exposure limit (EH40/2005))	123 mg/m <sup>3</sup>
	Short time value (Workplace exposure limit (EH40/2005))	50 ppm
	Short time value (Workplace exposure limit (EH40/2005))	246 mg/m <sup>3</sup>

#### USA (TLV-ACGIH)

2-Butoxyethanol	Time-weighted average exposure limit 8 h (TLV - Adopted Value)	20 ppm
m-Xylene alfa, alfa'-diamine	Momentary value (TLV - Adopted Value)	0.018 ppm

#### b) National biological limit values

If limit values are applicable and available these will be listed below.

#### Germany

2-Butoxyethanol (Butoxyessigsäure (nach Hydrolyse))	Urin: expositionsende, bzw. schichtende bei langzeitexposition: nach mehreren vorangegangenen schichten	150 mg/g Kreatinin	
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#### UK

2-Butoxyethanol (butoxyacetic acid)	Urine: post shift	240 mmol/mol creatinine	
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#### USA (BEI-ACGIH)

2-butoxyethanol (Butoxyacetic acid (BAA))	urine: end of shift	200 mg/g creatinine	With hydrolysis
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### 8.1.2 Sampling methods

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Product name	Test	Number
2-Butoxyethanol (Alcohols IV)	NIOSH	1403
2-Butoxyethanol (Butyl Cellosolve solvent)	OSHA	83
2-Butoxyethanol	OSHA	5001
Amines, aromatic	NIOSH	2002
Benzyl Alcohol	OSHA	2009
Butoxyacetic acid	NIOSH	8316
Butyl Acrylate	OSHA	2011
Butyl cellosolve (Volatile Organic compounds)	NIOSH	2549
Butyl Cellosolve	OSHA	83
m-Xylene-a,a-diamine	OSHA	105

## 8.1.3 Applicable limit values when using the substance or mixture as intended

If limit values are applicable and available these will be listed below.

## 8.1.4 Threshold values

### DNEL/DMEL - Workers

#### 2-butoxyethanol

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term systemic effects inhalation	98 mg/m <sup>3</sup>	
	Acute systemic effects inhalation	1091 mg/m <sup>3</sup>	
	Acute local effects inhalation	246 mg/m <sup>3</sup>	

#### benzyl alcohol

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term systemic effects inhalation	22 mg/m <sup>3</sup>	
	Acute systemic effects inhalation	110 mg/m <sup>3</sup>	
	Long-term systemic effects dermal	8 mg/kg bw/day	
	Acute systemic effects dermal	40 mg/kg bw/day	

#### m-phenylenebis(methylamine)

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term systemic effects inhalation	1.2 mg/m <sup>3</sup>	
	Long-term local effects inhalation	0.2 mg/m <sup>3</sup>	
	Long-term systemic effects dermal	0.33 mg/kg bw/day	

#### reaction products of ethylenediamine and 2,2'-(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term systemic effects inhalation	0.705 mg/m <sup>3</sup>	
	Long-term systemic effects dermal	0.28 mg/kg bw/day	

### DNEL/DMEL - General population

#### 2-butoxyethanol

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term systemic effects inhalation	59 mg/m <sup>3</sup>	
	Acute systemic effects inhalation	426 mg/m <sup>3</sup>	
	Acute local effects inhalation	147 mg/m <sup>3</sup>	
	Long-term systemic effects oral	6.3 mg/kg bw/day	
	Acute systemic effects oral	26.7 mg/kg bw/day	

#### benzyl alcohol

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term systemic effects inhalation	5.4 mg/m <sup>3</sup>	
	Acute systemic effects inhalation	27 mg/m <sup>3</sup>	
	Long-term systemic effects dermal	4 mg/kg bw/day	
	Acute systemic effects dermal	20 mg/kg bw/day	
	Long-term systemic effects oral	4 mg/kg bw/day	
	Acute systemic effects oral	20 mg/kg bw/day	

### PNEC

#### 2-butoxyethanol

Compartments	Value	Remark
Fresh water	8.8 mg/l	
Marine water	0.88 mg/l	
Fresh water (intermittent releases)	26.4 mg/l	
STP	463 mg/l	
Fresh water sediment	34.6 mg/kg sediment dw	
Marine water sediment	3.46 mg/kg sediment dw	
Soil	2.33 mg/kg soil dw	
Oral	0.02 g/kg food	

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## benzyl alcohol

Compartments	Value	Remark
Fresh water	1 mg/l	
Marine water	0.1 mg/l	
Fresh water (intermittent releases)	2.3 mg/l	
STP	39 mg/l	
Fresh water sediment	5.27 mg/kg sediment dw	
Marine water sediment	0.527 mg/kg sediment dw	
Soil	0.456 mg/kg soil dw	

## m-phenylenebis(methylamine)

Compartments	Value	Remark
Fresh water	0.094 mg/l	
Fresh water (intermittent releases)	0.152 mg/l	
Marine water	0.009 mg/l	
STP	10 mg/l	
Fresh water sediment	12.4 mg/kg sediment dw	
Marine water sediment	1.24 mg/kg sediment dw	
Soil	2.44 mg/kg soil dw	

## reaction products of ethylenediamine and 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane

Compartments	Value	Remark
Fresh water	< 0.01 mg/l	
Marine water	< 0.01 mg/l	
Fresh water (intermittent releases)	0.002 mg/l	
Marine water (intermittent releases)	0.002 mg/l	
STP	1 mg/l	
Fresh water sediment	0.002 mg/kg sediment dw	
Marine water sediment	< 0.001 mg/kg sediment dw	
Soil	< 0.001 mg/kg soil dw	

### 8.1.5 Control banding

If applicable and available it will be listed below.

## 8.2. Exposure controls

The information in this section is a general description. If applicable and available, exposure scenarios are attached in annex. Always use the relevant exposure scenarios that correspond to your identified use.

### 8.2.1 Appropriate engineering controls

Keep away from naked flames/heat. In finely divided state: use spark-/explosionproof appliances. Finely divided: keep away from ignition sources/sparks. Measure the concentration in the air regularly. Carry operations in the open/under local exhaust/ventilation or with respiratory protection.

### 8.2.2 Individual protection measures, such as personal protective equipment

Observe very strict hygiene - avoid contact. Do not eat, drink or smoke during work.

#### a) Respiratory protection:

Full face mask with filter type A at conc. in air > exposure limit.

#### b) Hand protection:

Protective gloves against chemicals (EN 374).

#### c) Eye protection:

Face shield (EN 166).

#### d) Skin protection:

Corrosion-proof clothing (EN 14605).

### 8.2.3 Environmental exposure controls:

See sections 6.2, 6.3 and 13

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical form	Liquid
Odour	No data available on odour
Odour threshold	No data available (test not performed)
Colour	No data available on colour
Particle size	Not applicable (liquid)
Explosion limits	No data available (test not performed)
Flammability	Not classified as flammable
Log Kow	Not applicable (mixture)
Dynamic viscosity	No data available (test not performed)
Kinematic viscosity	No data available (test not performed)
Melting point	No data available (test not performed)
Boiling point	No data available (test not performed)
Relative vapour density	No data available (test not performed)
Vapour pressure	No data available (test not performed)
Solubility	No data available (test not performed)
Relative density	1.03

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Absolute density	1034 kg/m <sup>3</sup>
Decomposition temperature	No data available (test not performed)
Auto-ignition temperature	No data available (test not performed)
Flash point	No data available (test not performed)
pH	No data available (test not performed)

## 9.2. Other information

No data available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

Heating increases the fire hazard.

### 10.2. Chemical stability

No data available.

### 10.3. Possibility of hazardous reactions

No data available.

### 10.4. Conditions to avoid

#### Precautionary measures

Keep away from naked flames/heat. In finely divided state: use spark-/explosionproof appliances. Finely divided: keep away from ignition sources/sparks.

### 10.5. Incompatible materials

No data available.

### 10.6. Hazardous decomposition products

On burning: release of toxic and corrosive gases/vapours (nitrous vapours, carbon monoxide - carbon dioxide).

## SECTION 11: Toxicological information

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

#### 11.1.1 Test results

#### Acute toxicity

##### SFA-100 B

No (test) data on the mixture available

Classification is based on the relevant ingredients

##### 2-butoxyethanol

Route of exposure	Parameter	Method	Value	Exposure time	Species	Value determination	Remark
Oral	ATE		1200 mg/kg bw			Annex VI	
Oral	LD50	OECD 401	1414 mg/kg bw		Guinea pig (male / female)	Experimental value	
Oral	LD50	Equivalent to OECD 401	1746 mg/kg bw		Rat (male)	Experimental value	
Skin	LC0	OECD 402	> 2000 mg/kg bw	24 h	Guinea pig (male / female)	Experimental value	
Inhalation (vapours)			category 4			Expert judgement	

Classification of this substance according to Annex VI is debatable as it does not correspond to the conclusion from the test

##### benzyl alcohol

Route of exposure	Parameter	Method	Value	Exposure time	Species	Value determination	Remark
Oral	LD50		1620 mg/kg bw		Rat (male)	Experimental value	
Dermal	LD50	EPA OTS 798.1100	> 2000 mg/kg	24 h	Rabbit (male / female)	Experimental value	
Inhalation (aerosol)	LC50	OECD 403	> 4.18 mg/l air	4 h	Rat (male / female)	Experimental value	

##### m-phenylenebis(methylamine)

Route of exposure	Parameter	Method	Value	Exposure time	Species	Value determination	Remark
Oral	LD50	Equivalent to OECD 401	930 mg/kg bw		Rat (male / female)	Experimental value	
Dermal	LD50		> 3100 mg/kg bw	24 h	Rat (male / female)	Experimental value	
Inhalation (aerosol)	LC50	OECD 403	1.34 mg/l	4 h	Rat (male / female)	Experimental value	

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reaction products of ethylenediamine and 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane

Route of exposure	Parameter	Method	Value	Exposure time	Species	Value determination	Remark
Oral	LD50	OECD 401	> 10000 mg/kg bw		Rabbit (male / female)	Experimental value	
Oral			category 4			Literature study	
Dermal						Data waiving	
Inhalation						Data waiving	

## Conclusion

Harmful if swallowed.

Harmful if inhaled.

Not classified as acute toxic in contact with skin

## Corrosion/irritation

### SFA-100 B

No (test)data on the mixture available

Classification is based on the relevant ingredients

2-butoxyethanol

Route of exposure	Result	Method	Exposure time	Time point	Species	Value determination	Remark
Eye	Irritating	OECD 405	24 h	24; 48; 72 hours	Rabbit	Experimental value	Single treatment with rinsing
Skin	Irritating	EU Method B.4	4 h	24; 48; 72 hours	Rabbit	Experimental value	

benzyl alcohol

Route of exposure	Result	Method	Exposure time	Time point	Species	Value determination	Remark
Eye	Irritating	OECD 405	24 h	24; 48; 72 hours	Rabbit	Experimental value	Single treatment with rinsing
Skin	Slightly irritating	OECD 404	4 h	24; 48; 72 hours	Rabbit	Experimental value	

m-phenylenebis(methylamine)

Route of exposure	Result	Method	Exposure time	Time point	Species	Value determination	Remark
Eye						Data waiving	
Eye	Serious eye damage; category 1					Experimental value	
Skin	Corrosive	Equivalent to EU Method B.4	4 h	4 hours	Rat	Experimental value	

Data waiving for eye corrosion based on corrosive properties

reaction products of ethylenediamine and 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane

Route of exposure	Result	Method	Exposure time	Time point	Species	Value determination	Remark
Eye	Serious eye damage	OECD 437	240 minutes		Bovine eye (in vitro)	Experimental value	
Not applicable (in vitro test)	Corrosive	OECD 431	3 minutes - 60 minutes		Reconstructed human epidermis	Experimental value	

## Conclusion

Causes severe skin burns and eye damage.

Not classified as irritating to the respiratory system

## Respiratory or skin sensitisation

### SFA-100 B

No (test)data on the mixture available

Classification is based on the relevant ingredients

2-butoxyethanol

Route of exposure	Result	Method	Exposure time	Observation time point	Species	Value determination	Remark
Skin	Not sensitizing	OECD 406			Guinea pig (male / female)	Experimental value	

benzyl alcohol

Route of exposure	Result	Method	Exposure time	Observation time point	Species	Value determination	Remark
Dermal (on the ears)	Not sensitizing	OECD 429			Mouse (female)	Experimental value	

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## m-phenylenebis(methylamine)

Route of exposure	Result	Method	Exposure time	Observation time point	Species	Value determination	Remark
Dermal (on the ears)	Sensitizing	OECD 429			Mouse (female)	Experimental value	

## reaction products of ethylenediamine and 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane

Route of exposure	Result	Method	Exposure time	Observation time point	Species	Value determination	Remark
Dermal (on the ears)	Sensitizing	OECD 429			Mouse (female)	Experimental value	

### Conclusion

May cause an allergic skin reaction.

Not classified as sensitizing for inhalation

### Specific target organ toxicity

#### SFA-100 B

No (test) data on the mixture available

Judgement is based on the relevant ingredients

#### 2-butoxyethanol

Route of exposure	Parameter	Method	Value	Organ	Effect	Exposure time	Species	Value determination
Oral (drinking water)	NOAEL	Equivalent to OECD 408	< 69 mg/kg bw/day		No effect	90 days (continuous)	Rat (male)	Experimental value
Oral (drinking water)	NOAEL	Equivalent to OECD 408	< 82 mg/kg bw/day		No effect	90 day(s)	Rat (female)	Experimental value
Dermal	NOAEL	Equivalent to OECD 411	> 150 mg/kg bw/day		No effect	13 weeks (5 days / week)	Rabbit (male / female)	Experimental value
Inhalation (vapours)	NOAEC	Equivalent to OECD 413	< 31 ppm		No effect	104 weeks (6h / day, 5 days / week)	Rat (male / female)	Experimental value

#### benzyl alcohol

Route of exposure	Parameter	Method	Value	Organ	Effect	Exposure time	Species	Value determination
Oral (stomach tube)	NOAEL	Equivalent to OECD 451	400 mg/kg bw/day		No effect	103 weeks (5 days / week)	Rat (male / female)	Experimental value
Dermal								Data waiving
Inhalation (aerosol)	NOAEC	OECD 412	1072 mg/m <sup>3</sup>		No effect	4 weeks (6h / day, 5 days / week)	Rat (male / female)	Experimental value

## m-phenylenebis(methylamine)

Route of exposure	Parameter	Method	Value	Organ	Effect	Exposure time	Species	Value determination
Oral (stomach tube)	NOEL	Equivalent to OECD 407	150 mg/kg bw/day		No effect	4 weeks (daily)	Rat (male / female)	Experimental value
Dermal								Data waiving
Inhalation (aerosol)	NOAEC	OECD 413	5 mg/m <sup>3</sup> air		No effect	13 weeks (6h / day, 5 days / week)	Rat (male / female)	Experimental value

## reaction products of ethylenediamine and 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane

Route of exposure	Parameter	Method	Value	Organ	Effect	Exposure time	Species	Value determination
Oral (stomach tube)	NOAEL	OECD 422	60 mg/kg bw/day		No adverse systemic effects		Rat (male / female)	Experimental value

### Conclusion

Not classified for subchronic toxicity

### Mutagenicity (in vitro)

#### SFA-100 B

No (test) data on the mixture available

Judgement is based on the relevant ingredients

#### 2-butoxyethanol

Result	Method	Test substrate	Effect	Value determination	Remark
Negative with metabolic activation, negative without metabolic activation	Equivalent to OECD 471	Bacteria (S.typhimurium)		Experimental value	
Negative with metabolic activation, negative without metabolic activation	Equivalent to OECD 476	Chinese hamster ovary (CHO)		Experimental value	

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# SFA-100 B

## benzyl alcohol

Result	Method	Test substrate	Effect	Value determination	Remark
Negative with metabolic activation, negative without metabolic activation	Equivalent to OECD 471	Bacteria (S.typhimurium)		Experimental value	
Positive without metabolic activation, negative with metabolic activation	Equivalent to OECD 476	Mouse (lymphoma L5178Y cells)		Experimental value	

## m-phenylenebis(methylamine)

Result	Method	Test substrate	Effect	Value determination	Remark
Negative with metabolic activation, negative without metabolic activation	OECD 476	Mouse (lymphoma L5178Y cells)	No effect	Experimental value	
Negative without metabolic activation	OECD 473	Chinese hamster ovary (CHO)	No effect	Experimental value	
Negative with metabolic activation, negative without metabolic activation	Equivalent to OECD 471	Bacteria (S.typhimurium)	No effect	Experimental value	

## reaction products of ethylenediamine and 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane

Result	Method	Test substrate	Effect	Value determination	Remark
Negative with metabolic activation, negative without metabolic activation	OECD 471	Bacteria (S. typhimurium and E. coli)	No effect	Experimental value	
Negative with metabolic activation, negative without metabolic activation	OECD 473	Chinese hamster ovary (CHO)	No effect	Experimental value	

## Mutagenicity (in vivo)

### SFA-100 B

No (test)data on the mixture available

Judgement is based on the relevant ingredients

### 2-butoxyethanol

Result	Method	Exposure time	Test substrate	Organ	Value determination
Negative (Intraperitoneal)	Equivalent to OECD 474	3 dose(s)/24-hour interval	Mouse (male)		Experimental value

## benzyl alcohol

Result	Method	Exposure time	Test substrate	Organ	Value determination
Negative (Intraperitoneal)	Equivalent to OECD 474		Mouse (male)	Bone marrow	Experimental value

## m-phenylenebis(methylamine)

Result	Method	Exposure time	Test substrate	Organ	Value determination
Negative (Oral (stomach tube))	OECD 474		Mouse (male / female)	Bone marrow	Experimental value

## Conclusion

Not classified for mutagenic or genotoxic toxicity

## Carcinogenicity

### SFA-100 B

No (test)data on the mixture available

Judgement is based on the relevant ingredients

### 2-butoxyethanol

Route of exposure	Parameter	Method	Value	Exposure time	Species	Effect	Organ	Value determination
Inhalation (vapours)	NOAEC	Equivalent to OECD 451	> 125 ppm	104 weeks (6h / day, 5 days / week)	Rat (male / female)	No carcinogenic effect		Experimental value

## benzyl alcohol

Route of exposure	Parameter	Method	Value	Exposure time	Species	Effect	Organ	Value determination
Oral (stomach tube)	Dose level	Equivalent to OECD 451	400 mg/kg bw/day	1003 weeks (5 days / week)	Rat (male / female)	No carcinogenic effect		Experimental value

## m-phenylenebis(methylamine)

Route of exposure	Parameter	Method	Value	Exposure time	Species	Effect	Organ	Value determination
Unknown								Data waiving

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# SFA-100 B

## Conclusion

Not classified for carcinogenicity

## Reproductive toxicity

### SFA-100 B

No (test)data on the mixture available

Judgement is based on the relevant ingredients

#### 2-butoxyethanol

	Parameter	Method	Value	Exposure time	Species	Effect	Organ	Value determination
Developmental toxicity (Oral (stomach tube))	NOAEC	Equivalent to OECD 414	200 mg/kg bw/day	3 days (gestation, daily)	Rat	No effect		Experimental value
Maternal toxicity (Oral (stomach tube))	NOAEL	Equivalent to OECD 414	30 mg/kg bw/day	3 days (gestation, daily)	Rat	No effect		Experimental value
Effects on fertility (Oral (drinking water))	NOAEL	Fertility Assessment	720 mg/kg bw/day	14 weeks (daily)	Mouse (male / female)	No effect		Experimental value

#### benzyl alcohol

	Parameter	Method	Value	Exposure time	Species	Effect	Organ	Value determination
Developmental toxicity (Oral (stomach tube))	NOAEL	Developmental toxicity study	175 mg/kg bw/day	10 days (1x / day)	Rat	No effect		Read-across
Maternal toxicity (Oral (stomach tube))	NOAEL	Developmental toxicity study	175 mg/kg bw/day	10 days (1x / day)	Rat	No effect		Read-across
Effects on fertility (Oral (diet))	NOAEL		≥ 750 mg/kg bw/day		Rat (male / female)	No effect		Read-across

#### m-phenylenebis(methylamine)

	Parameter	Method	Value	Exposure time	Species	Effect	Organ	Value determination
Developmental toxicity (Oral (stomach tube))	NOAEL	OECD 414	300 mg/kg bw/day	14 day(s)	Rat	No effect		Experimental value
Maternal toxicity (Oral (stomach tube))	NOAEL	OECD 414	100 mg/kg bw/day	14 day(s)	Rat	No effect		Experimental value
Effects on fertility (Oral (stomach tube))	NOEL	OECD 421	50 mg/kg bw/day		Rat (male)	No effect	Male reproductive organ	Experimental value
	NOEL	OECD 421	150 mg/kg bw/day		Rat (female)	No effect	Female reproductive organ	Experimental value

#### reaction products of ethylenediamine and 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane

	Parameter	Method	Value	Exposure time	Species	Effect	Organ	Value determination
Effects on fertility (Oral (stomach tube))	NOEL	OECD 422	60 mg/kg bw/day		Rat (male / female)	No effect		Experimental value

## Conclusion

Not classified for reprotoxic or developmental toxicity

## Aspiration hazard

Judgement is based on the relevant ingredients

Not classified for aspiration toxicity

## Toxicity other effects

### SFA-100 B

No (test)data on the mixture available

## Chronic effects from short and long-term exposure

### SFA-100 B

Skin rash/inflammation.

## 11.2. Information on other hazards

No evidence of endocrine disrupting properties

## SECTION 12: Ecological information

### 12.1. Toxicity

#### SFA-100 B

No (test)data on the mixture available

Classification is based on the relevant ingredients

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# SFA-100 B

## 2-butoxyethanol

	Parameter	Method	Value	Duration	Species	Test design	Fresh/salt water	Value determination
Acute toxicity fishes	LC50	OECD 203	1474 mg/l	96 h	Oncorhynchus mykiss	Static system	Fresh water	Experimental value; Nominal concentration
Acute toxicity crustacea	EC50	OECD 202	1550 mg/l	48 h	Daphnia magna	Static system	Fresh water	Experimental value; Locomotor effect
Toxicity algae and other aquatic plants	ErC50	OECD 201	1840 mg/l	72 h	Pseudokirchneriella subcapitata	Static system	Fresh water	Experimental value; Nominal concentration
	NOEC	OECD 201	286 mg/l	72 h	Pseudokirchneriella subcapitata	Static system	Fresh water	Experimental value; Growth rate
Long-term toxicity fish	NOEC	Equivalent to OECD 204	> 100 mg/l	21 day(s)	Danio rerio	Semi-static system	Fresh water	Experimental value; Nominal concentration
Long-term toxicity aquatic crustacea	NOEC	OECD 211	100 mg/l	21 day(s)	Daphnia magna	Semi-static system	Fresh water	Experimental value; Reproduction
Toxicity aquatic micro-organisms	Toxicity threshold	Equivalent to DIN 38412/8	700 mg/l	16 h	Pseudomonas putida	Static system	Fresh water	Experimental value; Nominal concentration

## benzyl alcohol

	Parameter	Method	Value	Duration	Species	Test design	Fresh/salt water	Value determination
Acute toxicity fishes	LC50		460 mg/l	96 h	Pimephales promelas	Static system	Fresh water	Experimental value; Nominal concentration
Acute toxicity crustacea	EC50	OECD 202	230 mg/l	48 h	Daphnia magna		Fresh water	Experimental value; GLP
Toxicity algae and other aquatic plants	NOEC	OECD 201	310 mg/l	72 h	Pseudokirchneriella subcapitata	Static system	Fresh water	Experimental value; GLP
	ErC50	OECD 201	770 mg/l	72 h	Pseudokirchneriella subcapitata	Static system	Fresh water	Experimental value; GLP
Long-term toxicity fish	NOEC	ECOSAR v1.00	48.897 mg/l	30 day(s)	Pisces		Fresh water	QSAR; Nominal concentration
Long-term toxicity aquatic crustacea	NOEC	OECD 211	51 mg/l	21 day(s)	Daphnia magna	Semi-static system	Fresh water	Experimental value; GLP
Toxicity aquatic micro-organisms	IC50	ISO 8192	2100 mg/l	49 h	Activated sludge	Static system	Fresh water	Experimental value
	IC50	ISO 8192	390 mg/l	24 h	Nitrosomonas	Static system	Fresh water	Experimental value; Inhibition

## m-phenylenebis(methylamine)

	Parameter	Method	Value	Duration	Species	Test design	Fresh/salt water	Value determination
Acute toxicity fishes	LC50	OECD 203	87.6 mg/l	96 h	Oryzias latipes	Semi-static system	Fresh water	Experimental value; Nominal concentration
Acute toxicity crustacea	EC50	OECD 202	15.2 mg/l	48 h	Daphnia magna	Static system	Fresh water	Experimental value; Locomotor effect
Toxicity algae and other aquatic plants	ErC50	OECD 201	33.3 mg/l	72 h	Pseudokirchneriella subcapitata	Static system		Experimental value; Nominal concentration
	NOEC	OECD 201	22.9 mg/l	72 h	Pseudokirchneriella subcapitata	Static system		Experimental value; Growth rate
Long-term toxicity fish								Data waiving
Long-term toxicity aquatic crustacea	NOEC	OECD 211	4.7 mg/l	21 day(s)	Daphnia magna	Semi-static system	Fresh water	Experimental value; Reproduction
Toxicity aquatic micro-organisms	EC50	OECD 209	> 1000 mg/l	30 minutes	Activated sludge	Static system		Experimental value; Respiration

## reaction products of ethylenediamine and 2,2'-(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane

	Parameter	Method	Value	Duration	Species	Test design	Fresh/salt water	Value determination
Toxicity algae and other aquatic plants	EL50	OECD 201	0.16 mg/l	72 h	Pseudokirchneriella subcapitata	Semi-static system	Fresh water	Experimental value; Cell numbers
	NOELR	OECD 201	0.1 mg/l	72 h	Pseudokirchneriella subcapitata	Semi-static system	Fresh water	Experimental value; Growth rate

## Conclusion

Very toxic to aquatic life.

Very toxic to aquatic life with long lasting effects.

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# SFA-100 B

## 12.2. Persistence and degradability

### 2-butoxyethanol

#### Biodegradation water

Method	Value	Duration	Value determination
OECD 301B	90 %; Carbon dioxide	28 day(s)	Experimental value

#### Phototransformation air (DT50 air)

Method	Value	Conc. OH-radicals	Value determination
AOPWIN v1.90	5.5 h	1.5E6 /cm <sup>3</sup>	QSAR

### benzyl alcohol

#### Biodegradation water

Method	Value	Duration	Value determination
Equivalent to OECD 301C	92 % - 96 %; Oxygen consumption	14 day(s)	Experimental value

### m-phenylenebis(methylamine)

#### Biodegradation water

Method	Value	Duration	Value determination
OECD 301B	49 %; Carbon dioxide	28 day(s)	Experimental value

#### Phototransformation air (DT50 air)

Method	Value	Conc. OH-radicals	Value determination
AOPWIN v1.92	1.797 h	1.5E6 /cm <sup>3</sup>	Calculated value

### reaction products of ethylenediamine and 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane

#### Biodegradation water

Method	Value	Duration	Value determination
OECD 301B	0 %; GLP	28 day(s)	Experimental value

## Conclusion

### Water

Contains non readily biodegradable component(s)

## 12.3. Bioaccumulative potential

### SFA-100 B

#### Log Kow

Method	Remark	Value	Temperature	Value determination
	Not applicable (mixture)			

### 2-butoxyethanol

#### Log Kow

Method	Remark	Value	Temperature	Value determination
BASF test		0.81	25 °C	Experimental value

### benzyl alcohol

#### Log Kow

Method	Remark	Value	Temperature	Value determination
		1.05	20 °C	Experimental value

### m-phenylenebis(methylamine)

#### Log Kow

Method	Remark	Value	Temperature	Value determination
OECD 107		0.18	25 °C	Experimental value

### reaction products of ethylenediamine and 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane

#### Log Kow

Method	Remark	Value	Temperature	Value determination
		2	20 °C	Experimental value

## Conclusion

No straightforward conclusion can be drawn based upon the available numerical values

## 12.4. Mobility in soil

### 2-butoxyethanol

#### (log) Koc

Parameter	Method	Value	Value determination
log Koc	SRC PCKOCWIN v2.0	0.45 - 0.88	Calculated value

#### Percent distribution

Method	Fraction air	Fraction biota	Fraction sediment	Fraction soil	Fraction water	Value determination
Mackay level I	0.31 %	0 %	0.01 %	0.59 %	99.1 %	QSAR

### benzyl alcohol

#### (log) Koc

Parameter	Method	Value	Value determination
log Koc	SRC PCKOCWIN v2.0	1.122 - 1.332	Calculated value

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# SFA-100 B

m-phenylenebis(methylamine)

(log) Koc

Parameter	Method	Value	Value determination
log Koc		3.11	QSAR

reaction products of ethylenediamine and 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane

(log) Koc

Parameter	Method	Value	Value determination
log Koc	SRC PCKOCWIN v2.0	1.2	QSAR

## Conclusion

Contains component(s) with potential for mobility in the soil  
Contains component(s) that adsorb(s) into the soil

## 12.5. Results of PBT and vPvB assessment

Due to insufficient data no statement can be made whether the component(s) fulfil(s) the criteria of PBT and vPvB according to Annex XIII of Regulation (EC) No 1907/2006.

## 12.6. Endocrine disrupting properties

No evidence of endocrine disrupting properties

## 12.7. Other adverse effects

SFA-100 B

### Greenhouse gases

None of the known components is included in the list of fluorinated greenhouse gases (Regulation (EU) No 517/2014)

### Ozone-depleting potential (ODP)

Not classified as dangerous for the ozone layer (Regulation (EC) No 1005/2009)

2-butoxyethanol

### Groundwater

Groundwater pollutant

m-phenylenebis(methylamine)

### Water ecotoxicity pH

pH shift

reaction products of ethylenediamine and 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane

### Water ecotoxicity pH

pH shift

## SECTION 13: Disposal considerations

The information in this section is a general description. If applicable and available, exposure scenarios are attached in annex. Always use the relevant exposure scenarios that correspond to your identified use.

### 13.1. Waste treatment methods

#### 13.1.1 Provisions relating to waste

##### European Union

Hazardous waste according to Directive 2008/98/EC, as amended by Regulation (EU) No 1357/2014 and Regulation (EU) No 2017/997.  
Waste material code (Directive 2008/98/EC, Decision 2000/0532/EC).

08 04 09\* (wastes from MFSU of adhesives and sealants (including waterproofing products): waste adhesives and sealants containing organic solvents or other hazardous substances). Depending on branch of industry and production process, also other waste codes may be applicable.

#### 13.1.2 Disposal methods

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. Do not discharge into drains or the environment. Dispose of at authorized waste collection point.

#### 13.1.3 Packaging/Container

##### European Union

Waste material code packaging (Directive 2008/98/EC).  
15 01 10\* (packaging containing residues of or contaminated by dangerous substances).

## SECTION 14: Transport information

### Road (ADR)

#### 14.1. UN number

UN number	1760
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#### 14.2. UN proper shipping name

Proper shipping name	corrosive liquid, n.o.s. (reaction products of ethylenediamine and 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane)
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#### 14.3. Transport hazard class(es)

Hazard identification number	80
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Class	8
Classification code	C9
<b>14.4. Packing group</b>	
Packing group	III
Labels	8
<b>14.5. Environmental hazards</b>	
Environmentally hazardous substance mark	yes
<b>14.6. Special precautions for user</b>	
Special provisions	274
Limited quantities	Combination packagings: not more than 5 liters per inner packaging for liquids. A package shall not weigh more than 30 kg. (gross mass)

## Rail (RID)

<b>14.1. UN number</b>	
UN number	1760
<b>14.2. UN proper shipping name</b>	
Proper shipping name	corrosive liquid, n.o.s. (reaction products of ethylenediamine and 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)] bisoxirane)
<b>14.3. Transport hazard class(es)</b>	
Hazard identification number	80
Class	8
Classification code	C9
<b>14.4. Packing group</b>	
Packing group	III
Labels	8
<b>14.5. Environmental hazards</b>	
Environmentally hazardous substance mark	yes
<b>14.6. Special precautions for user</b>	
Special provisions	274
Limited quantities	Combination packagings: not more than 5 liters per inner packaging for liquids. A package shall not weigh more than 30 kg. (gross mass)

## Inland waterways (ADN)

<b>14.1. UN number/ID number</b>	
UN number/ID number	1760
<b>14.2. UN proper shipping name</b>	
Proper shipping name	corrosive liquid, n.o.s. (reaction products of ethylenediamine and 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)] bisoxirane)
<b>14.3. Transport hazard class(es)</b>	
Class	8
Classification code	C9
<b>14.4. Packing group</b>	
Packing group	III
Labels	8
<b>14.5. Environmental hazards</b>	
Environmentally hazardous substance mark	yes
<b>14.6. Special precautions for user</b>	
Special provisions	274
Limited quantities	Combination packagings: not more than 5 liters per inner packaging for liquids. A package shall not weigh more than 30 kg. (gross mass)

## Sea (IMDG/IMSBC)

<b>14.1. UN number</b>	
UN number	1760
<b>14.2. UN proper shipping name</b>	
Proper shipping name	corrosive liquid, n.o.s. (reaction products of ethylenediamine and 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)] bisoxirane)
<b>14.3. Transport hazard class(es)</b>	
Class	8
<b>14.4. Packing group</b>	
Packing group	III
Labels	8
<b>14.5. Environmental hazards</b>	
Marine pollutant	P
Environmentally hazardous substance mark	yes
<b>14.6. Special precautions for user</b>	
Special provisions	223
Special provisions	274

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# SFA-100 B

Limited quantities	Combination packagings: not more than 5 liters per inner packaging for liquids. A package shall not weigh more than 30 kg. (gross mass)
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## 14.7. Maritime transport in bulk according to IMO instruments

Annex II of MARPOL 73/78	Not applicable, based on available data
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## Air (ICAO-TI/IATA-DGR)

### 14.1. UN number/ID number

UN number/ID number	1760
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### 14.2. UN proper shipping name

Proper shipping name	corrosive liquid, n.o.s. (reaction products of ethylenediamine and 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)] bisoxirane)
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### 14.3. Transport hazard class(es)

Class	8
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### 14.4. Packing group

Packing group	III
Labels	8

### 14.5. Environmental hazards

Environmentally hazardous substance mark	yes
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### 14.6. Special precautions for user

Special provisions	A3
Special provisions	A803

### Passenger and cargo transport

Limited quantities: maximum net quantity per packaging	1 L
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## SECTION 15: Regulatory information

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

#### European legislation:

VOC content Directive 2010/75/EU

VOC content	Remark
< 50 %	
< 517 g/l	

#### 2-butoxyethanol

Product name	Skin resorption
2-Butoxyethanol	Skin

Directive 2012/18/EU (Seveso III)

Threshold values under normal circumstances

Substance or category	Low tier (tonnes)	Top tier (tonnes)	Group	For this substance or mixture the summation rule has to be applied for:
E1 Hazardous to the Aquatic Environment in Category Acute 1 or Chronic 1	100	200	None	Eco-toxicity

REACH Annex XVII - Restriction

Contains component(s) subject to restrictions of Annex XVII of Regulation (EC) No 1907/2006: restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles.

	Designation of the substance, of the group of substances or of the mixture	Conditions of restriction
<ul style="list-style-type: none"> <li>2-butoxyethanol</li> <li>benzyl alcohol</li> <li>formaldehyde, polymer with m-phenylenebis(methylamine) and phenol</li> <li>m-phenylenebis(methylamine)</li> </ul>	<p>Liquid substances or mixtures fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008:</p> <p>(a) hazard classes 2.1 to 2.4, 2.6 and 2.7, 2.8 types A and B, 2.9, 2.10, 2.12, 2.13 categories 1 and 2, 2.14 categories 1 and 2, 2.15 types A to F;</p> <p>(b) hazard classes 3.1 to 3.6, 3.7 adverse effects on sexual function and fertility or on development, 3.8 effects other than narcotic effects, 3.9 and 3.10;</p> <p>(c) hazard class 4.1;</p> <p>(d) hazard class 5.1.</p>	<p>1. Shall not be used in:</p> <ul style="list-style-type: none"> <li>— ornamental articles intended to produce light or colour effects by means of different phases, for example in ornamental lamps and ashtrays,</li> <li>— tricks and jokes,</li> <li>— games for one or more participants, or any article intended to be used as such, even with ornamental aspects,</li> </ul> <p>2. Articles not complying with paragraph 1 shall not be placed on the market.</p> <p>3. Shall not be placed on the market if they contain a colouring agent, unless required for fiscal reasons, or perfume, or both, if they:</p> <ul style="list-style-type: none"> <li>— can be used as fuel in decorative oil lamps for supply to the general public, and,</li> <li>— present an aspiration hazard and are labelled with H304,</li> </ul> <p>4. Decorative oil lamps for supply to the general public shall not be placed on the market unless they conform to the European Standard on Decorative oil lamps (EN 14059) adopted by the European Committee for Standardisation (CEN).</p> <p>5. Without prejudice to the implementation of other Community provisions relating to the classification, packaging and labelling of dangerous substances and mixtures, suppliers shall ensure, before the placing on the market, that the following requirements are met:</p> <p>a) lamp oils, labelled with H304, intended for supply to the general public are visibly, legibly and indelibly marked as follows: "Keep lamps filled with this liquid out of the reach of children"; and, by 1 December 2010, "Just a sip of lamp oil — or even sucking the wick of lamps — may lead to life-threatening lung damage";</p>

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# SFA-100 B

		<p>b) grill lighter fluids, labelled with H304, intended for supply to the general public are legibly and indelibly marked by 1 December 2010 as follows: "Just a sip of grill lighter may lead to life threatening lung damage";</p> <p>c) lamp oils and grill lighters, labelled with H304, intended for supply to the general public are packaged in black opaque containers not exceeding 1 litre by 1 December 2010.</p>
2-butoxyethanol	<p>Substances falling within one or more of the following points:</p> <p>(a) substances classified as any of the following in Part 3 of Annex VI to Regulation (EC) No 1272/2008:</p> <ul style="list-style-type: none"> <li>— carcinogen category 1A, 1B or 2, or germ cell mutagen category 1A, 1B or 2, but excluding any such substances classified due to effects only following exposure by inhalation</li> <li>— reproductive toxicant category 1A, 1B or 2 but excluding any such substances classified due to effects only following exposure by inhalation</li> <li>— skin sensitiser category 1, 1A or 1B</li> <li>— skin corrosive category 1, 1A, 1B or 1C or skin irritant category 2</li> <li>— serious eye damage category 1 or eye irritant category 2</li> </ul> <p>(b) substances listed in Annex II to Regulation (EC) No 1223/2009 of the European Parliament and of the Council</p> <p>(c) substances listed in Annex IV to Regulation (EC) No 1223/2009 for which a condition is specified in at least one of the columns g, h and i of the table in that Annex (d) substances listed in Appendix 13 to this Annex.</p> <p>The ancillary requirements in paragraphs 7 and 8 of column 2 of this entry apply to all mixtures for use for tattooing purposes, whether or not they contain a substance falling within points (a) to (d) of this column of this entry.</p>	<p>Mixtures for tattooing purposes are subject to the restrictions of Regulation (EU) 2020/2081</p>

## National legislation Belgium

### SFA-100 B

No data available

### 2-butoxyethanol

Résorption peau	2-Butoxyéthanol; D; La mention "D" signifie que la résorption de l'agent, via la peau, les muqueuses ou les yeux, constitue une partie importante de l'exposition totale. Cette résorption peut se faire tant par contact direct que par présence de l'agent dans l'air.
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### m-phenylenebis(methylamine)

Résorption peau	m-Xylène α, α'-diamine; D; La mention "D" signifie que la résorption de l'agent, via la peau, les muqueuses ou les yeux, constitue une partie importante de l'exposition totale. Cette résorption peut se faire tant par contact direct que par présence de l'agent dans l'air.
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## National legislation The Netherlands

### SFA-100 B

Waterbezwaarlijkheid	A (1); Algemene Beoordelingsmethodiek (ABM)
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### 2-butoxyethanol

Huidopname (wettelijk)	2-Butoxyethanol; H
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## National legislation France

### SFA-100 B

No data available

### 2-butoxyethanol

Risque de pénétration percutanée	2-Butoxyéthanol; Risque de pénétration percutanée
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## National legislation Germany

### SFA-100 B

Lagerklasse (TRGS510)	8 A: Brennbare ätzende Gefahrstoffe
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WGK	3; Verordnung über Anlagen zum Umgang mit wassergefährdenden Stoffen (AwSV) - 18. April 2017
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### 2-butoxyethanol

TA-Luft	5.2.5
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TRGS900 - Risiko der Fruchtschädigung	2-Butoxyethanol; Y; Risiko der Fruchtschädigung braucht bei Einhaltung des Arbeitsplatzgrenzwertes und des biologischen Grenzwertes nicht befürchtet zu werden
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Hautresorptive Stoffe	2-Butoxyethanol; H; Hautresorptiv
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### benzyl alcohol

TA-Luft	5.2.5/I
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TRGS900 - Risiko der Fruchtschädigung	Benzylalkohol; Y; Risiko der Fruchtschädigung braucht bei Einhaltung des Arbeitsplatzgrenzwertes und des biologischen Grenzwertes nicht befürchtet zu werden
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Hautresorptive Stoffe	Benzylalkohol; H; Hautresorptiv
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m-phenylenebis(methylamine)

TA-Luft	5.2.5/I
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reaction products of ethylenediamine and 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane

TA-Luft	5.2.1
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## National legislation Austria

SFA-100 B

No data available

2-butoxyethanol

besondere Gefahr der Hautresorption	2-Butoxyethanol; H
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## National legislation United Kingdom

SFA-100 B

No data available

2-butoxyethanol

Skin absorption	2-Butoxyethanol; Sk
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## Other relevant data

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No data available

2-butoxyethanol

TLV - Carcinogen	2-Butoxyethanol; A3
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IARC - classification	3; 2-butoxyethanol
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m-phenylenebis(methylamine)

TLV - Skin absorption	m-Xylene alfa,alfa'-diamine; Skin; Danger of cutaneous absorption
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## 15.2. Chemical safety assessment

No chemical safety assessment is required for a mixture.

## SECTION 16: Other information

### Full text of any H- and EUH-statements referred to under section 3:

H302 Harmful if swallowed.  
H314 Causes severe skin burns and eye damage.  
H315 Causes skin irritation.  
H317 May cause an allergic skin reaction.  
H318 Causes serious eye damage.  
H319 Causes serious eye irritation.  
H332 Harmful if inhaled.  
H400 Very toxic to aquatic life.  
H410 Very toxic to aquatic life with long lasting effects.  
H412 Harmful to aquatic life with long lasting effects.  
EUH071 Corrosive to the respiratory tract.

(*)	INTERNAL CLASSIFICATION BY BIG
ADI	Acceptable daily intake
AOEL	Acceptable operator exposure level
ATE	Acute Toxicity Estimate
BCF	Bioconcentration Factor
BEI	Biological Exposure Indices
CLP (EU-GHS)	Classification, labelling and packaging (Globally Harmonised System in Europe)
DMEL	Derived Minimal Effect Level
DNEL	Derived No Effect Level
EC10	Effect Concentration 10 %
EC50	Effect Concentration 50 %
ErC50	EC50 in terms of reduction of growth rate
GLP	Good Laboratory Practice
LC0	Lethal Concentration 0 %
LC50	Lethal Concentration 50 %
LD50	Lethal Dose 50 %
LOAEC/LOAEL	Lowest Observed Adverse Effect Concentration/Lowest Observed Adverse Effect Level
NOAEC/NOAEL	No Observed Adverse Effect Concentration/No Observed Adverse Effect Level
NOEC/NOEL	No Observed Effect Concentration/No Observed Effect Level
OECD	Organisation for Economic Co-operation and Development
PBT	Persistent, Bioaccumulative & Toxic
PNEC	Predicted No Effect Concentration
STP	Sludge Treatment Process
vPvB	very Persistent & very Bioaccumulative

The information in this safety data sheet is based on data and samples provided to BIG. The sheet was written to the best of our ability and according to the state of knowledge at that time. The safety data sheet only constitutes a guideline for the safe handling, use, consumption, storage, transport and disposal of the substances/preparations/mixtures mentioned under point 1. New safety data sheets are written from time to time. Only the most recent versions may be used. Unless indicated otherwise word for word on the safety data sheet, the information does not apply to substances/preparations/mixtures in purer form, mixed with other substances or in processes. The safety data sheet offers

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