

SAFETY DATA SHEET

twinbond

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

SFA-100 A

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

1.1. Product identifier

Product name : SFA-100 A
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

Impregnating agent

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
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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.
Skin Irrit.	category 2	H315: Causes skin irritation.
Eye Irrit.	category 2	H319: Causes serious eye irritation.
Aquatic Chronic	category 2	H411: Toxic to aquatic life with long lasting effects.

2.2. Label elements



Contains: bis-[4-(2,3-epoxipropoxy)phenyl]propane; reaction mass of 2,2'-[methylenebis(2,1-phenyleneoxymethylene)]bis(oxirane) and 2,2'-[methylenebis(4,1-phenyleneoxymethylene)]bis(oxirane) and 2-({2-[4-(oxiran-2-ylmethoxy)benzyl]phenoxy)methyl}oxirane; polypropylene glycol, (chloromethyl)oxirane polymer.

Signal word : Warning

H-statements
H317 : May cause an allergic skin reaction.
H315 : Causes skin irritation.
H319 : Causes serious eye irritation.
H411 : Toxic to aquatic life with long lasting effects.

Created by: Brandweerinformatiecentrum voor gevaarlijke stoffen vzw (BIG)
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P-statements

P280	Wear protective gloves, protective clothing and eye protection/face protection.
P264	Wash hands thoroughly after handling.
P302 + P352	IF ON SKIN: Wash with plenty of water and soap.
P333 + P313	If skin irritation or rash occurs: Get medical advice/attention.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337 + P313	If eye irritation persists: Get medical advice/attention.

2.3. Other hazards

No other hazards known

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
bis-[4-(2,3-epoxipropoxy)phenyl]propane 01-2119456619-26	1675-54-3 216-823-5	40% <C<70%	Skin Sens. 1; H317 Skin Irrit. 2; H315 Eye Irrit. 2; H319 Aquatic Chronic 2; H411 Eye Irrit. 2; H319: C≥5%, (CLP Annex VI (ATP 0)) Skin Irrit. 2; H315: C≥5%, (CLP Annex VI (ATP 0))	(1)(6)(10)	Constituent	
reaction mass of 2,2'-[methylenebis(2,1-phenyleneoxymethylene)]bis(oxirane) and 2,2'-[methylenebis(4,1-phenyleneoxymethylene)]bis(oxirane) and 2-({2-[4-(oxiran-2-ylmethoxy)benzyl]phenoxy)methyl}oxirane 01-2119454392-40	9003-36-5	15% <C<30%	Skin Sens. 1; H317 Skin Irrit. 2; H315 Aquatic Chronic 2; H411	(1)(10)	Constituent	
polypropylene glycol, (chloromethyl)oxirane polymer	9072-62-2	C≤20%	Skin Sens. 1; H317 Skin Irrit. 2; H315 Eye Irrit. 2; H319	(1)(10)	Constituent	

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

(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. In case of respiratory problems, consult a doctor/medical service.

After skin contact:

If possible, wipe up/dry remove chemical. Then rinse/shower immediately with (lukewarm) water. If irritation persists, consult a doctor/medical service.

After eye contact:

Rinse immediately with plenty of water. Remove contact lenses, if present and easy to do. Continue rinsing. If irritation persists, consult a doctor/medical service.

After ingestion:

Rinse mouth with water. If you feel unwell, consult a doctor/medical service. Do not wait for symptoms to occur to consult Poison Center.

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

4.2.1 Acute symptoms

After inhalation:

No effects known.

After skin contact:

Tingling/irritation of the skin.

After eye contact:

Irritation of the eye tissue.

After ingestion:

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No effects known.

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 (hydrogen chloride, 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. Use water moderately and if possible collect or contain it. Take account of environmentally hazardous firefighting water.

5.3.2 Special protective equipment for fire-fighters:

Gloves (EN 374). Face shield (EN ISO 16321). Protective clothing (EN 14605 or EN 13034). 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. 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 ISO 16321). Protective clothing (EN 14605 or EN 13034).

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.

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.

7.2. Conditions for safe storage, including any incompatibilities

7.2.1 Safe storage requirements:

Meet the legal requirements. Keep container in a well-ventilated place. 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)

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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.

Germany

Bisphenol-A-diglycidylether	vgl. Abschn. IIb
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b) National biological limit values

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

8.1.2 Sampling methods

Product name	Test	Number
Diglycidyl Ether of Bisphenol A	OSHA	1018

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

bis-[4-(2,3-epoxipropoxy)phenyl]propane

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term systemic effects inhalation	4.93 mg/m ³	
	Long-term systemic effects dermal	0.75 mg/kg bw/day	

reaction mass of 2,2'-[methylenebis(2,1-phenyleneoxymethylene)]bis(oxirane) and 2,2'-[methylenebis(4,1-phenyleneoxymethylene)]bis(oxirane) and 2-([2-[4-(oxiran-2-ylmethoxy)benzyl]phenoxy)methyl]oxirane

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term systemic effects inhalation	29.39 mg/m ³	
	Long-term systemic effects dermal	104.15 mg/kg bw/day	
DMEL	Acute local effects dermal	8.3 µg/cm ²	

DNEL/DMEL - General population

bis-[4-(2,3-epoxipropoxy)phenyl]propane

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term systemic effects inhalation	0.87 mg/m ³	
	Long-term systemic effects dermal	89.3 µg/kg bw/day	
	Long-term systemic effects oral	0.5 mg/kg bw/day	

reaction mass of 2,2'-[methylenebis(2,1-phenyleneoxymethylene)]bis(oxirane) and 2,2'-[methylenebis(4,1-phenyleneoxymethylene)]bis(oxirane) and 2-([2-[4-(oxiran-2-ylmethoxy)benzyl]phenoxy)methyl]oxirane

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term systemic effects inhalation	8.7 mg/m ³	
	Long-term systemic effects dermal	62.5 mg/kg bw/day	
	Long-term systemic effects oral	6.25 mg/kg bw/day	

PNEC

bis-[4-(2,3-epoxipropoxy)phenyl]propane

Compartments	Value	Remark
Fresh water	0.006 mg/l	
Marine water	0.001 mg/l	
Fresh water (intermittent releases)	0.018 mg/l	
Marine water (intermittent releases)	0.002 mg/l	
STP	10 mg/l	
Fresh water sediment	0.341 mg/kg sediment dw	
Marine water sediment	0.034 mg/kg sediment dw	
Soil	0.065 mg/kg soil dw	
Oral	11 mg/kg food	

reaction mass of 2,2'-[methylenebis(2,1-phenyleneoxymethylene)]bis(oxirane) and 2,2'-[methylenebis(4,1-phenyleneoxymethylene)]bis(oxirane) and 2-([2-[4-(oxiran-2-ylmethoxy)benzyl]phenoxy)methyl]oxirane

Compartments	Value	Remark
Fresh water	0.003 mg/l	
Fresh water (intermittent releases)	0.025 mg/l	
Marine water	0 mg/l	
STP	10 mg/l	
Fresh water sediment	0.294 mg/kg sediment dw	
Marine water sediment	0.029 mg/kg sediment dw	
Soil	0.237 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.

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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. 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:

Respiratory protection not required in normal conditions.

b) Hand protection:

Protective gloves against chemicals (EN 374).

c) Eye protection:

Face shield (EN ISO 16321).

d) Skin protection:

Protective clothing (EN 14605 or EN 13034).

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
Colour	Variable in colour, depending on the composition
Odour	Characteristic odour
Odour threshold	No data available in the literature
Melting point	No data available in the literature
Boiling point	No data available in the literature
Flammability	Not classified as flammable
Explosion limits	No data available in the literature
Flash point	> 150 °C
Auto-ignition temperature	No data available in the literature
Decomposition temperature	No data available in the literature
pH	No data available in the literature
Kinematic viscosity	No data available in the literature
Dynamic viscosity	No data available in the literature
Solubility	Water ; complete
Log Kow	Not applicable (mixture)
Vapour pressure	No data available in the literature
Absolute density	No data available in the literature
Relative density	No data available in the literature
Relative vapour density	No data available in the literature
Particle size	Not applicable (liquid)

9.2. Other information

No data available

SECTION 10: Stability and reactivity

10.1. Reactivity

Heating increases the fire hazard.

10.2. Chemical stability

Stable under normal conditions.

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 (hydrogen chloride, carbon monoxide - carbon dioxide).

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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

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No (test) data on the mixture available

Judgement is based on the relevant ingredients

bis-[4-(2,3-epoxipropoxy)phenyl]propane

Route of exposure	Parameter	Method	Value	Exposure time	Species	Value determination	Remark
Oral	LD50	OECD 420	> 2000 mg/kg bw		Rat (female)	Experimental value	
Dermal	LD50	OECD 402	> 2000 mg/kg bw		Rat (male / female)	Experimental value	

reaction mass of 2,2'-(methylenebis(2,1-phenyleneoxymethylene))bis(oxirane) and 2,2'-(methylenebis(4,1-phenyleneoxymethylene))bis(oxirane) and 2-((2-[4-(oxiran-2-ylmethoxy)benzyl]phenoxy)methyl)oxirane

Route of exposure	Parameter	Method	Value	Exposure time	Species	Value determination	Remark
Oral	LD50	Equivalent to OECD 401	> 5000 mg/kg bw		Rat (male / female)	Experimental value	
Dermal	LD50	Equivalent to OECD 402	> 2000 mg/kg bw	24 h	Rat (male / female)	Experimental value	
Inhalation						Data waiving	

Conclusion

Not classified for acute toxicity

Corrosion/irritation

SFA-100 A

No (test) data on the mixture available

Classification is based on the relevant ingredients

bis-[4-(2,3-epoxipropoxy)phenyl]propane

Route of exposure	Result	Method	Exposure time	Time point	Species	Value determination	Remark
Eye	Not irritating	OECD 405		24; 48; 72 hrs; 7 days	Rabbit	Experimental value	Single treatment
Eye	Irritating; category 2					Annex VI	
Skin	Slightly irritating	OECD 404	4 h	24; 48; 72 hours	Rabbit	Experimental value	
Skin	Irritating; category 2					Annex VI	

reaction mass of 2,2'-(methylenebis(2,1-phenyleneoxymethylene))bis(oxirane) and 2,2'-(methylenebis(4,1-phenyleneoxymethylene))bis(oxirane) and 2-((2-[4-(oxiran-2-ylmethoxy)benzyl]phenoxy)methyl)oxirane

Route of exposure	Result	Method	Exposure time	Time point	Species	Value determination	Remark
Eye	Not irritating	Equivalent to OECD 405		24; 48; 72 hours	Rabbit	Experimental value	Single treatment without rinsing
Skin	Irritating	Equivalent to OECD 404	4 h	1; 24; 48; 72 hrs; 7; 10; 14 days	Rabbit	Experimental value	

polypropylene glycol, (chloromethyl)oxirane polymer

Route of exposure	Result	Method	Exposure time	Time point	Species	Value determination	Remark
Eye	Irritating; category 2					Literature study	
Skin	Irritating; category 2					Literature study	

Conclusion

Causes skin irritation.

Causes serious eye irritation.

Not classified as irritating to the respiratory system

Respiratory or skin sensitisation

SFA-100 A

No (test) data on the mixture available

Classification is based on the relevant ingredients

SFA-100 A

bis-[4-(2,3-epoxipropoxy)phenyl]propane

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 mass of 2,2'-[methylenebis(2,1-phenyleneoxymethylene)]bis(oxirane) and 2,2'-[methylenebis(4,1-phenyleneoxymethylene)]bis(oxirane) and 2-((2-[4-(oxiran-2-ylmethoxy)benzyl]phenoxy)methyl)oxirane

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	

polypropylene glycol, (chloromethyl)oxirane polymer

Route of exposure	Result	Method	Exposure time	Observation time point	Species	Value determination	Remark
Skin	Sensitizing; category 1					Literature study	

Conclusion

May cause an allergic skin reaction.

Not classified as sensitizing for inhalation

Specific target organ toxicity

SFA-100 A

No (test)data on the mixture available

Judgement is based on the relevant ingredients

bis-[4-(2,3-epoxipropoxy)phenyl]propane

Route of exposure	Parameter	Method	Value	Organ/Effect	Exposure time	Species	Value determination	Remark
Oral (stomach tube)	NOAEL	OECD 408	50 mg/kg bw/day	No effect	14 weeks (7 days / week)	Rat (male / female)	Experimental value	
Dermal	NOAEL systemic effects	OECD 411	100 mg/kg bw/day	No adverse systemic effects	13 weeks (3 times / week)	Mouse (male / female)	Experimental value	

reaction mass of 2,2'-[methylenebis(2,1-phenyleneoxymethylene)]bis(oxirane) and 2,2'-[methylenebis(4,1-phenyleneoxymethylene)]bis(oxirane) and 2-((2-[4-(oxiran-2-ylmethoxy)benzyl]phenoxy)methyl)oxirane

Route of exposure	Parameter	Method	Value	Organ/Effect	Exposure time	Species	Value determination	Remark
Oral (stomach tube)	NOAEL	OECD 408	250 mg/kg bw/day	No effect	13 weeks (daily)	Rat (male / female)	Experimental value	
Dermal							Data waiving	
Inhalation							Data waiving	

Conclusion

Not classified for subchronic toxicity

Mutagenicity (in vitro)

SFA-100 A

No (test)data on the mixture available

Judgement is based on the relevant ingredients

bis-[4-(2,3-epoxipropoxy)phenyl]propane

Result	Method	Test substrate	Effect	Value determination	Remark
Negative with metabolic activation, negative without metabolic activation	OECD 472	Bacteria (S. typhimurium and E. coli)	No effect	Experimental value	

reaction mass of 2,2'-[methylenebis(2,1-phenyleneoxymethylene)]bis(oxirane) and 2,2'-[methylenebis(4,1-phenyleneoxymethylene)]bis(oxirane) and 2-((2-[4-(oxiran-2-ylmethoxy)benzyl]phenoxy)methyl)oxirane

Result	Method	Test substrate	Effect	Value determination	Remark
Positive with metabolic activation, positive without metabolic activation	OECD 471	Bacteria (S.typhimurium)		Experimental value	
Positive with metabolic activation, positive without metabolic activation	OECD 473	Human lymphocytes		Experimental value	

Mutagenicity (in vivo)

SFA-100 A

No (test)data on the mixture available

Judgement is based on the relevant ingredients

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bis-[4-(2,3-epoxipropoxy)phenyl]propane

Result	Method	Exposure time	Test substrate	Organ/Effect	Value determination	Remark
Negative (Oral (stomach tube))	OECD 488	4 weeks (daily)	Rat (male)	No effect	Experimental value	

reaction mass of 2,2'-[methylenebis(2,1-phenyleneoxymethylene)]bis(oxirane) and 2,2'-[methylenebis(4,1-phenyleneoxymethylene)]bis(oxirane) and 2-([2-[4-(oxiran-2-ylmethoxy)benzyl]phenoxy)methyl]oxirane

Result	Method	Exposure time	Test substrate	Organ/Effect	Value determination	Remark
Negative (Oral (stomach tube))	OECD 474	2 dose(s)/24-hour interval	Mouse (male / female)	No effect	Experimental value	

Conclusion

Not classified for mutagenic or genotoxic toxicity

Carcinogenicity

SFA-100 A

No (test)data on the mixture available

Judgement is based on the relevant ingredients

bis-[4-(2,3-epoxipropoxy)phenyl]propane

Route of exposure	Parameter	Method	Value	Organ/Effect	Exposure time	Species	Value determination	Remark
Dermal	NOEL	OECD 453	100 mg/kg bw/day	No carcinogenic effect	104 weeks (5 days / week)	Rat (female)	Experimental value	
Oral (stomach tube)	NOAEL	OECD 453	15 mg/kg bw/day - 100 mg/kg bw/day	No carcinogenic effect	104 week(s)	Rat (male / female)	Experimental value	

Conclusion

Not classified for carcinogenicity

Reproductive toxicity

SFA-100 A

No (test)data on the mixture available

Judgement is based on the relevant ingredients

bis-[4-(2,3-epoxipropoxy)phenyl]propane

Category	Parameter	Method	Value	Exposure time	Species	Effect	Value determination	Remark
Developmental toxicity (Oral (stomach tube))	NOAEL	OECD 414	180 mg/kg bw/day	13 days (gestation, daily)	Rabbit	No effect	Experimental value	
Developmental toxicity (Dermal)	NOAEL	US EPA	300 mg/kg bw/day	28 days (gestation, daily)	Rabbit	Foetus (no effect)	Experimental value	
Maternal toxicity (Oral (stomach tube))	NOAEL	OECD 414	60 mg/kg bw/day	13 days (gestation, daily)	Rabbit	No effect	Experimental value	
Maternal toxicity (Dermal)	NOAEL	US EPA	30 mg/kg bw/day	28 days (gestation, daily)	Rabbit	No effect	Experimental value	
Effects on fertility (Oral (stomach tube))	NOEL	OECD 416	750 mg/kg bw/day	238 day(s)	Rat (male / female)	No effect	Experimental value	

reaction mass of 2,2'-[methylenebis(2,1-phenyleneoxymethylene)]bis(oxirane) and 2,2'-[methylenebis(4,1-phenyleneoxymethylene)]bis(oxirane) and 2-([2-[4-(oxiran-2-ylmethoxy)benzyl]phenoxy)methyl]oxirane

Category	Parameter	Method	Value	Exposure time	Species	Effect	Value determination	Remark
Developmental toxicity (Oral (stomach tube))	NOAEL	OECD 414	180 mg/kg bw/day	13 days (gestation, daily)	Rabbit	No effect	Read-across	
Maternal toxicity (Oral (stomach tube))	NOAEL	OECD 414	60 mg/kg bw/day		Rabbit	No effect	Read-across	
Effects on fertility (Oral (stomach tube))	NOEL	OECD 416	750 mg/kg bw/day		Rat (male / female)	No effect	Experimental value	

Conclusion

Not classified for reprotoxic or developmental toxicity

Aspiration hazard

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Judgement is based on the relevant ingredients

Not classified for aspiration toxicity

Toxicity other effects

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No (test)data on the mixture available

Chronic effects from short and long-term exposure

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Skin rash/inflammation.

11.2. Information on other hazards

No evidence of endocrine disrupting properties

SECTION 12: Ecological information

12.1. Toxicity

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No (test)data on the mixture available

Judgement of the mixture is based on the relevant ingredients

bis-[4-(2,3-epoxipropoxy)phenyl]propane

	Parameter	Method	Value	Duration	Species	Test design	Fresh/salt water	Value determination
Acute toxicity fishes	LC50	OECD 203	1.8 mg/l	96 h	Oncorhynchus mykiss	Static system	Fresh water	Experimental value; Nominal concentration
Acute toxicity crustacea	EC50	Equivalent to OECD 202	1.7 mg/l	48 h	Daphnia magna	Static system	Fresh water	Experimental value; Locomotor effect
Toxicity algae and other aquatic plants	EC50	EPA 660/3 - 75/009	> 11 mg/l	72 h	Selenastrum capricornutum	Static system	Fresh water	Experimental value; Growth rate
	NOEC	EPA 660/3 - 75/009	4.2 mg/l	72 h	Selenastrum capricornutum	Static system	Fresh water	Experimental value; Growth rate
Long-term toxicity aquatic crustacea	NOEC	Equivalent to OECD 211	0.3 mg/l	21 day(s)	Daphnia magna	Semi-static system	Fresh water	Experimental value; GLP
Toxicity aquatic micro-organisms	IC50		> 100 mg/l	3 h	Activated sludge			Experimental value; Respiration

reaction mass of 2,2'-[methylenebis(2,1-phenyleneoxymethylene)]bis(oxirane) and 2,2'-[methylenebis(4,1-phenyleneoxymethylene)]bis(oxirane) and 2-([2-[4-(oxiran-2-ylmethoxy)benzyl]phenoxy)methyl]oxirane

	Parameter	Method	Value	Duration	Species	Test design	Fresh/salt water	Value determination
Acute toxicity fishes	LC50	OECD 203	5.7 mg/l	96 h	Leuciscus idus	Semi-static system	Fresh water	Experimental value; Nominal concentration
Acute toxicity crustacea	EC50	OECD 202	3.5 mg/l	48 h	Daphnia magna	Static system	Fresh water	Experimental value; Nominal concentration
Toxicity algae and other aquatic plants	EC50	Equivalent to OECD 201	> 1.8 mg/l	72 h	Pseudokirchneriella subcapitata	Static system	Fresh water	Experimental value
Long-term toxicity aquatic crustacea	NOEC	Equivalent to OECD 211	0.3 mg/l	21 day(s)	Daphnia magna	Semi-static system	Fresh water	Experimental value; GLP

Conclusion

Toxic to aquatic life with long lasting effects.

12.2. Persistence and degradability

bis-[4-(2,3-epoxipropoxy)phenyl]propane

Biodegradation water

Method	Value	Duration	Value determination
OECD 301F	5 %; Oxygen consumption	28 day(s)	Experimental value

reaction mass of 2,2'-[methylenebis(2,1-phenyleneoxymethylene)]bis(oxirane) and 2,2'-[methylenebis(4,1-phenyleneoxymethylene)]bis(oxirane) and 2-([2-[4-(oxiran-2-ylmethoxy)benzyl]phenoxy)methyl]oxirane

Biodegradation water

Method	Value	Duration	Value determination
EU Method C.4-E	0 %; Oxygen consumption	28 day(s)	Experimental value

polypropylene glycol, (chloromethyl)oxirane polymer

Phototransformation air (DT50 air)

Method	Value	Conc. OH-radicals	Value determination
AOPWIN v1.92	38 day(s)	1.5E6 /cm ³	Calculated value

Conclusion

Water

Contains non readily biodegradable component(s)

12.3. Bioaccumulative potential

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Log Kow

Method	Remark	Value	Temperature	Value determination
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Not applicable (mixture)

bis-[4-(2,3-epoxipropoxy)phenyl]propane

BCF fishes

Parameter	Method	Value	Duration	Species	Value determination
BCF		31; Fresh weight			QSAR

Log Kow

Method	Remark	Value	Temperature	Value determination
OECD 117		2.6 - 3.8	25 °C	Experimental value

reaction mass of 2,2'-[methylenebis(2,1-phenyleneoxymethylene)]bis(oxirane) and 2,2'-[methylenebis(4,1-phenyleneoxymethylene)]bis(oxirane) and 2-([2-[4-(oxiran-2-ylmethoxy)benzyl]phenoxy)methyl]oxirane

BCF fishes

Parameter	Method	Value	Duration	Species	Value determination
BCF		150 l/kg		Pisces	QSAR

Log Kow

Method	Remark	Value	Temperature	Value determination
OECD 117		2.7 - 3.6		Experimental value

polypropylene glycol, (chloromethyl)oxirane polymer

Log Kow

Method	Remark	Value	Temperature	Value determination
		-0.3		

Conclusion

Does not contain bioaccumulative component(s)

12.4. Mobility in soil

bis-[4-(2,3-epoxipropoxy)phenyl]propane

(log) Koc

Parameter	Method	Value	Value determination
log Koc	SRC PCKOCWIN v2.0	2.7	QSAR

reaction mass of 2,2'-[methylenebis(2,1-phenyleneoxymethylene)]bis(oxirane) and 2,2'-[methylenebis(4,1-phenyleneoxymethylene)]bis(oxirane) and 2-([2-[4-(oxiran-2-ylmethoxy)benzyl]phenoxy)methyl]oxirane

(log) Koc

Parameter	Method	Value	Value determination
log Koc	OECD 121	3.7	Experimental value

polypropylene glycol, (chloromethyl)oxirane polymer

(log) Koc

Parameter	Method	Value	Value determination
log Koc	SRC PCKOCWIN v2.0	0.5 - 0.7	Calculated value

Conclusion

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

12.5. Results of PBT and vPvB assessment

Does not contain component(s) that meet(s) the criteria of PBT and/or vPvB as listed in Annex XIII of Regulation (EC) No 1907/2006.

12.6. Endocrine disrupting properties

No evidence of endocrine disrupting properties

12.7. Other adverse effects

PMT conclusion

Does not contain component(s) that meet(s) the criteria of PMT and/or vPvM as listed in Annex I of Regulation (EC) No 1272/2008

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Greenhouse gases

None of the known components is included in the list of fluorinated greenhouse gases (Regulation (EU) No 2024/573)

Ozone-depleting potential (ODP)

Not classified as dangerous for the ozone layer (Regulation (EC) No 2024/590)

Groundwater

Groundwater pollutant

bis-[4-(2,3-epoxipropoxy)phenyl]propane

Greenhouse gases

Not included in the list of fluorinated greenhouse gases (Regulation (EU) No 2024/573)

Ozone-depleting potential (ODP)

Not classified as dangerous for the ozone layer (Regulation (EC) No 2024/590)

Groundwater

Groundwater pollutant

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reaction mass of 2,2'-[methylenebis(2,1-phenyleneoxymethylene)]bis(oxirane) and 2,2'-[methylenebis(4,1-phenyleneoxymethylene)]bis(oxirane) and 2-([2-[4-(oxiran-2-ylmethoxy)benzyl]phenoxy)methyl]oxirane

Greenhouse gases

Not included in the list of fluorinated greenhouse gases (Regulation (EU) No 2024/573)

Ozone-depleting potential (ODP)

Not classified as dangerous for the ozone layer (Regulation (EC) No 2024/590)

polypropylene glycol, (chloromethyl)oxirane polymer

Greenhouse gases

Not included in the list of fluorinated greenhouse gases (Regulation (EU) No 2024/573)

Ozone-depleting potential (ODP)

Not classified as dangerous for the ozone layer (Regulation (EC) No 2024/590)

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. The waste code must be assigned by the user, preferably in consultation with the (environmental) authorities concerned.

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. Should not be landfilled with household waste. 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 or ID number

UN number	3082
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14.2. UN proper shipping name

Proper shipping name	environmentally hazardous substance, liquid, n.o.s. (bis-[4-(2,3-epoxipropoxy)phenyl]propane)
----------------------	---

14.3. Transport hazard class(es)

Hazard identification number	90
Class	9
Classification code	M6

14.4. Packing group

Packing group	III
Labels	9

14.5. Environmental hazards

Environmentally hazardous substance mark	yes
--	-----

14.6. Special precautions for user

Special provisions	274
Special provisions	335
Special provisions	375
Special provisions	601
Special provisions	650
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)

14.1. UN number or ID number

UN number	3082
-----------	------

14.2. UN proper shipping name

Proper shipping name	environmentally hazardous substance, liquid, n.o.s. (bis-[4-(2,3-epoxipropoxy)phenyl]propane)
----------------------	---

14.3. Transport hazard class(es)

Hazard identification number	90
Class	9
Classification code	M6

14.4. Packing group

Packing group	III
Labels	9

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14.5. Environmental hazards

Environmentally hazardous substance mark	yes
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14.6. Special precautions for user

Special provisions	274
Special provisions	335
Special provisions	375
Special provisions	601
Special provisions	650
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)

14.1. UN number or ID number

UN number/ID number	3082
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14.2. UN proper shipping name

Proper shipping name	environmentally hazardous substance, liquid, n.o.s. (bis-[4-(2,3-epoxipropoxi)phenyl]propane)
----------------------	---

14.3. Transport hazard class(es)

Class	9
Classification code	M6

14.4. Packing group

Packing group	III
Labels	9

14.5. Environmental hazards

Environmentally hazardous substance mark	yes
--	-----

14.6. Special precautions for user

Special provisions	274
Special provisions	335
Special provisions	375
Special provisions	601
Special provisions	650
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)

14.1. UN number or ID number

UN number	3082
-----------	------

14.2. UN proper shipping name

Proper shipping name	environmentally hazardous substance, liquid, n.o.s. (bis-[4-(2,3-epoxipropoxi)phenyl]propane)
----------------------	---

14.3. Transport hazard class(es)

Class	9
-------	---

14.4. Packing group

Packing group	III
Labels	9

14.5. Environmental hazards

Marine pollutant	P
Environmentally hazardous substance mark	yes

14.6. Special precautions for user

Special provisions	274
Special provisions	335
Special provisions	375
Special provisions	969
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).

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 or ID number

UN number/ID number	3082
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14.2. UN proper shipping name

Proper shipping name	environmentally hazardous substance, liquid, n.o.s. (bis-[4-(2,3-epoxipropoxi)phenyl]propane)
----------------------	---

14.3. Transport hazard class(es)

Class	9
-------	---

14.4. Packing group

Packing group	III
Labels	9

14.5. Environmental hazards

Environmentally hazardous substance mark	yes
--	-----

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14.6. Special precautions for user

Special provisions	A158
Special provisions	A197
Special provisions	A215
Special provisions	A97
Passenger and cargo transport	
Limited quantities: maximum net quantity per packaging	30 kg G

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
20 %	

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:
E2 Hazardous to the Aquatic Environment in Category Chronic 2	200	500	None	Eco-toxicity

REACH Candidate list

Does not contain component(s) included in candidate list of substances of very high concern (SVHC) for authorisation (Article 59 of Regulation (EC) No 1907/2006)

REACH Annex XIV - Authorisation

Does not contain component(s) included in Annex XIV of Regulation (EC) No 1907/2006: list of substances subject to authorisation

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
· bis-[4-(2,3-epoxipropoxy)phenyl]propane · reaction mass of 2,2'-[methylenebis(2,1-phenyleneoxymethylene)]bis(oxirane) and 2,2'-[methylenebis(4,1-phenyleneoxymethylene)]bis(oxirane) and 2-({2-[4-(oxiran-2-ylmethoxy)benzyl]phenoxy)methyl}oxirane · polypropylene glycol, (chloromethyl)oxirane polymer	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: (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; (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; (c) hazard class 4.1; (d) hazard class 5.1.	1. Shall not be used in: — ornamental articles intended to produce light or colour effects by means of different phases, for example in ornamental lamps and ashtrays, — tricks and jokes, — games for one or more participants, or any article intended to be used as such, even with ornamental aspects, 2. Articles not complying with paragraph 1 shall not be placed on the market. 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: — can be used as fuel in decorative oil lamps for supply to the general public, and, — present an aspiration hazard and are labelled with H304, 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). 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: 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"; 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"; 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.
· bis-[4-(2,3-epoxipropoxy)phenyl]propane	Substances falling within one or more of the following points: (a) substances classified as any of the following in Part 3 of Annex VI to Regulation (EC) No 1272/2008: — 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 — reproductive toxicant category 1A, 1B or 2 but excluding any such substances classified due to effects only following exposure by inhalation — skin sensitiser category 1, 1A or 1B	Mixtures for tattooing purposes are subject to the restrictions of Regulation (EU) 2020/2081

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— skin corrosive category 1, 1A, 1B or 1C or skin irritant category 2
 — serious eye damage category 1 or eye irritant category 2
 (b) substances listed in Annex II to Regulation (EC) No 1223/2009 of the European Parliament and of the Council
 (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.
 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.

National legislation Belgium

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No data available

National legislation The Netherlands

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Waterbezwaarlijkheid	A (2); Algemene Beoordelingsmethodiek (ABM)
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National legislation France

SFA-100 A

No data available

National legislation Germany

SFA-100 A

WGK	2; Verordnung über Anlagen zum Umgang mit wassergefährdenden Stoffen (AwSV) - 18. April 2017
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bis-[4-(2,3-epoxipropoxy)phenyl]propane

TA-Luft	5.2.5
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reaction mass of 2,2'-[methylenebis(2,1-phenyleneoxymethylene)]bis(oxirane) and 2,2'-[methylenebis(4,1-phenyleneoxymethylene)]bis(oxirane) and 2-([2-[4-(oxiran-2-ylmethoxy)benzyl]phenoxy)methyl]oxirane

TA-Luft	5.2.5
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polypropylene glycol, (chloromethyl)oxirane polymer

TA-Luft	5.2.5
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National legislation Austria

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No data available

National legislation United Kingdom

SFA-100 A

No data available

National legislation Ireland

SFA-100 A

No data available

Other relevant data

SFA-100 A

No data available

bis-[4-(2,3-epoxipropoxy)phenyl]propane

IARC - classification	3; Bisphenol a diglycidyl ether
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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:

H315 Causes skin irritation.
 H317 May cause an allergic skin reaction.
 H319 Causes serious eye irritation.
 H411 Toxic to aquatic life with long lasting effects.

(*)	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)

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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
HS	Harmonized System of Nomenclature, a standardized international system for classifying goods under the Harmonized System Convention, as drawn up by the World Customs Organization Secretariat
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 no quality specification for the substances/preparations/mixtures in question. Compliance with the instructions in this safety data sheet does not release the user from the obligation to take all measures dictated by common sense, regulations and recommendations or which are necessary and/or useful based on the real applicable circumstances. BIG does not guarantee the accuracy or exhaustiveness of the information provided and cannot be held liable for any changes by third parties. This safety data sheet is only to be used within the European Union, Switzerland, Iceland, Norway and Liechtenstein. Any use outside of this area is at your own risk. Use of this safety data sheet is subject to the licence and liability limiting conditions as stated in your BIG licence agreement or when this is failing the general conditions of BIG. All intellectual property rights to this sheet are the property of BIG and its distribution and reproduction are limited. Consult the mentioned agreement/conditions for details.