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

1.1 Product identifier

Trade name : EPOCAST® 1633 A US

Unique Formula Identifier (UFI) : AVYN-504K-J001-KGHE

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

Use of the Substance/Mixture : Epoxy constituents

1.3 Details of the supplier of the safety data sheet

Company : Huntsman Advanced Materials (Europe) BV
Address : Grijpenlaan 18
3300 Tienen
Belgium
Telephone : +41 61 299 20 41
Telefax : +41 61 299 20 40

E-mail address of person responsible for the SDS : Global_Product_EHS_AdMat@huntsman.com

1.4 Emergency telephone

Emergency telephone : Berlin: 0049 30 19 24 0 & 0049 30 30 68 6 7 11
Bonn: 0049 228 19 27 0 & 0049 228 28 7 3 32 11
Erfurt: 0049 361 73 07 30
Freiburg: 0049 761 16 24 0
Göttingen: 0049 51 19 24 0 & 0049 551 38 31 80
Homburg: 0049 6841 19 24 0
Mainz: 0049 6131 19 24 0 & 0049 6131 23 24 66
München: 0049 89 19 24 0
Nürnberg: 0049 911 39 8 2 45 1
EUROPE: +32 35 75 1234
France ORFILA: +33(0)145425959
ASIA: +65 6336-6011
China: +86 20 39377888
+86 532 83889090
India: + 91 22 42 87 5333
Australia: 1800 786 152
New Zealand: 0800 767 437
USA: +1 800-424-9300

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Skin irritation, Category 2 H315: Causes skin irritation.

Eye irritation, Category 2	H319: Causes serious eye irritation.
Skin sensitisation, Category 1	H317: May cause an allergic skin reaction.
Carcinogenicity, Category 2	H351: Suspected of causing cancer.
Long-term (chronic) aquatic hazard, Category 2	H411: Toxic to aquatic life with long lasting effects.

2.2 Label elements

Labeling (REGULATION (EC) No 1272/2008)

Hazard pictograms :



Signal Word : Warning

Hazard Statements :

H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H351	Suspected of causing cancer.
H411	Toxic to aquatic life with long lasting effects.

Precautionary Statements :

Prevention:

P201	Obtain special instructions before use.
P261	Avoid breathing mist or vapors.
P264	Wash skin thoroughly after handling.
P273	Avoid release to the environment.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection/ hearing protection.

Response:

P391	Collect spillage.

Hazardous ingredients which must be listed on the label:

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
2-ethyl-2-[[(1-oxoallyl)oxy]methyl]-1,3-propanediyl diacrylate

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Ecological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher

Toxicological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Hazardous ingredients

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)
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	Skin Irrit. 2; H315 Skin Sens. 1A; H317 Aquatic Chronic 2; H411	>= 30 - < 50
2-ethyl-2-[[(1-oxoallyl)oxy]methyl]-1,3-propanediyl diacrylate	15625-89-5 239-701-3 607-111-00-9	Skin Irrit. 2; H315 Eye Irrit. 2; H319 Skin Sens. 1; H317 Carc. 2; H351 Aquatic Acute 1; H400 Aquatic Chronic 1; H410 M-Factor (Acute aquatic toxicity): 1 M-Factor (Chronic aquatic toxicity): 1	>= 10 - < 20
Siloxanes and Silicones, di-Me, 3-hydroxypropyl Me, ethoxylated	68937-54-2 Polymer	Aquatic Chronic 3; H412	>= 1 - < 2,5
octamethylcyclotetrasiloxane	556-67-2 209-136-7 014-018-00-1 01-2119529238-36	Flam. Liq. 3; H226 Repr. 2; H361f Aquatic Chronic 1; H410 M-Factor (Chronic aquatic toxicity): 10	>= 0,025 - < 0,1
Substances with a workplace exposure limit :			
xylene	1330-20-7 215-535-7 601-022-00-9 01-2119488216-32	Flam. Liq. 3; H226 Acute Tox. 4; H332 Acute Tox. 4; H312 Skin Irrit. 2; H315 Eye Irrit. 2; H319 STOT SE 3; H335 (Respiratory system) STOT RE 2; H373 Asp. Tox. 1; H304 Aquatic Chronic 3; H412	>= 0,25 - < 1
ethylbenzene	100-41-4 202-849-4 601-023-00-4 01-2119489370-35	Flam. Liq. 2; H225 Acute Tox. 4; H332 STOT RE 2; H373 (hearing organs) Asp. Tox. 1; H304 Aquatic Chronic 3;	>= 0,25 - < 1

		H412	
Chromium, aqua chloro hydroxy methacrylate complexes	111031-82-4 -		>= 0,1 - < 1
formaldehyde	50-00-0 200-001-8 605-001-00-5 01-2119488953-20	Acute Tox. 3; H301 Acute Tox. 3; H331 Acute Tox. 3; H311 Skin Corr. 1B; H314 Eye Dam. 1; H318 Skin Sens. 1; H317 Muta. 2; H341 Carc. 1B; H350 specific concentration limit Skin Corr. 1B; H314 >= 25 % Skin Irrit. 2; H315 5 - < 25 % Eye Irrit. 2; H319 5 - < 25 % STOT SE 3; H335 >= 5 %	< 0,1

For explanation of abbreviations see section 16.

SECTION 4: First aid measures

4.1 Description of first-aid measures

General advice : Move out of dangerous area.
Consult a physician.
Show this safety data sheet to the doctor in attendance.
Treat symptomatically.
Get medical attention if symptoms occur.

Protection of first-aiders : First Aid responders should pay attention to self-protection and use the recommended protective clothing
If potential for exposure exists refer to Section 8 for specific personal protective equipment.
Avoid inhalation, ingestion and contact with skin and eyes.
No action shall be taken involving any personal risk or without suitable training.
It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

If inhaled : If inhaled, remove to fresh air.
Get medical attention if symptoms occur.

In case of skin contact : If skin irritation persists, call a physician.
If on skin, rinse well with water.
If on clothes, remove clothes.

In case of eye contact : Immediately flush eye(s) with plenty of water.
Remove contact lenses.

Keep eye wide open while rinsing.
If eye irritation persists, consult a specialist.

If swallowed : Induce vomiting immediately and call a physician.
Keep respiratory tract clear.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.
Take victim immediately to hospital.

4.2 Most important symptoms and effects, both acute and delayed

Risks : Causes skin irritation.
May cause an allergic skin reaction.
Causes serious eye irritation.
Suspected of causing cancer.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment : Treat symptomatically.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media : Water spray
Alcohol-resistant foam
Carbon dioxide (CO2)
Dry chemical

Unsuitable extinguishing media : Exercise caution when using a high volume water jet as it may scatter and spread fire

5.2 Special hazards arising from the substance or mixture

Specific hazards during firefighting : Do not allow run-off from fire fighting to enter drains or water courses.

Hazardous combustion products : Carbon oxides
Oxides of phosphorus

5.3 Advice for firefighters

Special protective equipment for fire-fighters : Wear self-contained breathing apparatus for firefighting if necessary.

Specific extinguishing methods : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Further information : Collect contaminated fire extinguishing water separately. This must not be discharged into drains.
Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Use personal protective equipment.
Refer to protective measures listed in sections 7 and 8.

6.2 Environmental precautions

Environmental precautions : Prevent product from entering drains.
Prevent further leakage or spillage if safe to do so.
If the product contaminates rivers and lakes or drains inform respective authorities.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up : Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).
Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

For disposal considerations see section 13., See Section 1 for emergency contact information., For personal protection see section 8.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling : Repeated or prolonged skin contact may cause skin irritation and/or dermatitis and sensitization of susceptible persons.
Persons suffering from asthma, eczema or skin problems should avoid contact, including dermal contact, with this product.
Do not breathe vapors/dust.
Avoid exposure - obtain special instructions before use.
Avoid contact with skin and eyes.
For personal protection see section 8.
Smoking, eating and drinking should be prohibited in the application area.
Dispose of rinse water in accordance with local and national regulations.

Advice on protection against fire and explosion : Normal measures for preventive fire protection.

Hygiene measures : When using do not eat or drink. When using do not smoke.
Wash hands before breaks and at the end of workday.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Observe label precautions. Keep in properly labeled containers.

Advice on common storage : For incompatible materials please refer to Section 10 of this SDS.

Storage class (TRGS 510) : 10

Further information on storage stability : Stable under normal conditions.

Recommended storage temperature : 2 - 40 °C

7.3 Specific end use(s)

Specific use(s) : No data available

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
xylene	1330-20-7	MAK	50 ppm 220 mg/m3	DE DFG MAK
	Further information: Danger of absorption through the skin, Either there are no data for an assessment of damage to the embryo or foetus, including developmental neurotoxicity, or the currently available data are not sufficient for classification in one of the groups A - C			
		TWA	50 ppm 221 mg/m3	2000/39/EC
	Further information: Identifies the possibility of significant uptake through the skin, Indicative			
		STEL	100 ppm 442 mg/m3	2000/39/EC
	Further information: Identifies the possibility of significant uptake through the skin, Indicative			
		AGW	50 ppm 220 mg/m3	DE TRGS 900
	Further information: Skin absorption			
		TWA	50 ppm 221 mg/m3	2000/39/EC
	Further information: Identifies the possibility of significant uptake through the skin, Indicative			
		STEL	100 ppm 442 mg/m3	2000/39/EC
	Further information: Identifies the possibility of significant uptake through the skin, Indicative			
ethylbenzene	100-41-4	TWA	100 ppm 442 mg/m3	2000/39/EC
	Further information: Identifies the possibility of significant uptake through the skin, Indicative			
		STEL	200 ppm 884 mg/m3	2000/39/EC
	Further information: Identifies the possibility of significant uptake through the			

	skin, Indicative			
		AGW	20 ppm 88 mg/m3	DE TRGS 900
	Further information: Skin absorption, When there is compliance with the OEL and biological tolerance values, there is no risk of harming the unborn child			
		MAK	20 ppm 88 mg/m3	DE DFG MAK
	Further information: Danger of absorption through the skin, Substances that cause cancer in humans or animals or that are considered to be carcinogenic for humans and for which a MAK value can be derived., Damage to the embryo or foetus is unlikely when the MAK value or the BAT value is observed			
		TWA	100 ppm 442 mg/m3	2000/39/EC
	Further information: Identifies the possibility of significant uptake through the skin, Indicative			
		STEL	200 ppm 884 mg/m3	2000/39/EC
	Further information: Identifies the possibility of significant uptake through the skin, Indicative			
glycerol	56-81-5	AGW (Inhalable fraction)	200 mg/m3	DE TRGS 900
	Further information: When there is compliance with the OEL and biological tolerance values, there is no risk of harming the unborn child			
		MAK (inhalable fraction)	200 mg/m3	DE DFG MAK
	Further information: Damage to the embryo or foetus is unlikely when the MAK value or the BAT value is observed			
Chromium, aqua chloro hydroxy methacrylate complexes	111031-82-4			DE DFG MAK
	Further information: Danger of sensitization of the skin			
		TWA	2 mg/m3 (chromium)	2006/15/EC
	Further information: Indicative			
		TWA	2 mg/m3 (chromium)	2006/15/EC
	Further information: Indicative			
ethanol	64-17-5	MAK	200 ppm 380 mg/m3	DE DFG MAK
	Further information: Substances that cause cancer in humans or animals or that are considered to be carcinogenic for humans and for which a MAK value can be derived, Damage to the embryo or foetus is unlikely when the MAK value or the BAT value is observed, Germ cell mutagens or suspected substances (according to the definition of Category 3 A and 3B), the potency of which is considered to be so low that, provided the MAK and BAT values are observed, their contribution to genetic risk for man is considered to be very slight			
		AGW	200 ppm 380 mg/m3	DE TRGS 900
	Further information: When there is compliance with the OEL and biological tolerance values, there is no risk of harming the unborn child			
formaldehyde	50-00-0	AGW	0,3 ppm	DE TRGS

			0,37 mg/m3	900
	Further information: Carcinogenic substance Cat. 1A or 1B or carcinogenic activity or procedure according to § 2 (3) No. 4 of the Hazardous Substances Ordinance - in addition, § 10 GefStoffV must be observed, When there is compliance with the OEL and biological tolerance values, there is no risk of harming the unborn child, Substance sensitizing through the skin			
		STEL	0,6 ppm 0,74 mg/m3	2004/37/EC
	Further information: Dermal sensitisation, Carcinogens or mutagens			
		TWA	0,3 ppm 0,37 mg/m3	2004/37/EC
	Further information: Dermal sensitisation, Carcinogens or mutagens			
		MAK	0,3 ppm 0,37 mg/m3	DE DFG MAK
	Further information: Danger of sensitization of the skin, Substances that cause cancer in humans or animals or that are considered to be carcinogenic for humans and for which a MAK value can be derived., Damage to the embryo or foetus is unlikely when the MAK value or the BAT value is observed, Germ cell mutagens or suspected substances (according to the definition of Category 3 A and 3B), the potency of which is considered to be so low that, provided the MAK and BAT values are observed, their contribution to genetic risk for man is considered to be very slight			
		Mow	1 ppm 1,2 mg/m3	DE DFG MAK
	Further information: Danger of sensitization of the skin, Substances that cause cancer in humans or animals or that are considered to be carcinogenic for humans and for which a MAK value can be derived., Damage to the embryo or foetus is unlikely when the MAK value or the BAT value is observed, Germ cell mutagens or suspected substances (according to the definition of Category 3 A and 3B), the potency of which is considered to be so low that, provided the MAK and BAT values are observed, their contribution to genetic risk for man is considered to be very slight			
		STEL	0,6 ppm 0,74 mg/m3	2004/37/EC
	Further information: Dermal sensitisation, Carcinogens or mutagens			
		TWA	0,3 ppm 0,37 mg/m3	2004/37/EC
	Further information: Dermal sensitisation, Carcinogens or mutagens			
propan-2-ol	67-63-0	AGW	200 ppm 500 mg/m3	DE TRGS 900
	Further information: When there is compliance with the OEL and biological tolerance values, there is no risk of harming the unborn child			
		MAK	200 ppm 500 mg/m3	DE DFG MAK
	Further information: Damage to the embryo or foetus is unlikely when the MAK value or the BAT value is observed			
29H,31H-phthalocyaninato(2-)-N29,N30,N31,N32 copper	147-14-8	AGW (Inhalable fraction)	0,2 mg/m3	DE TRGS 900
		AGW (Alveolate fraction)	0,045 mg/m3	DE TRGS 900

Biological occupational exposure limits

Substance name	CAS-No.	Control parameters	Sampling time	Basis
xylene	1330-20-7	Methylhippuric acid (toluric acid) (all isomers): 1800 mg/g creatinine (Urine)	Immediately after exposition or after working hours	DE DFG BAT
	1330-20-7	methylhippuric acid (all isomers): 1800 mg/g creatinine (Urine)	Immediately after exposure or after working hours	TRGS 903
ethylbenzene	100-41-4	mandelic acid + phenylglyoxylic acid: 250 mg/g creatinine (Urine)	Immediately after exposure or after working hours	TRGS 903
	100-41-4	mandelic acid plus phenylglyoxylic acid: 250 mg/g creatinine (Urine)	Immediately after exposition or after working hours	DE DFG BAT
propan-2-ol	67-63-0	Acetone: 25 mg/l (Blood)	Immediately after exposure or after working hours	TRGS 903
	67-63-0	Acetone: 25 mg/l (Urine)	Immediately after exposure or after working hours	TRGS 903
	67-63-0	Acetone: 25 mg/l (Blood)	Immediately after exposition or after working hours	DE DFG BAT
	67-63-0	Acetone: 25 mg/l (Urine)	Immediately after exposition or after working hours	DE DFG BAT

Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006:

Substance name	End Use	Exposure routes	Potential health effects	Value
octamethylcyclotetrasiloxane	Workers	Inhalation	Long-term systemic effects	73 mg/m3
	Workers	Inhalation	Long-term local effects	14,6 mg/m3
	Consumers	Inhalation	Long-term systemic effects	13 mg/m3
	Consumers	Inhalation	Acute systemic effects	13 mg/m3
	Consumers	Inhalation	Long-term local effects	2,6 mg/m3
	Consumers	Inhalation	Acute local effects	13 mg/m3
	Consumers	Oral	Long-term systemic effects	3,7 mg/kg
	Consumers	Oral	Acute systemic effects	3,7 mg/kg
Reaction mass of 2,2'-	Workers	Dermal	Acute local effects	0,0083 mg/cm2

[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				
	Workers	Dermal	Long-term systemic effects	104,15 mg/kg
	Workers	Inhalation	Long-term systemic effects	29,39 mg/m3
	Consumers	Dermal	Long-term systemic effects	62,5 mg/kg bw/day
	Consumers	Inhalation	Long-term systemic effects	8,7 mg/m3
	Consumers	Oral	Long-term systemic effects	6,25 mg/kg bw/day
2-ethyl-2-[[(1-oxoallyl)oxy]methyl]-1,3-propanediyl diacrylate	Workers	Inhalation	Long-term systemic effects	17,1 mg/m3
	Workers	Dermal	Long-term systemic effects	404 mg/kg bw/day
formaldehyde	Workers	Inhalation	Long-term systemic effects	9 mg/m3
	Workers	Inhalation	Long-term local effects	0,375 mg/m3
	Workers	Inhalation	Acute local effects	0,75 mg/m3
	Workers	Dermal	Long-term systemic effects	240 mg/kg bw/day
	Workers	Dermal	Long-term local effects	0,037 mg/cm2
	Consumers	Inhalation	Long-term systemic effects	3,2 mg/m3
	Consumers	Inhalation	Long-term local effects	0,1 mg/m3
	Consumers	Dermal	Long-term systemic effects	102 mg/kg bw/day
	Consumers	Dermal	Long-term local effects	0,012 mg/cm2
	Consumers	Oral	Long-term systemic effects	4,1 mg/kg bw/day
ethanol	Consumers	Inhalation	Long-term systemic effects	950 mg/m3
	Consumers	Dermal	Short-term exposure, Local effects	950 mg/m3
	Consumers	Inhalation	Long-term systemic effects	114 mg/m3
	Consumers	Oral	Long-term systemic effects	87 mg/kg
	Consumers	Dermal	Long-term systemic	206 mg/kg

			effects	bw/day
	Workers	Inhalation	Short-term exposure, Local effects	1900 mg/m3
	Workers	Inhalation	Short-term exposure, Local effects	950 mg/m3
	Workers	Dermal	Long-term systemic effects	343 mg/kg bw/day
ethylbenzene	Workers	Inhalation	Long-term systemic effects	77 mg/m3
	Workers	Inhalation	Long-term local effects	293 mg/m3
	Workers	Dermal	Long-term systemic effects	180 mg/kg bw/day
	Consumers	Inhalation	Long-term systemic effects	15 mg/m3
	Consumers	Oral	Long-term systemic effects	1,6 mg/kg bw/day
xylene	Workers	Inhalation	Long-term systemic effects	221 mg/m3
	Workers	Inhalation	Acute systemic effects	442 mg/m3
	Workers	Inhalation	Long-term local effects	221 mg/m3
	Workers	Inhalation	Acute local effects	442 mg/m3
	Workers	Dermal	Long-term systemic effects	212 mg/kg bw/day
	Consumers	Inhalation	Long-term systemic effects	65,3 mg/m3
	Consumers	Inhalation	Acute systemic effects	260 mg/m3
	Consumers	Inhalation	Long-term local effects	65,3 mg/m3
	Consumers	Inhalation	Acute local effects	260 mg/m3
	Consumers	Dermal	Long-term systemic effects	125 mg/kg bw/day
	Consumers	Oral	Long-term systemic effects	12,5 mg/kg bw/day

Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006

Substance name	Environmental Compartment	Value
Siloxanes and silicones, di-Me, reaction products with silica	Fresh water sediment	> 100 mg/kg
	Remarks:Assessment Factors	
	Soil	23 mg/kg
	Remarks:Assessment Factors	
octamethylcyclotetrasiloxane	Fresh water	0,44 µg/l
	Remarks:Assessment Factors	
	Sea water	0,044 µg/l
	Remarks:Assessment Factors	
	Sewage treatment plant	10 mg/l
	Remarks:Assessment Factors	
	Fresh water sediment	0,59 mg/kg
	Remarks:Assessment Factors	
	Sea sediment	0,059 mg/kg

	Remarks:Assessment Factors	
	Soil	0,15 mg/kg
	Remarks:Equilibrium method	
	Secondary Poisoning	1,7 mg/kg
	Remarks:Assessment Factors	
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	Fresh water	0,003 mg/l
	Remarks:Assessment Factors	
	Sea water	0 mg/l
	Remarks:Assessment Factors	
	Intermittent use/release	0,0254 mg/l
	Remarks:Assessment Factors	
	Fresh water sediment	0,294 mg/kg dry weight (d.w.)
	Remarks:Equilibrium method	
	Sea sediment	0,0294 mg/kg dry weight (d.w.)
	Remarks:Equilibrium method	
	Soil	0,237 mg/kg dry weight (d.w.)
	Remarks:Equilibrium method	
	Sewage treatment plant	10 mg/l
	Remarks:Assessment Factors	
2-ethyl-2-[[(1-oxoallyl)oxy]methyl]-1,3-propanediyl diacrylate	Fresh water	0,87 µg/l
	Remarks:Assessment Factors	
	Freshwater - intermittent	8,7 µg/l
	Remarks:Assessment Factors	
	Sea water	0,087 µg/l
	Remarks:Assessment Factors	
	Sewage treatment plant	6,25 mg/l
	Remarks:Assessment Factors	
	Fresh water sediment	0,017 mg/kg dry weight (d.w.)
	Remarks:Equilibrium method	
	Sea sediment	0,002 mg/kg dry weight (d.w.)
	Remarks:Equilibrium method	
	Soil	0,003 mg/kg dry weight (d.w.)
	Remarks:Equilibrium method	
	Oral	10 mg/kg
ethanol	Fresh water	0,96 mg/l
	Sea water	0,79 mg/l
	Intermittent use/release	2,75 mg/l
	Sewage treatment plant	580 mg/l
	Fresh water sediment	3,6 mg/kg

	Soil	0,63 mg/kg dry weight (d.w.)
	Oral	0,72 mg/kg
	Sea sediment	2,9 mg/kg dry weight (d.w.)
ethylbenzene	Fresh water	0,1 mg/l
	Remarks:Assessment Factors	
	Freshwater - intermittent	0,1 mg/l
	Remarks:Assessment Factors	
	Sea water	0,01 mg/l
	Remarks:Assessment Factors	
	Sewage treatment plant	9,6 mg/l
	Remarks:Assessment Factors	
	Fresh water sediment	13,7 mg/kg dry weight (d.w.)
	Remarks:Equilibrium method	
	Sea sediment	1,37 mg/kg dry weight (d.w.)
	Remarks:Equilibrium method	
	Soil	2,68 mg/kg dry weight (d.w.)
	Remarks:Equilibrium method	
	Oral	0,02 mg/kg
xylene	Fresh water	0,044 mg/l
	Remarks:Assessment Factors	
	Freshwater - intermittent	0,01 mg/l
	Remarks:Assessment Factors	
	Sea water	0,004 mg/l
	Remarks:Assessment Factors	
	Sewage treatment plant	1,6 mg/l
	Remarks:Assessment Factors	
	Fresh water sediment	2,52 mg/kg dry weight (d.w.)
	Remarks:Equilibrium method	
	Sea sediment	0,252 mg/kg dry weight (d.w.)
	Remarks:Equilibrium method	
	Soil	0,852 mg/kg
	Remarks:Assessment Factors	

8.2 Exposure controls

Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection : Eye wash bottle with pure water
Tightly fitting safety goggles
Wear face-shield and protective suit for abnormal processing problems.

Hand protection
Material : butyl-rubber
Break through time : > 8 h

Material : Nitrile rubber
Break through time : 10 - 480 min

Material : Ethyl Vinyl Alcohol Laminate (EVAL)

Break through time	:	> 8 h
Remarks	:	Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough. Take note of the information given by the producer concerning permeability and break through times, and of special workplace conditions (mechanical strain, duration of contact). The selected protective gloves have to satisfy the specifications of Regulation (EU) 2016/425 and the standard EN 374 derived from it.
Skin and body protection	:	Impervious clothing Choose body protection according to the amount and concentration of the dangerous substance at the work place.
Respiratory protection	:	Use respiratory protection unless adequate local exhaust ventilation is provided or exposure assessment demonstrates that exposures are within recommended exposure guidelines Equipment should conform to EN 14387
Filter type	:	Combined particulates and organic vapor type (A-P)

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	:	liquid
Form	:	paste
Color	:	blue
Odor	:	slight
Odor Threshold	:	No data is available on the product itself.
Melting point/freezing point	:	No data is available on the product itself.
Boiling point	:	> 200 °C
Flammability	:	No data is available on the product itself.
Lower explosion limit / Lower flammability limit	:	No data is available on the product itself.
Upper explosion limit / Upper flammability limit	:	No data is available on the product itself.
Flash point	:	> 200 °C Method: Pensky-Martens closed cup
Autoignition temperature	:	No data is available on the product itself.
Decomposition temperature	:	No data is available on the product itself.
pH	:	substance/mixture is non-soluble (in water)

Viscosity	:	No data is available on the product itself.
Solubility(ies)		
Water solubility	:	slightly soluble (20 °C)
Solubility in other solvents	:	No data is available on the product itself.
Partition coefficient: n-octanol/water	:	No data is available on the product itself.
Vapor pressure	:	No data is available on the product itself.
Density	:	0,7 g/cm3 (25 °C)
Relative density	:	0,69 - 0,73
Relative vapor density	:	No data is available on the product itself.
Particle characteristics	:	No data is available on the product itself.

9.2 Other information

No data is available on the product itself.

SECTION 10: Stability and reactivity

10.1 Reactivity

No dangerous reaction known under conditions of normal use.

10.2 Chemical stability

Stable under normal conditions.

10.3 Possibility of hazardous reactions

Hazardous reactions	:	No hazards to be specially mentioned.

10.4 Conditions to avoid

Conditions to avoid	:	None known.

10.5 Incompatible materials

Materials to avoid	:	Strong acids Strong bases Strong oxidizing agents

10.6 Hazardous decomposition products

No hazardous decomposition products are known.

SECTION 11: Toxicological information

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

Acute toxicity

Not classified due to lack of data.

Components:

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:

Acute oral toxicity : LD50 (Rat, male and female): > 5 000 mg/kg
Method: OECD Test Guideline 401

Acute dermal toxicity : LD50 (Rat, male and female): > 2 000 mg/kg
Method: OECD Test Guideline 402
Assessment: The substance or mixture has no acute dermal toxicity

2-ethyl-2-[[(1-oxoallyl)oxy]methyl]-1,3-propanediyl diacrylate:

Acute oral toxicity : LD50 (Rat): > 5 000 mg/kg
Assessment: The substance or mixture has no acute oral toxicity

Acute inhalation toxicity : LC50 (Rat, male and female): > 0,55 mg/l
Exposure time: 6 h
Test atmosphere: vapor
Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : LD50 (Rabbit): 5 170 mg/kg
Assessment: The substance or mixture has no acute dermal toxicity

Siloxanes and Silicones, di-Me, 3-hydroxypropyl Me, ethoxylated:

Acute oral toxicity : LD50 (Rat): > 5 000 mg/kg
Method: estimated

Acute inhalation toxicity : LC50 (Rat, male and female): > 0,68 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : LD50 (Rabbit, male): > 5 000 mg/kg
Method: estimated

octamethylcyclotetrasiloxane:

Acute oral toxicity : LD50 (Rat, male): > 4 800 mg/kg
Method: OECD Test Guideline 401
Assessment: The substance or mixture has no acute oral toxicity

Remarks: No mortality observed at this dose.

Acute inhalation toxicity : LC50 (Rat, male and female): 36 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403
Symptoms: Breathing difficulties

Acute dermal toxicity : LD50 (Rat, male and female): > 2 400 mg/kg
Method: OECD Test Guideline 402
Assessment: The substance or mixture has no acute dermal toxicity
Remarks: No mortality observed at this dose.

xylene:

Acute oral toxicity : LD50 (Mouse, male and female): 3 523 - 4 000 mg/kg
Method: Directive 67/548/EEC, Annex V, B.1.
GLP: no
Assessment: The substance or mixture has no acute oral toxicity

Acute inhalation toxicity : LC50 (Rat, male and female): 27,1 mg/l
Exposure time: 4 h
Test atmosphere: vapor
Method: Other guidelines
Assessment: The component/mixture is moderately toxic after short term inhalation.

Acute dermal toxicity : LD50 (Rabbit, male): 12 126 mg/kg
Assessment: The component/mixture is moderately toxic after single contact with skin.

ethylbenzene:

Acute oral toxicity : LD50 (Rat): 3 500 - 5 460 mg/kg
Assessment: The substance or mixture has no acute oral toxicity

Acute inhalation toxicity : LC50 (Rat): 17,3 mg/l
Exposure time: 4 h
Test atmosphere: vapor
Assessment: The component/mixture is moderately toxic after short term inhalation.

Acute dermal toxicity : LD50 (Rabbit): 15 400 mg/kg
Assessment: The substance or mixture has no acute dermal toxicity

formaldehyde:

Acute oral toxicity : LD50 (Rat, male): 640 mg/kg
Method: OECD Test Guideline 401

Acute inhalation toxicity : LC50 (Rat): 463 ppm
Exposure time: 4 h

Test atmosphere: vapor
Method: OECD Test Guideline 403
GLP: yes
Assessment: The component/mixture is toxic after short term inhalation.

Acute dermal toxicity : LD50 (Rabbit): 270 mg/kg
Assessment: The component/mixture is toxic after single contact with skin.

Skin corrosion/irritation

Causes skin irritation.

Components:

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:

Species : Rabbit
Method : OECD Test Guideline 404
Result : Irritating to skin.

2-ethyl-2-[[(1-oxoallyl)oxy]methyl]-1,3-propanediyl diacrylate:

Species : Rabbit
Exposure time : 4 h
Method : OECD Test Guideline 404
Result : Skin irritation
GLP : yes

Siloxanes and Silicones, di-Me, 3-hydroxypropyl Me, ethoxylated:

Result : slight irritation

octamethylcyclotetrasiloxane:

Species : Rabbit
Exposure time : 24 h
Method : OECD Test Guideline 404
Result : No skin irritation

xylene:

Species : Rabbit
Exposure time : 4 h
Assessment : Irritating to skin.
Method : Regulation (EC) No. 440/2008, Annex, B.4
Result : Skin irritation

ethylbenzene:

Species : Rabbit
Assessment : No skin irritation
Result : Moderate skin irritation

formaldehyde:

Species	:	Rabbit
Assessment	:	Causes burns.
Method	:	OECD Test Guideline 404
Result	:	Corrosive after 3 minutes to 1 hour of exposure

Serious eye damage/eye irritation

Causes serious eye irritation.

Components:

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:

Species	:	Rabbit
Method	:	OECD Test Guideline 405
Result	:	No eye irritation

2-ethyl-2-[[(1-oxoallyl)oxy]methyl]-1,3-propanediyl diacrylate:

Species	:	Rabbit
Method	:	OECD Test Guideline 405
Result	:	Eye irritation

Siloxanes and Silicones, di-Me, 3-hydroxypropyl Me, ethoxylated:

Result	:	slight irritation

octamethylcyclotetrasiloxane:

Species	:	Rabbit
Method	:	OECD Test Guideline 405
Result	:	No eye irritation

xylene:

Species	:	Rabbit
Result	:	Eye irritation

ethylbenzene:

Species	:	Rabbit
Assessment	:	No eye irritation
Result	:	slight irritation

formaldehyde:

Assessment	:	Risk of serious damage to eyes.

Respiratory or skin sensitisation

Skin sensitisation

May cause an allergic skin reaction.

Respiratory sensitisation

Not classified due to lack of data.

Components:

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:

Test Type	:	Local lymph node assay (LLNA)
Exposure routes	:	Skin
Species	:	Mouse
Method	:	OECD Test Guideline 429
Result	:	The product is a skin sensitiser, sub-category 1A.

2-ethyl-2-[[(1-oxoallyl)oxy]methyl]-1,3-propanediyl diacrylate:

Result	:	Probability or evidence of high skin sensitisation rate in humans

Siloxanes and Silicones, di-Me, 3-hydroxypropyl Me, ethoxylated:

Species	:	Guinea pig
Assessment	:	Did not cause sensitisation on laboratory animals.
Result	:	Did not cause sensitisation on laboratory animals.

octamethylcyclotetrasiloxane:

Test Type	:	Maximisation Test
Exposure routes	:	Skin
Species	:	Guinea pig
Method	:	OECD Test Guideline 406
Result	:	Did not cause sensitisation on laboratory animals.

xylene:

Test Type	:	Local lymph node assay (LLNA)
Exposure routes	:	Skin
Species	:	Mouse
Assessment	:	Did not cause sensitisation on laboratory animals.
Method	:	OECD Test Guideline 429
Result	:	Did not cause sensitisation on laboratory animals.

formaldehyde:

Exposure routes	:	Skin
Species	:	Guinea pig
Assessment	:	Probability or evidence of low to moderate skin sensitisation rate in humans
Method	:	OECD Test Guideline 406
Result	:	Probability or evidence of low to moderate skin sensitisation rate in humans

Test Type	:	Local lymph node assay (LLNA)
Exposure routes	:	Respiratory Tract
Species	:	Mouse
Assessment	:	Did not cause sensitisation on laboratory animals.
Result	:	Did not cause sensitisation on laboratory animals.

Assessment : May cause sensitisation by skin contact.

Germ cell mutagenicity

Not classified due to lack of data.

Components:

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:

Genotoxicity in vitro : Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: positive

Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 473
Result: positive

Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 476
Result: positive

Genotoxicity in vivo : Cell type: Somatic
Application Route: Oral
Exposure time: 48 h
Dose: 2000 mg/kg
Method: OECD Test Guideline 474
Result: negative

Cell type: Somatic
Application Route: Oral
Dose: 2000 mg/kg
Method: OECD Test Guideline 486
Result: negative

2-ethyl-2-[[(1-oxoallyl)oxy]methyl]-1,3-propanediyl diacrylate:

Genotoxicity in vitro : Test Type: Chromosome aberration test in vitro
Test system: Human lymphocytes
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 473
Result: positive
GLP: yes

Genotoxicity in vivo : Test Type: Micronucleus test
Species: Mouse (male and female)
Cell type: Bone marrow
Application Route: Oral
Dose: 437.5, 875 and 1750 mg/kg bw
Method: OECD Test Guideline 474
Result: negative
GLP: yes

Test Type: comet assay
Species: Mouse (female)

Application Route: Intravenous
Dose: 5/10/20 mg/kg bw/day
Method: OECD Test Guideline 489
Result: negative

Siloxanes and Silicones, di-Me, 3-hydroxypropyl Me, ethoxylated:

Germ cell mutagenicity-Assessment : In vitro tests did not show mutagenic effects, Animal testing did not show any mutagenic effects.

octamethylcyclotetrasiloxane:

Genotoxicity in vitro : Test Type: gene mutation test
Test system: Salmonella typhimurium
Concentration: 0.0003 - 5.0 mg/plate
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative

Test Type: Chromosome aberration test in vitro
Test system: Chinese hamster ovary cells
Concentration: 0.0003 - 0.03 mg/ml
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 473
Result: negative

Test Type: In vitro mammalian cell gene mutation test
Test system: mouse lymphoma cells
Concentration: 0.0032 - 0.05 µl/ml
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 476
Result: negative

Genotoxicity in vivo : Test Type: In vivo micronucleus test
Species: Rat (male and female)
Cell type: Bone marrow
Application Route: Inhalation
Exposure time: 6 h/day for 5 days
Dose: 0, 720 ppm
Method: OECD Test Guideline 475
Result: negative

Test Type: dominant lethal test
Species: Rat (male and female)
Cell type: Bone marrow
Application Route: Oral
Exposure time: 5 days/week for 8 weeks
Dose: 100, 500, 1000 mg/kg bw/day
Method: OECD Test Guideline 478
Result: negative

Germ cell mutagenicity-Assessment : Weight of evidence does not support classification as a germ cell mutagen.

xylene:

Genotoxicity in vitro : Test Type: Chromosome aberration test in vitro
Test system: Chinese hamster ovary cells
Metabolic activation: with and without metabolic activation
Method: Regulation (EC) No. 440/2008, Annex, B.10
Result: negative

Test Type: sister chromatid exchange assay
Test system: Chinese hamster ovary cells
Metabolic activation: with and without metabolic activation
Method: Regulation (EC) No. 440/2008, Annex, B.19
Result: negative

Test Type: gene mutation test
Test system: mouse lymphoma cells
Metabolic activation: with and without metabolic activation
Method: Regulation (EC) No. 440/2008, Annex, B.17
Result: negative

Test Type: reverse mutation assay
Test system: Salmonella typhimurium
Metabolic activation: with and without metabolic activation
Method: Mutagenicity (Salmonella typhimurium - reverse mutation assay)
Result: negative

Genotoxicity in vivo : Test Type: Chromosome aberration test in vitro
Species: Mouse (male and female)
Application Route: Subcutaneous
Dose: 1 ml/kg
Method: OECD Test Guideline 478
Result: negative

Test Type: Chromosome aberration test in vitro
Species: Rat (male and female)
Application Route: Intraperitoneal injection
Dose: 1 ml/kg
Method: OECD Test Guideline 478
Result: negative

Test Type: Micronucleus test
Species: Mouse (male)
Application Route: Intraperitoneal injection
Dose: 106, 220, 320, 440 mg/kg
Method: OECD Test Guideline 474
Result: negative

ethylbenzene:

Genotoxicity in vitro : Test Type: gene mutation test
Test system: mouse lymphoma cells
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 476
Result: negative
GLP: no

Test Type: Chromosome aberration test in vitro
Test system: Chinese hamster ovary cells
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 473
Result: negative

Genotoxicity in vivo : Test Type: Micronucleus test
Species: Mouse (male)
Cell type: Bone marrow
Application Route: Oral
Dose: 0/187.5/375/750 mg/kf bw/d
Method: OECD Test Guideline 474
Result: negative
GLP: yes

Test Type: unscheduled DNA synthesis assay
Species: Mouse (male and female)
Cell type: Liver cells
Application Route: Inhalation
Dose: 375 - 1000 ppm
Method: OECD Test Guideline 486
Result: negative
GLP: yes

formaldehyde:

Genotoxicity in vitro : Test Type: unscheduled DNA synthesis assay
Result: positive

Test Type: unscheduled DNA synthesis assay
Result: positive

Test Type: gene mutation test
Test system: Chinese hamster lung cells
Concentration: 0, 3.75, 7.5, 15 µg/mL
Metabolic activation: without metabolic activation
Method: OECD Test Guideline 476
Result: positive

Test Type: reverse mutation assay
Test system: Salmonella typhimurium
Metabolic activation: without metabolic activation
Method: OECD Test Guideline 471
Result: positive

Test Type: Chromosome aberration test in vitro
Test system: Chinese hamster ovary cells
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 473
Result: positive

Genotoxicity in vivo : Cell type: Germ + somatic
Result: Positive results were obtained in some in vivo tests.

Test Type: in vivo assay

Species: Rat (male)
Application Route: inhalation (vapor)
Dose: 0.7/2/5.8/9.1 ppm
Result: negative

Test Type: in vivo assay
Species: Rat (male)
Application Route: inhalation (vapor)
Dose: 0.7/2/5.8/9.1 ppm
Result: negative

Test Type: in vivo assay
Species: Rat (male)
Application Route: inhalation (gas)
Dose: 0.7/2/5.8/9.1/15.2 ppm
Result: positive

Germ cell mutagenicity-Assessment	:	Positive result(s) from in vivo non-mammalian somatic cell mutagenicity tests, supported by positive results from in vitro mutagenicity assays.

Carcinogenicity

Suspected of causing cancer.

Components:

2-ethyl-2-[[(1-oxoallyl)oxy]methyl]-1,3-propanediyl diacrylate:

Species	:	Mouse, male and female
Exposure time	:	105 - 106 weeks
Dose	:	0/0.3/1/3 mg/kg
Frequency of Treatment	:	5 days/week
NOAEL	:	0,3 mg/kg body weight
Species	:	Rat, male and female
Exposure time	:	103 - 105 weeks
Dose	:	0, 0.3, 1.0, 3.0 mg/kg body weight
Frequency of Treatment	:	5 days/week
NOAEL	:	0,3 - 1 mg/kg body weight
Method	:	OECD Test Guideline 451
Carcinogenicity - Assessment	:	Suspected human carcinogens

octamethylcyclotetrasiloxane:

Species	:	Rat, male and female
Application Route	:	Inhalation
Exposure time	:	24 month(s)
Dose	:	10, 30, 150, 700 ppm
Frequency of Treatment	:	6 hours/day, 5 days/week
	:	150 ppm
Method	:	OECD Test Guideline 453
Result	:	positive
Symptoms	:	female reproductive effects, carcinogenic effects
Remarks	:	Causes tumors in rodents. Research has shown that the mechanism of carcinogenicity is not relevant to humans.

Carcinogenicity - Assessment	:	Weight of evidence does not support classification as a carcinogen

xylene:

Species	:	Mouse, male and female
Application Route	:	Oral
Exposure time	:	103 weeks
Dose	:	0, 500 or 1000 mg/kg
Frequency of Treatment	:	5 days/week
Method	:	Regulation (EC) No. 440/2008, Annex, B.32
Result	:	negative

Species	:	Rat, male and female
Application Route	:	Oral
Exposure time	:	103 weeks
Dose	:	0, 250 or 500 mg/kg
Frequency of Treatment	:	5 days/week
Method	:	Regulation (EC) No. 440/2008, Annex, B.32
Result	:	negative

ethylbenzene:

Species	:	Rat, male and female
Application Route	:	inhalation (vapor)
Exposure time	:	104 weeks
Activity duration	:	6 h
Dose	:	0.33/1.1/3.33 mg/l
Frequency of Treatment	:	5 days/week
NOAEL	:	1,1 mg/l
Method	:	OECD Test Guideline 453
GLP	:	yes

formaldehyde:

Species	:	Rat, male
Application Route	:	Inhalation
Exposure time	:	24 month(s)
Dose	:	6 ppm
Frequency of Treatment	:	6 hour
Result	:	positive

Carcinogenicity - Assessment	:	Sufficient evidence of carcinogenicity in inhalation studies with animals

Reproductive toxicity

Not classified due to lack of data.

Components:

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:

Effects on fertility	:	Test Type: Two-generation study Species: Rat, male and female

Application Route: Oral
Dose: 0, 50, 180, 540 or 750 mg/kg/
Duration of Single Treatment: 238 d
General Toxicity Parent: NOEL: 750
General Toxicity F1: NOEL: 750 mg/kg body weight
General Toxicity F2: NOAEL: 750 mg/kg body weight
Method: OECD Test Guideline 416
Result: No effects on fertility and early embryonic development were detected.
GLP: yes
Remarks: Information given is based on data obtained from similar substances.

2-ethyl-2-[[(1-oxoallyl)oxy]methyl]-1,3-propanediyl diacrylate:

Effects on fertility : Test Type: Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test
Species: Rat, male and female
Application Route: Oral
Dose: 0, 30, 100, 300 milligram per kilogram
General Toxicity Parent: NOAEL: 300 mg/kg body weight
Fertility: NOAEL: 300 mg/kg body weight
Method: OECD Test Guideline 422
Result: Animal testing did not show any effects on fertility.
GLP: yes

Effects on fetal development : Test Type: Pre-natal
Species: Rat, female
Application Route: Oral
Dose: 0/500 milligram per kilogram
Duration of Single Treatment: 10 d
Frequency of Treatment: 7 days/week
General Toxicity Maternal: NOAEL: 500 mg/kg body weight
Embryo-fetal toxicity.: NOAEL: 500 mg/kg body weight
Method: OECD Test Guideline 414
Result: No effects on fertility and early embryonic development were detected.
GLP: no

Test Type: Pre-natal
Species: Rabbit, female
Application Route: Oral
Dose: 10/30/100/130 milligram per kilogram
Duration of Single Treatment: 23 d
Frequency of Treatment: 7 days/week
General Toxicity Maternal: NOAEL: >= 130 mg/kg body weight
Embryo-fetal toxicity.: NOAEL: >= 130 mg/kg body weight
Method: OECD Test Guideline 414
Result: No effects on fertility and early embryonic development were detected.
GLP: yes

octamethylcyclotetrasiloxane:

Effects on fertility : Test Type: Two-generation study
Species: Rat, male and female

Application Route: Inhalation
Dose: 70, 300, 500, 700 ppm
Duration of Single Treatment: 6 h
Frequency of Treatment: 7 days/week
General Toxicity Parent: NOAEC: 300 ppm
General Toxicity F1: NOAEC: 300 ppm
Method: OECD Test Guideline 416
Result: positive

Effects on fetal development : Species: Rat, female
Application Route: Inhalation
Dose: 100, 300, 700 ppm
Duration of Single Treatment: 6 h
Frequency of Treatment: 7 days/week
General Toxicity Maternal: NOAEL: 300 ppm
Teratogenicity: NOAEL: > 700 ppm
Symptoms: Maternal effects.
Method: OECD Test Guideline 414
Result: No teratogenic effects, Some evidence of adverse effects on development, based on animal experiments.

Reproductive toxicity - Assessment : Some evidence of adverse effects on sexual function and fertility, based on animal experiments.
Did not show teratogenic effects in animal experiments.

xylene:

Effects on fertility : Species: Rat, male and female
Application Route: inhalation (vapor)
Dose: 0, 60, 250 or 500 ppm
Duration of Single Treatment: 6 h
Frequency of Treatment: 7 days/week
General Toxicity Parent: NOAEC: 500 ppm
General Toxicity F1: NOAEC: 500 ppm
Result: No effects on fertility and early embryonic development were detected.

ethylbenzene:

Effects on fertility : Test Type: Two-generation study
Species: Rat, male and female
Application Route: Inhalation
Dose: 0/25/100/500 ppm
Frequency of Treatment: 7 days/week
General Toxicity Parent: NOAEL: 500 ppm
General Toxicity F1: NOAEL: 500 ppm
General Toxicity F2: NOAEL: 500 ppm
Method: OECD Test Guideline 416
GLP: yes

Species: Rat, male and female
Application Route: Inhalation
Dose: 0/1007500/1000 ppm
General Toxicity Parent: NOAEC: 1 000 ppm
General Toxicity F1: NOEC: 100 ppm
Method: OECD Test Guideline 415

GLP: yes

Effects on fetal development : Test Type: Pre-natal
Species: Rat, females
Application Route: inhalation (vapor)
Duration of Single Treatment: 15 d
General Toxicity Maternal: NOAEC: 500 ppm
Developmental Toxicity: NOAEC: 2 000 ppm
Method: OECD Test Guideline 414

Test Type: Pre-natal
Species: Rabbit, females
Application Route: inhalation (vapor)
Duration of Single Treatment: 24 d
Frequency of Treatment: 7 days/week
General Toxicity Maternal: NOAEC: 1 000 ppm
Developmental Toxicity: NOAEC: 1 000 ppm
Method: OECD Test Guideline 414

formaldehyde:

Effects on fetal development : Test Type: Pre-natal
Species: Rat, female
Application Route: inhalation (gas)
Dose: 2/5/10 ppm
Duration of Single Treatment: 10 d
Frequency of Treatment: 7 days/week
General Toxicity Maternal: NOAEC: 5 ppm
Developmental Toxicity: NOAEC: 10 ppm
Method: OECD Test Guideline 414
Result: No teratogenic effects

Test Type: Pre-natal
Species: Dog, female
Application Route: Oral
Dose: 3.1 and 9.4 mg/kg bw/day
Duration of Single Treatment: 50 d
General Toxicity Maternal: LOAEL: > 9,4 mg/kg body weight
Developmental Toxicity: LOAEL: > 9,4 mg/kg body weight
Method: OECD Test Guideline 414

STOT-single exposure

Not classified due to lack of data.

Components:

xylene:

Exposure routes : Inhalation
Target Organs : Respiratory Tract
Assessment : May cause respiratory irritation., The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with respiratory tract irritation.

STOT-repeated exposure

Not classified due to lack of data.

Components:

xylene:

Exposure routes	:	Inhalation
Assessment	:	May cause damage to organs through prolonged or repeated exposure., The substance or mixture is classified as specific target organ toxicant, repeated exposure, category 2.

ethylbenzene:

Exposure routes	:	Inhalation
Target Organs	:	hearing organs
Assessment	:	May cause damage to organs through prolonged or repeated exposure.

Repeated dose toxicity

Components:

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:

Species	:	Rat, male and female
NOAEL	:	250 mg/kg
Application Route	:	Ingestion
Exposure time	:	13 Weeks
Number of exposures	:	7 d
Method	:	Subchronic toxicity

2-ethyl-2-[[(1-oxoallyl)oxy]methyl]-1,3-propanediyl diacrylate:

Species	:	Rat, male and female
NOAEL	:	2500 ppm
Application Route	:	oral (feed)
Exposure time	:	90 d
Number of exposures	:	7 days/week
Dose	:	300/900/2500 ppm
Method	:	OECD Test Guideline 408
GLP	:	yes

Species	:	Rat, male and female
NOAEL	:	300 mg/kg
Application Route	:	oral (gavage)
Exposure time	:	90 d
Number of exposures	:	7 days/week
Dose	:	0, 30. 100, 300 mg/kg bw/day
Method	:	OECD Test Guideline 422
GLP	:	yes

octamethylcyclotetrasiloxane:

Species	:	Rat, male and female
NOAEL	:	150 ppm
Application Route	:	Inhalation
Test atmosphere	:	vapor
Exposure time	:	24 Months

Number of exposures	:	6 hours/day, 5 days/week
Dose	:	10, 30, 150, 700 ppm
Control Group	:	no
Method	:	OECD Test Guideline 453
Remarks	:	Not classified due to data which are conclusive although insufficient for classification.

Species	:	Rabbit, male and female
NOAEL	:	>=1 ml/kg
Application Route	:	Dermal
Exposure time	:	3 Weeks
Number of exposures	:	6 hours/day, 5 days/week
Dose	:	0.1, 0.3, 1 ml/kg bw
Control Group	:	yes
Method	:	OECD Test Guideline 410
Remarks	:	No significant adverse effects were reported

xylene:

Species	:	Rat, male
NOEC	:	7817 mg/m3
Application Route	:	Inhalation
Test atmosphere	:	vapor
Exposure time	:	13 weeks 6 h
Number of exposures	:	5 days/week
Dose	:	0, 1954, 3908, 7817 mg/m3
Method	:	Chronic toxicity
Target Organs	:	hearing organs

Species	:	Rat, male and female
NOAEL	:	250 mg/kg
Application Route	:	Oral
Exposure time	:	103 weeks
Number of exposures	:	5 days/week
Dose	:	0/250/500 mg/kg bw/day

Species	:	Rat, male and female
NOAEL	:	150 mg/kg
LOAEL	:	150 mg/kg
Application Route	:	Oral
Exposure time	:	90 days 90 Days
Number of exposures	:	7 days/week
Dose	:	0, 150, 750 or 1500 mg/kg/day
Method	:	OECD Test Guideline 408
Target Organs	:	Kidney, Liver

ethylbenzene:

Species	:	Rat, male and female
NOAEL	:	75 mg/kg
Application Route	:	oral (gavage)
Exposure time	:	28 d
Number of exposures	:	7 days/week
Dose	:	75/250/750 mg/kg bw
Control Group	:	yes
Method	:	OECD Test Guideline 407

GLP	:	yes
Target Organs	:	Liver
Remarks	:	Subacute toxicity

Species	:	Rat, male and female
NOAEL	:	75 mg/kg
Application Route	:	oral (gavage)
Exposure time	:	90 d
Dose	:	75/250/750 mg/kg bw
Control Group	:	yes
Method	:	OECD Test Guideline 408
GLP	:	yes

Species	:	Mouse, male and female
NOAEL	:	3,4 mg/l
Application Route	:	Inhalation
Exposure time	:	28 d
Dose	:	0,4/1,7/3,4 mg/L
Control Group	:	yes
Method	:	OECD Test Guideline 412
GLP	:	yes

Species	:	Rat, male and female
NOAEL	:	1084
NOAEL	:	mg/m3
Application Route	:	inhalation (vapor)
Exposure time	:	104 week
Dose	:	325/1084/3251 mg/m3
Control Group	:	yes
Method	:	OECD Test Guideline 453
GLP	:	yes

Species	:	Rat, male and female
NOAEL	:	4,74 mg/l
Application Route	:	Inhalation
Exposure time	:	13 week
Dose	:	0,47/1,18/2,37/3,55/4,74 mg/L
Control Group	:	yes
Method	:	OECD Test Guideline 413
GLP	:	yes
Target Organs	:	Liver

Species	:	Mouse, male and female
NOAEL	:	3251
NOAEL	:	mg/m3
Application Route	:	Inhalation
Exposure time	:	104 week
Dose	:	325/1084/3251 mg/m3
Control Group	:	yes
Method	:	OECD Test Guideline 453
GLP	:	yes

Species	:	Rabbit, male and female
NOAEL	:	6,8 mg/l
Application Route	:	Inhalation

Exposure time	:	28 d
Dose	:	1,7/3,4/6,8 mg/L
Control Group	:	yes
Method	:	OECD Test Guideline 412
GLP	:	yes

formaldehyde:

Species	:	Rat, male and female
NOAEL	:	82 mg/kg
Application Route	:	oral (drinking water)
Exposure time	:	103 Weeks
Number of exposures	:	7 days/week
Dose	:	5/25/125 mg/kg bw/day
Method	:	OECD Test Guideline 453
Target Organs	:	Gastrointestinal tract, Stomach

Aspiration hazard

Not classified due to lack of data.

Components:

xylene:

May be fatal if swallowed and enters airways.

ethylbenzene:

May be fatal if swallowed and enters airways.

11.2 Information on other hazards

Endocrine disrupting properties

Not classified due to lack of data.

Components:

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:

Assessment : Does not have endocrine disrupting properties.

2-ethyl-2-[[(1-oxoallyl)oxy]methyl]-1,3-propanediyl diacrylate:

Assessment : Does not have endocrine disrupting properties.

Siloxanes and Silicones, di-Me, 3-hydroxypropyl Me, ethoxylated:

Assessment : Does not have endocrine disrupting properties.

octamethylcyclotetrasiloxane:

Assessment : Does not have endocrine disrupting properties.

xylene:

Assessment : Does not have endocrine disrupting properties.

ethylbenzene:

Assessment : Does not have endocrine disrupting properties.

Chromium, aqua chloro hydroxy methacrylate complexes:

Assessment : Does not have endocrine disrupting properties.

formaldehyde:

Assessment : Does not have endocrine disrupting properties.

Experience with human exposure

No data available

Toxicology, Metabolism, Distribution

No data available

Neurological effects

No data available

Further information

No data available

SECTION 12: Ecological information

12.1 Toxicity

Components:

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:

Toxicity to fish : LC50 (Fish): 2,54 mg/l
Exposure time: 96 h
Test substance: Fresh water
Method: Calculation method

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 2,55 mg/l
Exposure time: 48 h
Method: Calculation method

Toxicity to algae/aquatic plants : EC50 (Selenastrum capricornutum (green algae)): > 1,8 mg/l
Exposure time: 72 h
Test Type: static test
Analytical monitoring: yes
Test substance: Fresh water
Method: OECD Test Guideline 201
GLP: no

Toxicity to microorganisms : IC50 (activated sludge): > 100 mg/l
Exposure time: 3 h
Test Type: static test
Analytical monitoring: no
Test substance: Fresh water
GLP: no

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC: 0,3 mg/l Exposure time: 21 d Species: Daphnia magna (Water flea) Test Type: semi-static test Analytical monitoring: no Test substance: Fresh water Method: OECD Test Guideline 211 GLP: yes Remarks: Information given is based on data obtained from similar substances.

2-ethyl-2-[[(1-oxoallyl)oxy]methyl]-1,3-propanediyl diacrylate:

Toxicity to fish	:	LC50 (Danio rerio (zebra fish)): 0,87 mg/l End point: mortality Exposure time: 96 h Test Type: semi-static test Analytical monitoring: yes Test substance: Fresh water Method: OECD Test Guideline 203 GLP: yes
Toxicity to daphnia and other aquatic invertebrates	:	LC50 (Daphnia magna (Water flea)): 19,9 mg/l End point: Immobilization Exposure time: 48 h Test Type: static test Analytical monitoring: no Test substance: Fresh water Method: Other guidelines
Toxicity to algae/aquatic plants	:	ErC50 (Desmodesmus subspicatus (green algae)): 18,8 mg/l Exposure time: 96 h Test Type: static test Analytical monitoring: no Test substance: Fresh water Method: Directive 67/548/EEC, Annex V, C.3. GLP: yes ErC10 (Desmodesmus subspicatus (green algae)): 1,9 mg/l Exposure time: 96 h Test Type: static test Analytical monitoring: no Test substance: Fresh water Method: Directive 67/548/EEC, Annex V, C.3. GLP: yes
M-Factor (Acute aquatic toxicity)	:	1
Toxicity to microorganisms	:	EC20 (activated sludge): 625 mg/l Exposure time: 30 min Test Type: static test Test substance: Fresh water Method: ISO 8192

M-Factor (Chronic aquatic toxicity) : 1

Ecotoxicology Assessment

Acute aquatic toxicity : Very toxic to aquatic life.

Chronic aquatic toxicity : Very toxic to aquatic life with long lasting effects.

Siloxanes and Silicones, di-Me, 3-hydroxypropyl Me, ethoxylated:

Toxicity to fish : EC50 (Fish): 10 - 100 mg/l
Remarks: Based on data from similar materials

LC50 (Cyprinodon variegatus (sheepshead minnow)): > 1 080 mg/l
Exposure time: 96 h
Remarks: Based on data from similar materials

LC50 (Oncorhynchus mykiss (rainbow trout)): 892 mg/l
Exposure time: 96 h
Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 1 040 mg/l
Exposure time: 48 h
Test Type: static test
Remarks: Based on data from similar materials

LC50 (Mysidopsis bahia (opossum shrimp)): 11 mg/l
Exposure time: 96 h
Test Type: static test
Remarks: Based on data from similar materials

Toxicity to algae/aquatic plants : NOECr (Skeletonema costatum (marine diatom)): 3 mg/l
Exposure time: 72 h
Test Type: static test
Remarks: Based on data from similar materials

ErC50 (Skeletonema costatum (marine diatom)): 14 mg/l
Exposure time: 72 h
Test Type: static test
Remarks: Based on data from similar materials

ErC50 (Lemna gibba G3 (gibbous duckweed)): > 1 020 mg/l
Exposure time: 7 d
Test Type: static test
Remarks: Based on data from similar materials

Toxicity to microorganisms : EC50 (activated sludge): 115 mg/l
Exposure time: 3 h
Remarks: Based on data from similar materials

octamethylcyclotetrasiloxane:

Toxicity to fish : NOEC (Oncorhynchus mykiss (rainbow trout)): >= 22 µg/l
End point: mortality
Exposure time: 96 h

Test Type: flow-through test
Analytical monitoring: yes
Test substance: Fresh water
Method: Fish Acute Toxicity Test
Remarks: No toxicity at the limit of solubility.

Toxicity to daphnia and other aquatic invertebrates : NOEC (Daphnia magna (Water flea)): >= 15 µg/l
End point: Immobilization
Exposure time: 48 h
Test Type: flow-through test
Analytical monitoring: yes
Test substance: Fresh water
Method: Aquatic Invertebrate Acute Toxicity Test, Freshwater Daphnids
Remarks: No toxicity at the limit of solubility.

Toxicity to algae/aquatic plants : NOECr : < 0,022 mg/l
Exposure time: 96 h

Toxicity to fish (Chronic toxicity) : NOEC: 0,0044 mg/l
Exposure time: 14 d
Species: Fish

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 0,0079 mg/l
Exposure time: 21 d
Species: Daphnia

M-Factor (Chronic aquatic toxicity) : 10

Sediment toxicity : NOEC: 13 mg/kg sediment dw
Analytical monitoring: yes
Solvent: yes
Duration: 28 d
Test Type: static test
Water: Fresh water
Sediment: Natural
Exposure duration: 28 d
Nominal / Measured: Measured

xylene:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 2,6 mg/l
End point: mortality
Exposure time: 96 h
Test substance: Fresh water
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : NOEC (Ceriodaphnia dubia (Water flea)): 1 mg/l
End point: Immobilization
Exposure time: 24 h
Test Type: static test
Test substance: Fresh water
Method: Other guidelines
Remarks: Information given is based on data obtained from similar substances.

Toxicity to algae/aquatic plants	:	ErC50 (Pseudokirchneriella subcapitata (green algae)): 4,7 mg/l Exposure time: 72 h Test Type: static test Analytical monitoring: yes Test substance: Fresh water Method: OECD Test Guideline 201 NOEC (Pseudokirchneriella subcapitata (green algae)): 0,44 mg/l Exposure time: 72 h Test Type: static test Analytical monitoring: yes Test substance: Fresh water Method: OECD Test Guideline 201 GLP: yes
Toxicity to microorganisms	:	NOEC (activated sludge): 16 mg/l Exposure time: 28 d Test Type: static test Analytical monitoring: no Method: Other guidelines GLP: yes IC50 (Bacteria): 96 mg/l Exposure time: 24 h
Toxicity to fish (Chronic toxicity)	:	NOEC: 0,714 mg/l Exposure time: 56 d Species: Oncorhynchus mykiss (rainbow trout) Test Type: flow-through test Test substance: Fresh water
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC: 0,96 mg/l Exposure time: 7 d Species: Ceriodaphnia dubia (Water flea) Analytical monitoring: yes Test substance: Fresh water GLP: no Remarks: Information given is based on data obtained from similar substances.

Ecotoxicology Assessment

Chronic aquatic toxicity	:	Harmful to aquatic life with long lasting effects.

ethylbenzene:

Toxicity to fish	:	LC50 (Oncorhynchus mykiss (rainbow trout)): 4,2 mg/l End point: mortality Exposure time: 96 h Test Type: semi-static test Analytical monitoring: yes Test substance: Fresh water Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 1,8 - 2,4 mg/l End point: Immobilization Exposure time: 48 h Test Type: static test Analytical monitoring: yes Test substance: Sea water Method: Other guidelines GLP: yes
Toxicity to algae/aquatic plants	:	EC50 (Pseudokirchneriella subcapitata (green algae)): 5,4 mg/l Exposure time: 72 h Test Type: static test Test substance: Fresh water GLP: yes
Toxicity to microorganisms	:	EC50 (Bacteria): 96 mg/l Exposure time: 24 h
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC: 0,96 mg/l Exposure time: 7 d Species: Ceriodaphnia dubia (Water flea) Test Type: semi-static test Analytical monitoring: yes Test substance: Fresh water GLP: no

Ecotoxicology Assessment

Acute aquatic toxicity	:	This product has no known ecotoxicological effects.
Chronic aquatic toxicity	:	Harmful to aquatic life with long lasting effects.

formaldehyde:

Toxicity to fish	:	LC50 (Pimephales promelas (fathead minnow)): 24,1 mg/l End point: mortality Exposure time: 96 h Test Type: static test Test substance: Fresh water Method: OECD Test Guideline 203
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia pulex (Water flea)): 5,8 mg/l End point: Immobilization Exposure time: 48 h Test Type: static test Test substance: Fresh water Method: OECD Test Guideline 202
Toxicity to algae/aquatic plants	:	ErC50 (Desmodesmus subspicatus (green algae)): 4,89 mg/l Exposure time: 72 h Test Type: static test Test substance: Fresh water Method: OECD Test Guideline 201

EC50 (Desmodesmus subspicatus (green algae)): 3,48 mg/l
Exposure time: 72 h
Test Type: static test
Test substance: Fresh water
Method: OECD Test Guideline 201

Toxicity to microorganisms : EC50 (Bacteria): 20,4 mg/l
Exposure time: 120 h
Test Type: static test
Test substance: Fresh water
Method: OECD Test Guideline 209

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 1,04 mg/l
Exposure time: 21 d
Species: Daphnia magna (Water flea)
Test substance: Fresh water
Method: OECD Test Guideline 211

12.2 Persistence and degradability

Components:

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:

Biodegradability : Test Type: aerobic
Inoculum: activated sludge
Concentration: 3 mg/l
Result: Not biodegradable
Biodegradation: ca. 0 %
Exposure time: 28 d
Method: Directive 67/548/EEC Annex V, C.4.E.

2-ethyl-2-[[(1-oxoallyl)oxy]methyl]-1,3-propanediyl diacrylate:

Biodegradability : Test Type: aerobic
Inoculum: activated sludge, non-adapted
Concentration: 33 mg/l
Result: Readily biodegradable.
Biodegradation: 82 - 90 %
Exposure time: 28 d
Method: OECD Test Guideline 301B
Test substance: Fresh water
GLP: yes

Siloxanes and Silicones, di-Me, 3-hydroxypropyl Me, ethoxylated:

Biodegradability : Result: Not readily biodegradable.
Biodegradation: 15,6 %
Exposure time: 28 d
Method: OECD Test Guideline 301B
Remarks: Based on data from similar materials

octamethylcyclotetrasiloxane:

Biodegradability : Test Type: aerobic

Inoculum: activated sludge
Concentration: 10 mg/l
Result: Not readily biodegradable.
Biodegradation: 3,7 %
Exposure time: 29 d
Method: OECD Test Guideline 310

Stability in water : Degradation half life (DT50): 3,9 d (25 °C)
pH: 7
Method: OECD Test Guideline 111

Photodegradation : Test Type: Air
Degradation (indirect photolysis): 50 % Degradation half life: 15,8 d

xylene:

Biodegradability : Test Type: aerobic
Inoculum: Sewage (STP effluent)
Result: Readily biodegradable.
Biodegradation: > 90 %
Exposure time: 28 d
Method: OECD Test Guideline 301F
Test substance: Fresh water
GLP: yes

ethylbenzene:

Biodegradability : Test Type: aerobic
Inoculum: activated sludge
Concentration: 22 mg/l
Result: Readily biodegradable.
Biodegradation: 70 - 80 %
Exposure time: 28 d
Method: ISO Method, other
Test substance: Fresh water
GLP: yes

formaldehyde:

Biodegradability : Test Type: anaerobic
Inoculum: activated sludge
Concentration: 1 360 mg/l
Result: Readily biodegradable.
Biodegradation: 100 %
Exposure time: 4 d
Test substance: Fresh water

Test Type: aerobic
Inoculum: Sewage (STP effluent)
Result: Readily biodegradable.
Biodegradation: 99 %
Related to: Dissolved organic carbon (DOC)
Exposure time: 28 d
Method: OECD Test Guideline 303A
Test substance: Fresh water

Biochemical Oxygen Demand (BOD)	:	0,33 - 1,07 mg/l Incubation time: 5 d
Chemical Oxygen Demand (COD)	:	1.07 mgO2/g

12.3 Bioaccumulative potential

Components:

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:

Bioaccumulation	:	Species: Fish Bioconcentration factor (BCF): 150 Remarks: Does not bioaccumulate.
Partition coefficient: n-octanol/water	:	log Pow: 2,7 - 3,6 Method: OECD Test Guideline 117 GLP: yes

2-ethyl-2-[[(1-oxoallyl)oxy]methyl]-1,3-propanediyl diacrylate:

Partition coefficient: n-octanol/water	:	log Pow: 4,35 (20 °C) Method: Calculation method

octamethylcyclotetrasiloxane:

Bioaccumulation	:	Species: Pimephales promelas (fathead minnow) Exposure time: 28 d Temperature: 20 °C Concentration: 0,0005 mg/l Bioconcentration factor (BCF): 12 400 Test substance: Fresh water Method: flow-through test Species: Pimephales promelas (fathead minnow) Exposure time: 28 d Temperature: 20 °C Concentration: 0,0005 mg/l Bioconcentration factor (BCF): 13 400 Test substance: Fresh water Method: flow-through test
Partition coefficient: n-octanol/water	:	log Pow: 6,488 (25,1 °C) Method: OECD Test Guideline 123

xylene:

Bioaccumulation	:	Species: Fish Exposure time: 56 d Bioconcentration factor (BCF): 25,9 Test substance: Fresh water Remarks: Bioaccumulation is unlikely.
Partition coefficient: n-	:	log Pow: 3,16 (20 °C)

octanol/water		pH: 7 Method: Calculation method

ethylbenzene:

Bioaccumulation	:	Species: Other Exposure time: 42 d Bioconcentration factor (BCF): 1 Test substance: Sea water
Partition coefficient: n-octanol/water	:	log Pow: 3,6 (20 °C) Method: Partition coefficient GLP: yes

formaldehyde:

Bioaccumulation	:	Species: Fish Bioconcentration factor (BCF): < 1 Remarks: Does not bioaccumulate.
Partition coefficient: n-octanol/water	:	log Pow: 0,35 (25 °C)

12.4 Mobility in soil

Components:

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:

Distribution among environmental compartments	:	Koc: 4460 Method: OECD Test Guideline 121

2-ethyl-2-[[(1-oxoallyl)oxy]methyl]-1,3-propanediyl diacrylate:

Distribution among environmental compartments	:	OECD Test Guideline 121 log Koc: 2,2 Method: OECD Test Guideline 121

xylene:

Distribution among environmental compartments	:	Medium: Soil Koc: ca. 537, log Koc: ca. 2,73 Method: OECD Test Guideline 121

formaldehyde:

Distribution among environmental compartments	:	Koc: 15,9, log Koc: 1,202 Method: Calculation method

12.5 Results of PBT and vPvB assessment

Components:

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:

Assessment	:	Not persistent, bioaccumulative, and toxic (PBT).

This substance is not considered to be very persistent and very bioaccumulating (vPvB).

2-ethyl-2-[[(1-oxoallyl)oxy]methyl]-1,3-propanediyl diacrylate:

Assessment : Not persistent, bioaccumulative, and toxic (PBT).
This substance is not considered to be very persistent and very bioaccumulating (vPvB).

Siloxanes and Silicones, di-Me, 3-hydroxypropyl Me, ethoxylated:

Assessment : Not persistent, bioaccumulative, and toxic (PBT).
This substance is not considered to be very persistent and very bioaccumulating (vPvB).

octamethylcyclotetrasiloxane:

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

xylene:

Assessment : Not persistent, bioaccumulative, and toxic (PBT).
This substance is not considered to be very persistent and very bioaccumulating (vPvB).

ethylbenzene:

Assessment : Not persistent, bioaccumulative, and toxic (PBT).
This substance is not considered to be very persistent and very bioaccumulating (vPvB).

Chromium, aqua chloro hydroxy methacrylate complexes:

Assessment : Not persistent, bioaccumulative, and toxic (PBT).
This substance is not considered to be very persistent and very bioaccumulating (vPvB).

formaldehyde:

Assessment : Not persistent, bioaccumulative, and toxic (PBT).
This substance is not considered to be very persistent and very bioaccumulating (vPvB).

12.6 Endocrine disrupting properties

Components:

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:

Assessment : Does not have endocrine disrupting properties.

2-ethyl-2-[[(1-oxoallyl)oxy]methyl]-1,3-propanediyl diacrylate:

Assessment : Does not have endocrine disrupting properties.

Siloxanes and Silicones, di-Me, 3-hydroxypropyl Me, ethoxylated:
Assessment : Does not have endocrine disrupting properties.

octamethylcyclotetrasiloxane:
Assessment : Does not have endocrine disrupting properties.

xylene:
Assessment : Does not have endocrine disrupting properties.

ethylbenzene:
Assessment : Does not have endocrine disrupting properties.

Chromium, aqua chloro hydroxy methacrylate complexes:
Assessment : Does not have endocrine disrupting properties.

formaldehyde:
Assessment : Does not have endocrine disrupting properties.

12.7 Other adverse effects

Product:

Additional ecological information : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Toxic to aquatic life with long lasting effects.

Components:

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:
Assessment : Not persistent, mobile, and toxic (PMT).
Not very persistent and very mobile (vPvM).

2-ethyl-2-[[(1-oxoallyl)oxy]methyl]-1,3-propanediyl diacrylate:
Assessment : Not persistent, mobile, and toxic (PMT).
Not very persistent and very mobile (vPvM).

Siloxanes and Silicones, di-Me, 3-hydroxypropyl Me, ethoxylated:
Assessment : Not persistent, mobile, and toxic (PMT).
Not very persistent and very mobile (vPvM).

octamethylcyclotetrasiloxane:
Assessment : Not persistent, mobile, and toxic (PMT).
Not very persistent and very mobile (vPvM).

xylene:
Assessment : Not persistent, mobile, and toxic (PMT).

Not very persistent and very mobile (vPvM).

ethylbenzene:

Assessment : Not persistent, mobile, and toxic (PMT).
Not very persistent and very mobile (vPvM).

Chromium, aqua chloro hydroxy methacrylate complexes:

Assessment : Not persistent, mobile, and toxic (PMT).
Not very persistent and very mobile (vPvM).

formaldehyde:

Assessment : Not persistent, mobile, and toxic (PMT).
Not very persistent and very mobile (vPvM).

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product : Dispose of contents and container in accordance with all local, regional, national and international regulations.

Do not contaminate ponds, waterways or ditches with chemical or used container.
Do not dispose of waste into sewer.

Contaminated packaging : Empty remaining contents.
Dispose of as unused product.
Do not re-use empty containers.

SECTION 14: Transport information

14.1 UN number or ID number

ADN : UN 3082

ADR : UN 3082

RID : UN 3082

IMDG : UN 3082

IATA : UN 3082

14.2 UN proper shipping name

ADN : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(TRIMETHYLOLPROPANE TRIACRYLATE, BISPHENOL F EPOXY RESIN)

ADR : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(TRIMETHYLOLPROPANE TRIACRYLATE, BISPHENOL F EPOXY RESIN)

RID	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (TRIMETHYLOLPROPANE TRIACRYLATE, BISPHENOL F EPOXY RESIN)
IMDG	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (TRIMETHYLOLPROPANE TRIACRYLATE, BISPHENOL F EPOXY RESIN)
IATA	:	Environmentally hazardous substance, liquid, n.o.s. (TRIMETHYLOLPROPANE TRIACRYLATE, BISPHENOL F EPOXY RESIN)

14.3 Transport hazard class(es)

		Class	Subsidiary risks
ADN	:	9	
ADR	:	9	
RID	:	9	
IMDG	:	9	
IATA	:	9	

14.4 Packing group

ADN

Packing group	:	III
Classification Code	:	M6
Hazard Identification Number	:	90
Labels	:	9

ADR

Packing group	:	III
Classification Code	:	M6
Hazard Identification Number	:	90
Labels	:	9
Tunnel restriction code	:	(-)

RID

Packing group	:	III
Classification Code	:	M6
Hazard Identification Number	:	90
Labels	:	9

IMDG

Packing group	:	III
Labels	:	9
EmS Code	:	F-A, S-F

IATA (Cargo)

Packing instruction (cargo aircraft)	:	964
Packing instruction (LQ)	:	Y964
Packing group	:	III
Labels	:	Miscellaneous

IATA (Passenger)

Packing instruction (passenger aircraft)	:	964
Packing instruction (LQ)	:	Y964
Packing group	:	III
Labels	:	Miscellaneous

14.5 Environmental hazards

ADN
Environmentally hazardous : yes

ADR
Environmentally hazardous : yes

RID
Environmentally hazardous : yes

IMDG
Marine pollutant : yes

IATA (Passenger)
Environmentally hazardous : yes

IATA (Cargo)
Environmentally hazardous : yes

14.6 Special precautions for user

Not applicable

14.7 Maritime transport in bulk according to IMO instruments

Not applicable for product as supplied.

SECTION 15: Regulatory information

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

REACH - List of substances subject to authorisation (Annex XIV)	:	Not applicable
REACH - Candidate List of Substances of Very High Concern for Authorization (Article 59).	:	This product does not contain substances of very high concern.
REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles (Annex XVII)	:	Conditions of restriction for the following entries must be considered:: Number on list 3 Number on list 40 This substance/mixture shall not be used in aerosol dispensers intended for supply to the general public for entertainment and decorative purposes. Number on list 72: formaldehyde Number on list 75 If you intend to use this product as tattoo ink, please contact your

vendor.

Number on list 77: 1,3,5-Triazine-2,4,6-triamine, polymer with formaldehyde, formaldehyde

Number on list 78:
Amino-resins, phenolic resins and polyurethanes

synthetic polymer microparticles (SPM) content: 1 - 10 %
The synthetic polymer microparticles supplied is subject to conditions laid down by entry 78 of Annex XVII to Regulation (EC) No 1907/2006 of the European Parliament and of the Council

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.	E2	ENVIRONMENTAL HAZARDS

Water hazard class (Germany)	:	WGK 3 highly hazardous to water Classification according to AwSV, Annex 1 (5.2)

Other regulations:

Take note of Law on the protection of mothers at work, in education and in studies (Maternity Protection Act - MuSchG).
Take note of Directive 94/33/EC on the protection of young people at work or stricter national regulations, where applicable.

15.2 Chemical Safety Assessment

Chemical Safety Assessments for all substances in this product are either Complete or Not applicable.

SECTION 16: Other information

Full text of H-Statements

H225	:	Highly flammable liquid and vapor.
H226	:	Flammable liquid and vapor.
H301	:	Toxic if swallowed.
H304	:	May be fatal if swallowed and enters airways.
H311	:	Toxic in contact with skin.
H312	:	Harmful in contact with skin.
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.

H331	:	Toxic if inhaled.
H332	:	Harmful if inhaled.
H335	:	May cause respiratory irritation.
H341	:	Suspected of causing genetic defects.
H350	:	May cause cancer.
H351	:	Suspected of causing cancer.
H361f	:	Suspected of damaging fertility.
H373	:	May cause damage to organs through prolonged or repeated exposure.
H373	:	May cause damage to organs through prolonged or repeated exposure if inhaled.
H400	:	Very toxic to aquatic life.
H410	:	Very toxic to aquatic life with long lasting effects.
H411	:	Toxic to aquatic life with long lasting effects.
H412	:	Harmful to aquatic life with long lasting effects.

Full text of other abbreviations

Acute Tox.	:	Acute toxicity
Aquatic Acute	:	Short-term (acute) aquatic hazard
Aquatic Chronic	:	Long-term (chronic) aquatic hazard
Asp. Tox.	:	Aspiration hazard
Carc.	:	Carcinogenicity
Eye Dam.	:	Serious eye damage
Eye Irrit.	:	Eye irritation
Flam. Liq.	:	Flammable liquids
Muta.	:	Germ cell mutagenicity
Repr.	:	Reproductive toxicity
Skin Corr.	:	Skin corrosion
Skin Irrit.	:	Skin irritation
Skin Sens.	:	Skin sensitisation
STOT RE	:	Specific target organ toxicity - repeated exposure
STOT SE	:	Specific target organ toxicity - single exposure
2000/39/EC	:	Europe. Commission Directive 2000/39/EC establishing a first list of indicative occupational exposure limit values
2004/37/EC	:	Europe. Directive 2004/37/EC on the protection of workers from the risks related to exposure to carcinogens, mutagens or reprotoxic substances at work - Annex III
2006/15/EC	:	Europe. Indicative occupational exposure limit values
DE DFG BAT	:	Germany. MAK BAT Annex XIII
DE DFG MAK	:	Germany. MAK BAT Annex IIa
DE TRGS 900	:	Germany. TRGS 900 - Occupational exposure limit values.
TRGS 903	:	TRGS 903 - Biological limit values
2000/39/EC / TWA	:	Limit Value - eight hours
2000/39/EC / STEL	:	Short term exposure limit
2004/37/EC / STEL	:	Short term exposure limit
2004/37/EC / TWA	:	Long term exposure limit
2006/15/EC / TWA	:	Limit Value - eight hours
DE DFG MAK / Mow	:	Momentary value
DE DFG MAK / MAK	:	MAK value
DE TRGS 900 / AGW	:	Time Weighted Average

Further information

Classification of the mixture:		**Classification procedure:**
Skin Irrit. 2	H315	Calculation method
Eye Irrit. 2	H319	Calculation method

Skin Sens. 1	H317	Calculation method
Carc. 2	H351	Calculation method
Aquatic Chronic 2	H411	Calculation method

The information and recommendations in this publication are to the best of our knowledge, information and belief accurate at the date of publication, NOTHING HEREIN IS TO BE CONSTRUED AS A WARRANTY, EXPRESS OR OTHERWISE.

IN ALL CASES, IT IS THE RESPONSIBILITY OF THE USER TO DETERMINE THE APPLICABILITY OF SUCH INFORMATION AND RECOMMENDATIONS AND THE SUITABILITY OF ANY PRODUCT FOR ITS OWN PARTICULAR PURPOSE.

THE PRODUCT MAY PRESENT HAZARDS AND SHOULD BE USED WITH CAUTION. WHILE CERTAIN HAZARDS ARE DESCRIBED IN THIS PUBLICATION, NO GUARANTEE IS MADE THAT THESE ARE THE ONLY HAZARDS THAT EXIST.

Hazards, toxicity and behaviour of the products may differ when used with other materials and are dependent upon the manufacturing circumstances or other processes. Such hazards, toxicity and behaviour should be determined by the user and made known to handlers, processors and end users.

The trademarks above are the property of Huntsman Corporation or an affiliate thereof.

NO PERSON OR ORGANIZATION EXCEPT A DULY AUTHORIZED HUNTSMAN EMPLOYEE IS AUTHORIZED TO PROVIDE OR MAKE AVAILABLE DATA SHEETS FOR HUNTSMAN PRODUCTS. DATA SHEETS FROM UNAUTHORIZED SOURCES MAY CONTAIN INFORMATION THAT IS NO LONGER CURRENT OR ACCURATE.