

**Safety Data Sheet**

according to UK REACH Regulation

Revision date: 23.04.2025

Hardener W 300

Product code: 100149

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SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1. Product identifier**

Hardener W 300

Substance name: Polyoxypropylenediamine
REACH Registration Number: 01-2119557899-12-XXXX
CAS No: 9046-10-0
EC No: 618-561-0

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

Hardener

1.3. Details of the supplier of the safety data sheet

Company name: R&G Faserverbundwerkstoffe GmbH
Composite Technology
Street: Im Meißel 7 - 13
Place: D-71111 Waldenbuch
Post-office box: 1145
D-71107 Waldenbuch
Telephone: +49 (0)7157 5304-60
Telefax: +49 (0)7157 5304-70
E-mail: info@r-g.de
Contact person: Michael Groß
Internet: www.r-g.de
Responsible Department: Management

1.4. Emergency telephone number: Vergiftungs-Informations-Zentrale Freiburg
Tel: +49 (0)761 19240

SECTION 2: Hazards identification**2.1. Classification of the substance or mixture****GB CLP Regulation**

Skin Corr. 1C; H314
Eye Dam. 1; H318
Aquatic Chronic 3; H412

Full text of hazard statements: see SECTION 16.

2.2. Label elements**GB CLP Regulation****Hazard components for labelling**

Polyetherdiamine

Signal word: Danger**Pictograms:****Hazard statements**

H314 Causes severe skin burns and eye damage.
H412 Harmful to aquatic life with long lasting effects.

Precautionary statements

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

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- P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.
- P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P310 Immediately call a POISON CENTER/doctor.
- P405 Store locked up.

2.3. Other hazards

The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.

SECTION 3: Composition/information on ingredients**3.1. Substances****Relevant ingredients**

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	Classification (GB CLP Regulation)			
9046-10-0	Polyoxypropylenediamine			100 %
	618-561-0		01-2119557899-12-XXXX	
	Skin Corr. 1C, Eye Dam. 1, Aquatic Chronic 3; H314 H318 H412			

Full text of H and EUH statements: see section 16.

Specific Conc. Limits, M-factors and ATE

CAS No	EC No	Chemical name	Quantity
	Specific Conc. Limits, M-factors and ATE		
9046-10-0	618-561-0	Polyoxypropylenediamine	100 %
	dermal: LD50 = 2980 mg/kg; oral: LD50 = 2885 mg/kg		

SECTION 4: First aid measures**4.1. Description of first aid measures****General information**

Move victim out of the area.

After inhalation

Provide fresh air. @5 If unconscious, storage and transport in stable lateral position 007!0402.B040021 Medical treatment necessary.

After contact with skin

After contact with skin, wash immediately with plenty of water and soap. Take off immediately all contaminated clothing and wash it before reuse. In case of skin reactions, consult a physician.

After contact with eyes

After contact with the eyes, rinse with water with the eyelids open for a sufficient length of time, then consult an ophthalmologist immediately. Remove contact lenses, if present and easy to do. Continue rinsing.

After ingestion

Do NOT induce vomiting. Rinse mouth. Never give anything by mouth to an unconscious person or a person with cramps. Call a physician immediately.

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

No further relevant information available.

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

Treat symptomatically.

SECTION 5: Firefighting measures**5.1. Extinguishing media**



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Suitable extinguishing media

Carbon dioxide (CO₂), Extinguishing powder, Water spray jet.
In case of major fire and large quantities: Water spray jet.
Co-ordinate fire-fighting measures to the fire surroundings.

5.2. Special hazards arising from the substance or mixture

Non-flammable.
In case of fire may be liberated: Pyrolysis products, toxic .

5.3. Advice for firefighters

Wear a self-contained breathing apparatus and chemical protective clothing. Full protection suit.

Additional information

Suppress gases/vapours/mists with water spray jet. Collect contaminated fire extinguishing water separately.
Do not allow entering drains or surface water. Dispose of waste according to applicable legislation.

SECTION 6: Accidental release measures**6.1. Personal precautions, protective equipment and emergency procedures****General advice**

Remove persons to safety. Evacuate area. Für ausreichende Lüftung sorgen. Gas/Rauch/Dampf/Aerosol nicht einatmen. Avoid contact with skin, eyes and clothes.

For non-emergency personnel

Use personal protection equipment.

For emergency responders

Use personal protection equipment.

6.2. Environmental precautions

Do not allow to enter into surface water or drains. Do not allow to enter the soil or subsoil.

6.3. Methods and material for containment and cleaning up**For containment**

Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents). Treat the recovered material as prescribed in the section on waste disposal.

For cleaning up

No information available.

Other information

Clean contaminated articles and floor according to the environmental legislation.

6.4. Reference to other sections

Safe handling: see section 7
Personal protection equipment: see section 8
Disposal: see section 13

SECTION 7: Handling and storage**7.1. Precautions for safe handling****Advice on safe handling**

Provide adequate ventilation. Do not breathe gas/fumes/vapour/spray. Avoid contact with skin, eyes and clothes. Use personal protection equipment.

Advice on protection against fire and explosion

Usual measures for fire prevention.

Advice on general occupational hygiene

Wash hands and face before breaks and after work and take a shower if necessary . When using do not eat, drink, smoke, sniff.

7.2. Conditions for safe storage, including any incompatibilities

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Requirements for storage rooms and vessels

Keep/Store only in original container. Keep container tightly closed and in a well-ventilated place. Keep locked up. Provide for retaining containers, e.g. floor pan without outflow.

Hints on joint storage

Do not store together with: Acids, Food and feedingstuffs

SECTION 8: Exposure controls/personal protection**8.1. Control parameters****DNEL/DMEL values**

CAS No	Substance			
DNEL type		Exposure route	Effect	Value
9046-10-0	Polyoxypropylenediamine			
Worker DNEL, long-term		dermal	systemic	2,5 mg/kg bw/day
Worker DNEL, long-term		inhalation	systemic	5,29 mg/m³

PNEC values

CAS No	Substance		
Environmental compartment	Value		
9046-10-0	Polyoxypropylenediamine		
Freshwater	0,015 mg/l		
Marine water	0,0142 mg/l		

8.2. Exposure controls**Appropriate engineering controls**

Provide adequate ventilation as well as local exhaust at critical locations.

Individual protection measures, such as personal protective equipment**Eye/face protection**

Tightly sealed safety glasses. (DIN EN 166)

Hand protection

Wear suitable gloves. (EN374)

When handling with chemical substances, protective gloves must be worn with the CE-label including the four control digits. The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

Draw up and observe skin protection programme.

Recommended material: PVC (polyvinyl chloride)

Skin protection

Wear suitable protective clothing.

Respiratory protection

In case of inadequate ventilation wear respiratory protection.

Thermal hazards

No information available.

Environmental exposure controls

Avoid release to the environment.

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SECTION 9: Physical and chemical properties**9.1. Information on basic physical and chemical properties**

Physical state:	Liquid
Colour:	slightly yellow
Odour:	like: Ammonia (NH ₃)
Odour threshold:	not determined
Boiling point or initial boiling point and boiling range:	232 °C
Flammability:	not applicable
Lower explosion limits:	not applicable
Upper explosion limits:	not determined
Flash point:	128 °C
Auto-ignition temperature:	230 °C
Decomposition temperature:	not determined
pH-Value:	not determined
Viscosity / kinematic:	not determined
Solubility in other solvents	
not determined	
Partition coefficient n-octanol/water:	not determined
Dispersion stability:	not determined
Vapour pressure:	0,9 hPa
(at 20 °C)	
Density (at 20 °C):	0,9475 g/cm ³
Relative vapour density:	not determined

9.2. Other information**Information with regard to physical hazard classes****Explosive properties**

The product is not explosive.

Self-ignition temperature

Solid:

not applicable

Gas:

not applicable

Oxidizing properties

Not oxidising.

Other safety characteristics

Evaporation rate:

not determined

Viscosity / dynamic:

not determined

Further Information

No information available.

SECTION 10: Stability and reactivity**10.1. Reactivity**

No information available.

10.2. Chemical stability

The product is stable under storage at normal ambient temperatures.

10.3. Possibility of hazardous reactions

Exothermic reaction with: Acid.

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10.4. Conditions to avoid

No further relevant information available.

10.5. Incompatible materials

Acid.

10.6. Hazardous decomposition products

In case of fire may be liberated: Pyrolysis products, toxic .

SECTION 11: Toxicological information**11.1. Information on hazard classes as defined in GB CLP Regulation****Acute toxicity**

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

CAS No	Chemical name				
	Exposure route	Dose	Species	Source	Method
9046-10-0	Polyoxypropylenediamine				
	oral	LD50 mg/kg	2885	Rat	Manufacturer
	dermal	LD50 mg/kg	2980	Rabbit	Manufacturer

Irritation and corrosivity

Skin corrosion/irritation: Causes severe skin burns and eye damage.

Serious eye damage/eye irritation: Causes serious eye damage.

Sensitising effects

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

Carcinogenic/mutagenic/toxic effects for reproduction

Germ cell mutagenicity: Based on available data, the classification criteria are not met.

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

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

STOT-single exposure

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

STOT-repeated exposure

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

Aspiration hazard

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

11.2. Information on other hazards**Endocrine disrupting properties**

The substance is not included.

Other information

No information available.

SECTION 12: Ecological information**12.1. Toxicity**

Harmful to aquatic life with long lasting effects.

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CAS No	Chemical name					
	Aquatic toxicity	Dose	[h] [d]	Species	Source	Method
9046-10-0	Polyoxypropylenediamine					
	Acute fish toxicity	LC50 mg/l	> 15	96 h Oncorhynchus mykiss (Rainbow trout)	Manufacturer	
	Acute algae toxicity	ErC50	15 mg/l	72 h Pseudokirchneriella subcapitata	Manufacturer	
	Acute crustacea toxicity	EC50	80 mg/l	48 h Daphnia magna (Big water flea)	Manufacturer	

12.2. Persistence and degradability

The product has not been tested.

12.3. Bioaccumulative potential

The product has not been tested.

12.4. Mobility in soil

The product has not been tested.

12.5. Results of PBT and vPvB assessment

This substance does not meet the PBT/vPvB criteria of UK REACH.

The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.

12.6. Endocrine disrupting properties

This substance does not have endocrine disrupting properties with respect to non-target organisms.

No information available.

12.7. Other adverse effects

No information available.

SECTION 13: Disposal considerations**13.1. Waste treatment methods****Disposal recommendations**

Do not allow to enter into surface water or drains. Do not allow to enter into soil/subsoil. Dispose of waste according to applicable legislation. Collect the waste separately.

List of Wastes Code - residues/unused products

080299 WASTES FROM THE MANUFACTURE, FORMULATION, SUPPLY AND USE (MFSU) OF COATINGS (PAINTS, VARNISHES AND VITREOUS ENAMELS), ADHESIVES, SEALANTS AND PRINTING INKS; wastes from MFSU of other coatings (including ceramic materials); wastes not otherwise specified

Contaminated packaging

Non-contaminated packages may be recycled. Handle contaminated packages in the same way as the substance itself.

Recommended cleaning agent: Water, if necessary with the addition of cleaning agents.

SECTION 14: Transport information**Land transport (ADR/RID)**

14.1. UN number or ID number: UN 2735
14.2. UN proper shipping name: Amines, liquid, corrosive, n.o.s. (Polyoxypropylenediamine)
14.3. Transport hazard class(es): 8
14.4. Packing group: II
Hazard label: 8

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Limited quantity: 1 L
Excepted quantity: E2
Transport category: 2
Hazard No: 80
Tunnel restriction code: E

Marine transport (IMDG)

14.1. UN number or ID number: UN 2735
14.2. UN proper shipping name: Amines, liquid, corrosive, n.o.s. (Polyoxypropylenediamine)
14.3. Transport hazard class(es): 8
14.4. Packing group: II
Hazard label: 8



Limited quantity: 1 L
Excepted quantity: E2
EmS: F-A, S-B
Segregation group: 18 - alkalis

Air transport (ICAO-TI/IATA-DGR)

14.1. UN number or ID number: UN 2735
14.2. UN proper shipping name: Amines, liquid, corrosive, n.o.s. (Polyoxypropylenediamine)
14.3. Transport hazard class(es): 8
14.4. Packing group: II
Hazard label: 8



Limited quantity Passenger: 0.5 L
Excepted quantity: E2

14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS: No

14.6. Special precautions for user

Segregation Code: SG35 Stow "separated from" acids. Attention: Corrosive substances

14.7. Maritime transport in bulk according to IMO instruments

not applicable

SECTION 15: Regulatory information**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture****EU regulatory information**

Restrictions on use (REACH, annex XVII):
Entry 3

National regulatory information

Water hazard class (D): 1 - slightly hazardous to water

15.2. Chemical safety assessment

For this substance a chemical safety assessment has not been carried out.

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SECTION 16: Other information**Changes**

This data sheet contains changes from the previous version in section(s): 1,2,7,9,11,13,14.

Abbreviations and acronyms

Skin Corr: Skin corrosion

Eye Dam: Eye damage

Aquatic Chronic: Chronic aquatic hazard

CLP: Classification, labelling and Packaging

REACH: Registration, Evaluation and Authorization of Chemicals

GHS: Globally Harmonised System of Classification, Labelling and Packaging of Chemicals

UN: United Nations

CAS: Chemical Abstracts Service

DNEL: Derived No Effect Level

DMEL: Derived Minimal Effect Level

PNEC: Predicted No Effect Concentration

ATE: Acute toxicity estimate

LC50: Lethal concentration, 50%

LD50: Lethal dose, 50%

LL50: Lethal loading, 50%

EL50: Effect loading, 50%

EC50: Effective Concentration 50%

ErC50: Effective Concentration 50%, growth rate

NOEC: No Observed Effect Concentration

BCF: Bio-concentration factor

PBT: persistent, bioaccumulative, toxic

vPvB: very persistent, very bioaccumulative

MARPOL: International Convention for the Prevention of Marine Pollution from Ships

IBC: Intermediate Bulk Container

SVHC: Substance of Very High Concern

CLP: Classification, labelling and Packaging

REACH: Registration, Evaluation and Authorization of Chemicals

GHS: Globally Harmonised System of Classification, Labelling and Packaging of Chemicals

UN: United Nations

CAS: Chemical Abstracts Service

DNEL: Derived No Effect Level

DMEL: Derived Minimal Effect Level

PNEC: Predicted No Effect Concentration

ATE: Acute toxicity estimate

LC50: Lethal concentration, 50%

LD50: Lethal dose, 50%

LL50: Lethal loading, 50%

EL50: Effect loading, 50%

EC50: Effective Concentration 50%

ErC50: Effective Concentration 50%, growth rate

NOEC: No Observed Effect Concentration

BCF: Bio-concentration factor

PBT: persistent, bioaccumulative, toxic

vPvB: very persistent, very bioaccumulative

MARPOL: International Convention for the Prevention of Marine Pollution from Ships

IBC: Intermediate Bulk Container

SVHC: Substance of Very High Concern

For abbreviations and acronyms, see table at <http://abbrev.esdscom.eu>

Relevant H and EUH statements (number and full text)

H314 Causes severe skin burns and eye damage.

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H318 Causes serious eye damage.
H412 Harmful to aquatic life with long lasting effects.

Further Information

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.

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Epoxy Casting Resin (water-clear)

Revision date: 28.04.2025

Product code: 107106

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SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1. Product identifier**

Epoxy Casting Resin (water-clear)

UFI: ASF3-D007-A00T-0J6Y

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

Epoxy binder

1.3. Details of the supplier of the safety data sheet

Company name: R&G Faserverbundwerkstoffe GmbH

Street: Im Meißel 7 - 13

Place: D-71111 Waldenbuch

Post-office box: 1145

D-71107 Waldenbuch

Telephone: +49-7157-530460

Telefax: +49-7157-530470

E-mail: info@r-g.de

Contact person: Michael Groß

E-mail: info@r-g.de

Internet: www.r-g.de

Responsible Department: Management

1.4. Emergency telephone

Vergiftungs-Informations-Zentrale Freiburg

number:

Tel: +49 (0)761 19240

SECTION 2: Hazards identification**2.1. Classification of the substance or mixture****GB CLP Regulation**

Skin Irrit. 2; H315

Eye Irrit. 2; H319

Skin Sens. 1; H317

Aquatic Chronic 2; H411

Full text of hazard statements: see SECTION 16.

2.2. Label elements**GB CLP Regulation****Hazard components for labelling**

2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)] bisoxirane

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

[methylenebis(2,1-phenyleneoxymethylene)]dioxirane

Reaction products of hexane-1,6-diol with 2-(chloromethyl) oxirane (1:2)

Signal word:

Warning

Pictograms:**Hazard statements**

H315

Causes skin irritation.

H317

May cause an allergic skin reaction.

H319

Causes serious eye irritation.

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H411 Toxic to aquatic life with long lasting effects.

Precautionary statements

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.
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
P273 Avoid release to the environment.
P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.

2.3. Other hazards

The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.
The product does not contain any substances with endocrine-disrupting properties.

SECTION 3: Composition/information on ingredients**3.2. Mixtures****Relevant ingredients**

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	Classification (GB CLP Regulation)			
1675-54-3	2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)] bisoxirane			50 - 100 %
	216-823-5		01-2119456619-26	
	Skin Irrit. 2, Eye Irrit. 2, Skin Sens. 1, Aquatic Chronic 2; H315 H319 H317 H411			
933999-84-9	Reaction products of hexane-1,6-diol with 2-(chloromethyl) oxirane (1:2)			10 - 25 %
	618-939-5		01-2119463471-41	
	Skin Irrit. 2, Eye Irrit. 2, Skin Sens. 1, Aquatic Chronic 3; H315 H319 H317 H412			
	Reaction mass of 2,2'-[methylenebis(4,1-phenyleneoxymethylene)]dioxirane and [2-({2-[4-(oxiran-2-ylmethoxy)benzyl]phenoxy)methyl}oxirane and [2,2'-[methylenebis(2,1-phenyleneoxymethylene)]dioxirane			10 - 25 %
	701-263-0		01-2119454392-40	
	Skin Irrit. 2, Skin Sens. 1, Aquatic Chronic 2; H315 H317 H411			

Full text of H and EUH statements: see section 16.

Specific Conc. Limits, M-factors and ATE

CAS No	EC No	Chemical name	Quantity
		Specific Conc. Limits, M-factors and ATE	
1675-54-3	216-823-5	2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)] bisoxirane	50 - 100 %
		dermal: LD50 = 23000 mg/kg; oral: LD50 = 15000 mg/kg	
933999-84-9	618-939-5	Reaction products of hexane-1,6-diol with 2-(chloromethyl) oxirane (1:2)	10 - 25 %
		dermal: LD50 = 2000 mg/kg; oral: LD50 = 2190 mg/kg	
	701-263-0	Reaction mass of 2,2'-[methylenebis(4,1-phenyleneoxymethylene)]dioxirane and [2-({2-[4-(oxiran-2-ylmethoxy)benzyl]phenoxy)methyl}oxirane and [2,2'-[methylenebis(2,1-phenyleneoxymethylene)]dioxirane	10 - 25 %
		dermal: LD50 = > 2000 mg/kg; oral: LD50 = > 5000 mg/kg	

SECTION 4: First aid measures**4.1. Description of first aid measures****General information**

Take off immediately all contaminated clothing.

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After inhalation

Provide fresh air. If breathing is irregular or stopped, administer artificial respiration. Medical treatment necessary.

After contact with skin

After contact with skin, wash immediately with polyethylene glycol, followed by plenty of water. Take off immediately all contaminated clothing and wash it before reuse. If skin irritation occurs.

After contact with eyes

After contact with the eyes, rinse with water with the eyelids open for a sufficient length of time, then consult an ophthalmologist immediately.

After ingestion

Seek medical advice immediately.

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

No information available.

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

Treat symptomatically.

SECTION 5: Firefighting measures**5.1. Extinguishing media****Suitable extinguishing media**

Carbon dioxide (CO₂), Extinguishing powder, Water spray jet.

Unsuitable extinguishing media

Full water jet

5.2. Special hazards arising from the substance or mixture

The product itself does not burn. In case of fire may be liberated: Gases/vapours, toxic.

5.3. Advice for firefighters

Wear a self-contained breathing apparatus and chemical protective clothing. Full protection suit.

Additional information

Suppress gases/vapours/mists with water spray jet. Collect contaminated fire extinguishing water separately.

Do not allow entering drains or surface water.

SECTION 6: Accidental release measures**6.1. Personal precautions, protective equipment and emergency procedures****General advice**

Use personal protection equipment. Evacuate area.

For non-emergency personnel

No information available.

For emergency responders

No information available.

6.2. Environmental precautions

Do not allow to enter into surface water or drains.

Do not allow to enter the soil or subsoil.

6.3. Methods and material for containment and cleaning up**For containment**

No information available.

For cleaning up

No information available.

Other information

Provide adequate ventilation. Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal

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binding agents). Treat the recovered material as prescribed in the section on waste disposal.

6.4. Reference to other sections

Safe handling: see section 7

Personal protection equipment: see section 8

Disposal: see section 13

SECTION 7: Handling and storage**7.1. Precautions for safe handling****Advice on safe handling**

The usual precautions when handling chemicals must be observed.

Ensure good ventilation/extraction at the workplace.

Advice on protection against fire and explosion

No special fire protection measures are necessary.

Advice on general occupational hygiene

Remove contaminated, saturated clothing immediately. Draw up and observe skin protection programme.

Wash hands and face before breaks and after work and take a shower if necessary. When using do not eat or drink.

7.2. Conditions for safe storage, including any incompatibilities**Requirements for storage rooms and vessels**

Keep/Store only in original container. Provide for retaining containers, eg. floor pan without outflow. Employ reliable measures to prevent the product from entering the soil.

Hints on joint storage

Store separately from foodstuffs.

Further information on storage conditions

Keep receptacles tightly sealed.

7.3. Specific end use(s)

No further relevant information available.

SECTION 8: Exposure controls/personal protection**8.1. Control parameters**

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DNEL/DMEL values

CAS No	Substance			
DNEL type		Exposure route	Effect	Value
1675-54-3	2,2'-[[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)] bisoxirane			
Worker DNEL,		dermal		0,75 mg/kg bw/day
Worker DNEL,		inhalation		4,93 mg/m³
933999-84-9	Reaction products of hexane-1,6-diol with 2-(chloromethyl) oxirane (1:2)			
Worker DNEL, acute		dermal	local	22,6 mg/cm²
Worker DNEL, long-term		dermal	local	22,6 mg/cm²
Worker DNEL, long-term		dermal	systemic	2,8 mg/kg bw/day
Worker DNEL, acute		inhalation	systemic	4,9 mg/m³
Worker DNEL, long-term		inhalation	systemic	4,9 mg/m³
Worker DNEL, long-term		inhalation	local	0,44 mg/m³
	Reaction mass of 2,2'-[methylenebis(4,1-phenyleneoxymethylene)]dioxirane and [2-({2-[4-(oxiran-2-ylmethoxy)benzyl]phenoxy)methyl}oxirane and [2,2'-[methylenebis(2,1-phenyleneoxymethylene)]dioxirane			
Worker DNEL, long-term		dermal	systemic	104,15 mg/kg bw/day
Worker DNEL, long-term		inhalation	systemic	29,39 mg/m³

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PNEC values

CAS No	Substance	
Environmental compartment		Value
1675-54-3	2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)] bisoxirane	
Freshwater		0,006 mg/l
Marine water		0,001 mg/l
Freshwater sediment		0,341 mg/kg
Marine sediment		0,034 mg/kg
Secondary poisoning		11 mg/kg
Micro-organisms in sewage treatment plants (STP)		10 mg/l
Soil		0,065 mg/kg
933999-84-9	Reaction products of hexane-1,6-diol with 2-(chloromethyl) oxirane (1:2)	
Freshwater		0,0115 mg/l
Marine water		0,00115 mg/l
Marine water (intermittent releases)		0,0283 mg/kg
Freshwater sediment		0,283 mg/kg
Micro-organisms in sewage treatment plants (STP)		1 mg/l
Soil		0,223 mg/kg
	Reaction mass of 2,2'-[methylenabis(4,1-phenyleneoxymethylene)]dioxirane and [2-{[2-[4-(oxiran-2-ylmethoxy)benzyl]phenoxy)methyl]oxirane and [2,2'-[methylenabis(2,1-phenyleneoxymethylene)]dioxirane	
Freshwater		0,003 mg/l
Freshwater (intermittent releases)		0,025 mg/l
Marine water		0 mg/l
Freshwater sediment		0,294 mg/kg
Marine sediment		0,029 mg/kg
Micro-organisms in sewage treatment plants (STP)		10 mg/l
Soil		0,237 mg/kg

Additional advice on limit values

The product does not contain any relevant quantities of substances with limit values that require monitoring at the workplace.

8.2. Exposure controls**Individual protection measures, such as personal protective equipment****Eye/face protection**

Suitable eye protection: goggles.

Hand protection

When handling with chemical substances, protective gloves must be worn with the CE-label including the four control digits. The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

Suitable material: FKM (fluoro rubber), NBR (Nitrile rubber)

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Thickness of the glove material: > 0,5mm

Skin protection

Wear suitable protective clothing.

Respiratory protection

In case of inadequate ventilation wear respiratory protection. ABEK-P2

SECTION 9: Physical and chemical properties**9.1. Information on basic physical and chemical properties**

Physical state:	Liquid	
Colour:		
Odour:	characteristic	
Odour threshold:	not determined	
Melting point/freezing point:		not determined
Boiling point or initial boiling point and boiling range:		200 °C
Flammability:		not applicable
		not applicable
Lower explosion limits:		not determined
Upper explosion limits:		not determined
Flash point:		>93 °C
Auto-ignition temperature:		>400 °C
Decomposition temperature:		not determined
pH-Value:		not applicable
Water solubility:		Immiscible
Solubility in other solvents		
not determined		
Partition coefficient n-octanol/water:		not determined
Density (at 20 °C):		1,13 g/cm ³
Relative vapour density:		not determined

9.2. Other information**Information with regard to physical hazard classes****Explosive properties**

The product is not: Explosive.

Self-ignition temperature

Solid:

not applicable

Gas:

not applicable

Oxidizing properties

Not oxidising.

Other safety characteristics**Evaporation rate:**

not determined

Further Information

No information available.

SECTION 10: Stability and reactivity**10.1. Reactivity**

No hazardous reaction when handled and stored according to provisions.

10.2. Chemical stability

no decomposition when stored and handled properly

10.3. Possibility of hazardous reactions

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reaction with strong oxidising agents Alkalis (alkalis). Acids

10.4. Conditions to avoid

The product does not contain any relevant quantities of substances with workplace-related limit values to be monitored.

10.5. Incompatible materials

Keep away from oxidising agents.

10.6. Hazardous decomposition products

no decomposition when stored and handled properly

In case of fire may be liberated: toxic and caustic gases and vapours

SECTION 11: Toxicological information**11.1. Information on hazard classes as defined in GB CLP Regulation****Acute toxicity**

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

ATEmix calculated

ATE (oral) > 2000 mg/kg; ATE (dermal) > 2000 mg/kg; ATE (inhalation vapour) > 20 mg/l; ATE (inhalation dust/mist) > 5 mg/l

CAS No	Chemical name				
	Exposure route	Dose	Species	Source	Method
1675-54-3	2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)] bisoxirane				
	oral	LD50 mg/kg	15000	rat	
	dermal	LD50 mg/kg	23000	rabbit	
933999-84-9	Reaction products of hexane-1,6-diol with 2-(chloromethyl) oxirane (1:2)				
	oral	LD50 mg/kg	2190	rat	
	dermal	LD50 mg/kg	2000	rabbit	
	Reaction mass of 2,2'-[methylenebis(4,1-phenyleneoxymethylene)]dioxirane and [2-({2-[4-(oxiran-2-ylmethoxy)benzyl]phenoxy)methyl}oxirane and [2,2'-[methylenebis(2,1-phenyleneoxymethylene)]dioxirane]				
	oral	LD50 mg/kg	> 5000	Rat	Manufacturer
	dermal	LD50 mg/kg	> 2000	Rat	Manufacturer

Irritation and corrosivity

Skin corrosion/irritation: Causes skin irritation.

Serious eye damage/eye irritation: Causes serious eye irritation.

Sensitising effects

May cause an allergic skin reaction. (2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)] bisoxirane; Reaction products of hexane-1,6-diol with 2-(chloromethyl) oxirane (1:2); Reaction mass of 2,2'-[methylenebis(4,1-phenyleneoxymethylene)]dioxirane and [2-({2-[4-(oxiran-2-ylmethoxy)benzyl]phenoxy)methyl}oxirane and [2,2'-[methylenebis(2,1-phenyleneoxymethylene)]dioxirane]

Carcinogenic/mutagenic/toxic effects for reproduction

Germ cell mutagenicity: Based on available data, the classification criteria are not met.

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

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

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STOT-single exposure

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

STOT-repeated exposure

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

Aspiration hazard

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

11.2. Information on other hazards**Endocrine disrupting properties**

None of the ingredients are included.

SECTION 12: Ecological information**12.1. Toxicity**

Toxic to aquatic life with long lasting effects.

CAS No	Chemical name					
	Aquatic toxicity	Dose	[h] [d]	Species	Source	Method
1675-54-3	2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)] bisoxirane					
	Acute fish toxicity	LC50 2 mg/l	96 h	Oncorhynchus mykiss (Rainbow trout)		
	Acute algae toxicity	ErC50 11 mg/l	72 h	algae		
	Acute crustacea toxicity	EC50 1,8 mg/l	48 h	Daphnia magna		
933999-84-9	Reaction products of hexane-1,6-diol with 2-(chloromethyl) oxirane (1:2)					
	Acute fish toxicity	LC50 30 mg/l	96 h	fish		
	Acute algae toxicity	ErC50 11 mg/l	72 h	algae		
	Acute crustacea toxicity	EC50 1,8 mg/l	48 h	Daphnia magna		
	Reaction mass of 2,2'-[methylenebis(4,1-phenyleneoxymethylene)]dioxirane and [2-({2-[4-(oxiran-2-ylmethoxy)benzyl]phenoxy)methyl}oxirane and [2,2'-[methylenebis(2,1-phenyleneoxymethylene)]dioxirane					
	Acute fish toxicity	LC50 2,54 mg/l	96 h	Leuciscus idus (golden orfe)	Manufacturer	
	Acute algae toxicity	ErC50 1,8 mg/l	72 h	Selenastrum capricornutum	Manufacturer	
	Acute crustacea toxicity	EC50 2,55 mg/l	48 h	Daphnia magna (Big water flea)	Manufacturer	

12.2. Persistence and degradability

The product does not contain any relevant quantities of substances with workplace-related limit values to be monitored.

12.3. Bioaccumulative potential

The product does not contain any relevant quantities of substances with workplace-related limit values to be monitored.

12.4. Mobility in soil

The product does not contain any relevant quantities of substances with workplace-related limit values to be monitored.

12.5. Results of PBT and vPvB assessmentThe substances in the mixture do not meet the PBT/vPvB criteria according to UK REACH.
not applicable**12.6. Endocrine disrupting properties**

This product does not contain a substance that has endocrine disrupting properties with respect to non-target organisms as no components meets the criteria.

Further information

Do not allow to enter into surface water or drains. Do not allow to enter into soil/subsoil.

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SECTION 13: Disposal considerations**13.1. Waste treatment methods****Disposal recommendations**

Do not allow to enter into surface water or drains. Do not allow to enter into soil/subsoil. Dispose of waste according to applicable legislation.

List of Wastes Code - residues/unused products

080299 WASTES FROM THE MANUFACTURE, FORMULATION, SUPPLY AND USE (MFSU) OF COATINGS (PAINTS, VARNISHES AND VITREOUS ENAMELS), ADHESIVES, SEALANTS AND PRINTING INKS; wastes from MFSU of other coatings (including ceramic materials); wastes not otherwise specified

List of Wastes Code - used product

080299 WASTES FROM THE MANUFACTURE, FORMULATION, SUPPLY AND USE (MFSU) OF COATINGS (PAINTS, VARNISHES AND VITREOUS ENAMELS), ADHESIVES, SEALANTS AND PRINTING INKS; wastes from MFSU of other coatings (including ceramic materials); wastes not otherwise specified

Contaminated packaging

Non-contaminated packages may be recycled. Handle contaminated packages in the same way as the substance itself. Dispose of waste according to applicable legislation.

SECTION 14: Transport information**Land transport (ADR/RID)****14.1. UN number or ID number:**

UN 3082

14.2. UN proper shipping name:ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(Epoxy resin)**14.3. Transport hazard class(es):**

9

14.4. Packing group:

III

Hazard label:

9



Classification code:

M6

Limited quantity:

5 L

Excepted quantity:

E1

Transport category:

3

Hazard No:

90

Tunnel restriction code:

E

Other applicable information (land transport)

Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml

Inland waterways transport (ADN)**14.1. UN number or ID number:**

UN 3082

14.2. UN proper shipping name:ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(Epoxy resin)**14.3. Transport hazard class(es):**

9

14.4. Packing group:

III

Hazard label:

9



Classification code:

M6

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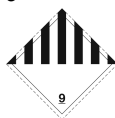
Limited quantity: 5 L

Other applicable information (inland waterways transport)

Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml

Marine transport (IMDG)

14.1. UN number or ID number: UN 3082
14.2. UN proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(epoxy resin)
14.3. Transport hazard class(es): 9
14.4. Packing group: III
Hazard label: 9



Marine pollutant: Ja
Limited quantity: 5 L
Excepted quantity: E 1
EmS: F-A, S-F

Other applicable information (marine transport)

Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml

Air transport (ICAO-TI/IATA-DGR)

14.1. UN number or ID number: UN 3082
14.2. UN proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(epoxy resin)
14.3. Transport hazard class(es): 9
14.4. Packing group: III
Hazard label: 9



Limited quantity Passenger: 5 L
Excepted quantity: E 1

Other applicable information (air transport)

Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml

14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS: Yes

**14.7. Maritime transport in bulk according to IMO instruments**

not applicable

SECTION 15: Regulatory information**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture****EU regulatory information**

Restrictions on use (REACH, annex XVII):

Entry 3

Information according to Directive
2012/18/EU (SEVESO III):

E2 Hazardous to the Aquatic Environment

National regulatory information

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Employment restrictions: Observe restrictions to employment for juveniles according to the 'juvenile work protection guideline' (94/33/EC).

Water hazard class (D): 2 - obviously hazardous to water

15.2. Chemical safety assessment

Chemical safety assessments for substances in this mixture were not carried out.

SECTION 16: Other information**Changes**

This data sheet contains changes from the previous version in section(s): 1,2,7,9,11,12,14.

Abbreviations and acronyms

Skin Irrit: Skin irritation
Eye Irrit: Eye irritation
Skin Sens: Skin sensitisation
Aquatic Chronic: Chronic aquatic hazard
CLP: Classification, labelling and Packaging
REACH: Registration, Evaluation and Authorization of Chemicals
GHS: Globally Harmonised System of Classification, Labelling and Packaging of Chemicals
UN: United Nations
CAS: Chemical Abstracts Service
DNEL: Derived No Effect Level
DMEL: Derived Minimal Effect Level
PNEC: Predicted No Effect Concentration
ATE: Acute toxicity estimate
LC50: Lethal concentration, 50%
LD50: Lethal dose, 50%
LL50: Lethal loading, 50%
EL50: Effect loading, 50%
EC50: Effective Concentration 50%
ErC50: Effective Concentration 50%, growth rate
NOEC: No Observed Effect Concentration
BCF: Bio-concentration factor
PBT: persistent, bioaccumulative, toxic
vPvB: very persistent, very bioaccumulative
ADR: Accord européen sur le transport des marchandises dangereuses par Route
(European Agreement concerning the International Carriage of Dangerous Goods by Road)
RID: Regulations concerning the international carriage of dangerous goods by rail
ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
(Accord européen relatif au transport international des marchandises dangereuses par voies de navigation intérieures)
IMDG: International Maritime Code for Dangerous Goods
EmS: Emergency Schedules
MFAG: Medical First Aid Guide
IATA: International Air Transport Association
ICAO: International Civil Aviation Organization
MARPOL: International Convention for the Prevention of Marine Pollution from Ships
IBC: Intermediate Bulk Container
VOC: Volatile Organic Compounds
SVHC: Substance of Very High Concern
For abbreviations and acronyms, see table at <http://abbrev.esdscom.eu>

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Classification for mixtures and used evaluation method according to GB CLP Regulation

Classification	Classification procedure
Skin Irrit. 2; H315	Calculation method
Eye Irrit. 2; H319	Calculation method
Skin Sens. 1; H317	Calculation method
Aquatic Chronic 2; H411	Calculation method

Relevant H and EUH statements (number and full text)

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.
H412	Harmful to aquatic life with long lasting effects.

Further Information

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.

(The data for the relevant ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.)