



Gorilla Super Glue Gel

According to REACH Regulation (EC) No 1907/2006, as amended by UK REACH Regulations SI 2019/758 and SI 2020/1577

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier

Product Name	Gorilla Super Glue Gel
Synonyms	ethyl 2-cyanoacrylate; 1,4-dihydroxybenzene
CAS No.	Not applicable.
EC No.	Not applicable.
REACH Registration No.	Not known.
Unique Formula Identifier (UFI)	F7P4-E9U6-400G-YJPT

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

Identified Use(s)	Adhesives.
Uses Advised Against	Not known.

1.3 Details of the supplier of the safety data sheet

Manufacturer

Company Identification	Gorilla Glue Europe Ltd
Address of Manufacturer	26 Eaton Avenue Matrix Park Buckshaw Village Chorley Lancashire PR7 7NA
Postal code	PR7 7NA
Telephone:	01257 241 319
Fax	Not known.
E-mail	Eucustomercare@gorillaglu.com
Office hours	08:30 - 17:00

Supplier

Company Identification	Gorilla Glue Europe Ltd
Address of Supplier	26 Eaton Avenue Matrix Park Buckshaw Village Chorley Lancashire PR7 7NA
Postal code	PR7 7NA
Telephone:	01257 241 319
Fax	Not known.
E-mail	Eucustomercare@gorillaglu.com
Office hours	08:30 - 17:00

1.4 Emergency telephone number

Emergency Phone No.	+44 (0)843 507 1200
Contact	Stuart Shotton
National response centre	
Address	NHS Direct



Gorilla Super Glue Gel

Emergency Phone No. +44 111

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GB CLP Regulation, UK SI 2019/720
and UK SI 2020/1567

Skin Irrit. 2 :Causes skin irritation.
Eye Irrit. 2 :Causes serious eye irritation.
STOT SE 3 :May cause respiratory irritation.

2.2 Label elements

According to GB CLP Regulations, UK SI 2019/720 and UK SI 2020/1567

Product Name

Gorilla Super Glue Gel

Hazard Pictogram(s)



GHS07

Signal Word(s)

Warning

Hazard Statement(s)

H315: Causes skin irritation.
H319: Causes serious eye irritation.
H335: May cause respiratory irritation.
EUH202: Cyanoacrylate. Danger. Bonds skin and eyes in seconds. Keep out of the reach of children.

Precautionary Statement(s)

P101: If medical advice is needed, have product container or label at hand.
P261: Avoid breathing vapours.
P280: Wear protective gloves/protective clothing/eye protection/face 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.
P337+P313: If eye irritation persists: Get medical advice/attention.
P501: Dispose of contents in accordance with local, state or national legislation.

2.3 Other hazards

None known.

2.4 Additional Information

For full text of H/P Statements see section 16.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

**Gorilla Super Glue Gel****3.1 Substances**

Not applicable.

3.2 Mixtures

HAZARDOUS INGREDIENT(S)	CAS No.	EC No. / Registration number(s)	%W/W	Hazard Statement(s)	Hazard Pictogram(s)
ethyl 2-cyanoacrylate	7085-85-0	230-391-5	85-95	Skin Irrit. 2 H315 Eye Irrit. 2 H319 STOT SE 3 H335	GHS07
1,4-dihydroxybenzene	123-31-9	204-617-8	<0.1	Acute Tox. 4 H302 Skin Sens. 1 H317 Eye Dam. 1 H318 Muta. 2 H341 Carc. 2 H351 Aquatic Acute 1 H400	GHS05 GHS08 GHS07 GHS09

For full text of H/P Statements see section 16.

SECTION 4: FIRST AID MEASURES**4.1 Description of first aid measures**

Inhalation	Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTRE/doctor if you feel unwell.
Skin Contact	Take off contaminated clothing and wash it before reuse. If skin irritation occurs: Get medical advice/attention. Specific treatment (see Medical Advice on this label).
Eye Contact	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
Ingestion	Treat symptomatically.

4.2 Most important symptoms and effects, both acute and delayed

May cause irritation.

4.3 Indication of any immediate medical attention and special treatment needed

Specific treatment (see Medical Advice on this label). Call a POISON CENTRE/doctor if you feel unwell. Treat symptomatically.

SECTION 5: FIREFIGHTING MEASURES**5.1 Extinguishing media**



Gorilla Super Glue Gel

Suitable Extinguishing media As appropriate for surrounding fire.
Unsuitable extinguishing media None.

5.2 Special hazards arising from the substance or mixture

May decompose in a fire, giving off toxic and irritant vapours.

5.3 Advice for firefighters

Fire fighters should wear complete protective clothing including self-contained breathing apparatus.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Provide adequate ventilation. Ensure full personal protection (including respiratory protection) during removal of spillages.

6.2 Environmental precautions

Spillages or uncontrolled discharges into watercourses must be alerted to the appropriate regulatory body.

6.3 Methods and material for containment and cleaning up

Adsorb spillages onto sand, earth or any suitable adsorbent material. Transfer to a container for disposal.

6.4 Reference to other sections

See Also Section 8, 13.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling

Wash hands and exposed skin thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection. Avoid breathing vapours. Use only outdoors or in a well-ventilated area.

7.2 Conditions for safe storage, including any incompatibilities

Store in a well-ventilated place. Keep container tightly closed. Store locked up.

Storage temperature

Ambient.

Storage life

Stable under normal conditions.

Incompatible materials

None known.

7.3 Specific end use(s)

Adhesives.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

8.1.1 Occupational Exposure Limits

Occupational Exposure Limits						
SUBSTANCE.	CAS No.	LTEL (8 hr TWA ppm)	LTEL (8 hr TWA mg/m ³)	STEL (ppm)	STEL (mg/m ³)	Note

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Ethyl cyanoacrylate	7085-85-0			0.3	1.5	
Hydroquinone	123-31-9		0.5			

Region Source
United Kingdom UK Workplace Exposure Limits EH40/2005 (Fourth edition, published 2020)

Remark Notes

8.2 Exposure controls

8.2.1. Appropriate engineering controls Ensure adequate ventilation. A washing facility/water for eye and skin cleaning purposes should be present.

8.2.2. Personal protection equipment



Eye Protection

Wear eye protection with side protection (EN166).



Skin protection

Wear protective clothing and gloves: Impervious gloves (EN 374).



Respiratory protection

Normally no personal respiratory protection is necessary.



Thermal hazards

None known.

8.2.3. Environmental Exposure Controls Avoid release to the environment.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**9.1 Information on basic physical and chemical properties**

Appearance	Liquid.
	Colour : Clear.
Odour	Characteristic.
Odour threshold	Not known.
pH	Not known.
Melting point/freezing point	Not known.
Initial boiling point and boiling range	Not known.
Flash Point	>81° C
Evaporation rate	Not known.
Flammability (solid, gas)	Not known.
Upper/lower flammability or explosive limits	Not known.
Vapour pressure	Not known.

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Vapour density	Not known.
Density (g/ml)	1.1g/cm ³ @ 20° C
Relative density	Not known.
Solubility(ies)	Solubility (Water) : Immiscible. Solubility (Other) : Not known.
Partition coefficient: n-octanol/water	Not known.
Auto-ignition temperature	Not known.
Decomposition Temperature (° C)	Not known.
Viscosity	Not known.
Explosive properties	Not explosive.
Oxidising properties	Not oxidising.

9.2 Other information

None.

SECTION 10: STABILITY AND REACTIVITY**10.1 Reactivity**

None anticipated.

10.2 Chemical Stability

Stable under normal conditions.

10.3 Possibility of hazardous reactions

No hazardous reactions known if used for its intended purpose.

10.4 Conditions to avoid

None anticipated.

10.5 Incompatible materials

Not known.

10.6 Hazardous decomposition products

No hazardous decomposition products known.

SECTION 11: TOXICOLOGICAL INFORMATION**11.1 Information on toxicological effects**

Acute toxicity - Ingestion	Calculation method : Not classified.
Acute toxicity - Skin Contact	Calculation method : Not classified.
Acute toxicity - Inhalation	Calculation method : Not classified.
Skin corrosion/irritation	Calculation method : Causes skin irritation.
Serious eye damage/irritation	Calculation method : Causes serious eye irritation.
Skin sensitization data	Calculation method : Not classified. Contains isocyanates. May produce an allergic reaction. No data.
Respiratory sensitization data	Calculation method : Not classified.
Germ cell mutagenicity	Calculation method : Not classified.
Carcinogenicity	Calculation method : Not classified.
Reproductive toxicity	Calculation method : Not classified.



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Lactation

STOT - single exposure

STOT - repeated exposure

Aspiration hazard

11.2 Other information

Not classified

Calculation method : May cause respiratory irritation.

Calculation method : Not classified.

Calculation method : Not classified.

Not known.

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity - Aquatic invertebrates

Low toxicity to invertebrates.

Toxicity - Fish

Low toxicity to fish.

Toxicity - Algae

Low toxicity to algae.

Toxicity - Sediment Compartment

Not classified.

Toxicity - Terrestrial Compartment

Not classified.

12.2 Persistence and degradability

No information available.

12.3 Bioaccumulative potential

No information available.

12.4 Mobility in soil

Immiscible with water. The product is predicted to have low mobility in soil.

12.5 Results of PBT and vPvB assessment

Not classified as PBT or vPvB.

12.6 Other adverse effects

Not known.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Dispose of contents in accordance with local, state or national legislation.

Send to a licensed recycler, reclaimer or incinerator. Dispose at suitable refuse site.

13.2 Additional Information

Disposal should be in accordance with local, state or national legislation.

SECTION 14: TRANSPORT INFORMATION

Not classified as hazardous for transport.

14.1 UN number

Not applicable

**Gorilla Super Glue Gel****14.2 UN proper shipping name**

Not applicable

14.3 Transport hazard class(es)

Not applicable

14.4 Packing group

Not applicable

14.5 Environmental hazards

Not classified as a Marine Pollutant.

14.6 Special precautions for user

Not known

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code

Not known

SECTION 15: REGULATORY INFORMATION**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

United Kingdom Regulations - Authorisations and/or Restrictions On Use

UK REACH Candidate List of Substances of Very High Concern for

Not listed

Authorisation

UK REACH Authorisation List (Annex XIV) list of substances subject to

Not listed

authorisation
UK REACH Restrictions List (Annex XIV) Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles

ethyl 2-cyanoacrylate (7085-85-0), 1,4-dihydroxybenzene (123-31-9)

The Persistent Organic Pollutants Regulations 2007 (SI 2007/3106) as amended

Not listed

The Ozone-Depleting Substances and Fluorinated Greenhouse Gases (Amendment etc.) (EU Exit) Regulations 2019 (SI 2019/583)

Not listed

The Prior Informed Consent (PIC) Regulations concerning the export and import of hazardous chemicals SI2008/2108 as amended

Not listed

European Regulations - Authorisations and/or Restrictions On Use

Community Rolling Action Plan (CoRAP)

Hydroquinone (123-31-9)

15.2 Chemical Safety Assessment

**Gorilla Super Glue Gel**

United Kingdom

A REACH chemical safety assessment has not been carried out.

SECTION 16: OTHER INFORMATION

The following sections contain revisions or new statements:

LEGEND

Hazard Pictogram(s)



GHS07

GHS05: GHS: Corrosion

GHS08: GHS: Health hazard

GHS09: GHS: Environment

Hazard classification

Acute Tox. 4 : Acute toxicity, Category 4

Skin Irrit. 2 : Skin corrosion/irritation, Category 2

Skin Sens. 1 : Skin sensitization, Category 1

Eye Dam. 1 : Serious eye damage/irritation, Category 1

Eye Irrit. 2 : Serious eye damage/irritation, Category 2

STOT SE 3 : Specific target organ toxicity — single exposure, Category 3

Muta. 2 : Germ cell mutagenicity, Category 2

Carc. 2 : Carcinogenicity, Category 2

Aquatic Acute 1 : Hazardous to the aquatic environment, Acute, Category 1

Hazard Statement(s)

H302: Harmful if swallowed.

H315: Causes skin irritation.

H317: May cause an allergic skin reaction.

H318: Causes serious eye damage.

H319: Causes serious eye irritation.

H335: May cause respiratory irritation.

H341: Suspected of causing genetic defects.

H351: Suspected of causing cancer.

H400: Very toxic to aquatic life.

EUH202: Cyanoacrylate. Danger. Bonds skin and eyes in seconds. Keep out of the reach of children.



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Precautionary Statement(s)

P101: If medical advice is needed, have product container or label at hand.
P261: Avoid breathing vapours.
P264: Wash hands and exposed skin thoroughly after handling.
P271: Use only outdoors or in a well-ventilated area.
P280: Wear protective gloves/protective clothing/eye protection/face protection.
P302+P352: IF ON SKIN: Wash with plenty of water.
P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P312: Call a POISON CENTRE/doctor if you feel unwell.
P321: Specific treatment (see Medical Advice on this label).
P332+P313: If skin irritation occurs: Get medical advice/attention.
P337+P313: If eye irritation persists: Get medical advice/attention.
P362+P364: Take off contaminated clothing and wash it before reuse.
P403+P233: Store in a well-ventilated place. Keep container tightly closed.
P405: Store locked up.
P501: Dispose of contents in accordance with local, state or national legislation.

Acronyms

ATE : Acute Toxicity Estimate
CAS : Chemical Abstracts Service
DNEL : Derived No Effect Level
EC : European Community
EINECS : European Inventory of Existing Commercial Chemical Substances
LTEL : Long term exposure limit
PBT : Persistent, Bioaccumulative and Toxic
PNEC : Predicted No Effect Concentration
REACH : Registration, Evaluation, Authorisation and Restriction of Chemicals
STEL : Short term exposure limit
STOT : Specific Target Organ Toxicity
vPvB : very Persistent and very Bioaccumulative

Key literature references and sources for data used to compile the SDS

GB CLP Regulation, UK SI 2019/720 and UK SI 2020/1567

Disclaimers

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Version	Revision Date:	SDS Number:	Date of last issue: 13.12.2023
1.6	18.09.2024	400001021217	Date of first issue: 20.07.2018

Print Date 08.05.2025

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

1.1 Product identifier

Trade name : ARALDITE® STANDARD ULTRA RESIN

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 (UK) LIMITED
Address : Ickleton Road, Duxford, Cambridgeshire
CB22 4XQ United Kingdom
Telephone : +41 61 299 20 41
E-mail address of person responsible for the SDS : Global_Product_EHS_AdMat@huntsman.com

1.4 Emergency telephone number

Emergency telephone number : 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) as amended by GB-CLP Regulation, UK SI 2019/720, and UK SI 2020/1567)

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.
Long-term (chronic) aquatic hazard, Category 2	H411: Toxic to aquatic life with long lasting effects.

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1.6	18.09.2024	400001021217	Date of first issue: 20.07.2018

Print Date 08.05.2025

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008) as amended by GB-CLP Regulation, UK SI 2019/720, and UK SI 2020/1567)

Hazard pictograms



Signal word

: Warning

Hazard statements

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.

Precautionary statements

P101	If medical advice is needed, have product container or label at hand.
P102	Keep out of reach of children.
P103	Read carefully and follow all instructions.

Prevention:

P273	Avoid release to the environment.
P280	Wear protective gloves/ eye protection/ face protection.

Response:

P391	Collect spillage.
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Disposal:

P501	Dispose of contents/ container to an approved facility in accordance with local, regional, national and international regulations.
------	--

Hazardous components which must be listed on the label:

bis-[4-(2,3-epoxipropoxy)phenyl]propane
Reaction mass of 2,2'-[methylenebis(2,1-phenyleneoxymethylene)]bis(oxirane) and 2,2'-[methylenebis(4,1-phenyleneoxymethylene)]bis(oxirane) and 2-({2-[4-(oxiran-2-ylmethoxy)benzyl]phenoxy)methyl}oxirane
bisphenol A - epoxy resins, number average MW >700 - <1100

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.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Hazardous components

Chemical name	CAS-No.	Classification	Concent
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	EC-No. Index-No. Registration number		ration (% w/w)
bis-[4-(2,3-epoxipropoxy)phenyl]propane	1675-54-3 216-823-5 603-073-00-2	Skin Irrit. 2; H315 Eye Irrit. 2; H319 Skin Sens. 1; H317 Aquatic Chronic 2; H411 specific concentration limit Eye Irrit. 2; H319 >= 5 % Skin Irrit. 2; H315 >= 5 %	>= 70 - < 90
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	- -	Skin Irrit. 2; H315 Skin Sens. 1A; H317 Aquatic Chronic 2; H411	>= 2.5 - < 10
bisphenol A - epoxy resins, number average MW >700 - <1100	25068-38-6 Polymer	Skin Irrit. 2; H315 Eye Irrit. 2; H319 Skin Sens. 1; H317	>= 1 - < 10
Substances with a workplace exposure limit :			
Silica, amorphous, fumed, cryst.-free	112945-52-5 -		>= 1 - < 10

For explanation of abbreviations see section 16.

Both 25068-38-6 and 1675-54-3 can be used to describe the epoxy resin which is produced through the reaction of bisphenol A and epichlorohydrin

SECTION 4: First aid measures

4.1 Description of first aid measures

- General advice : Move out of dangerous area.
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.

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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 | : | Keep respiratory tract clear.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician. |

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. |
|-------|---|---|

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 (CO ₂)
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
Phenolics |

5.3 Advice for firefighters

- | | | |
|---|---|---|
| Special protective equipment for firefighters | : | 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 |

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Print Date 08.05.2025

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 sensitisation of susceptible persons.
Persons suffering from asthma, eczema or skin problems should avoid contact, including dermal contact, with this product.
Do not breathe vapours/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.

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Date of first issue: 20.07.2018

Print Date 08.05.2025

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. Keep in properly labelled containers.

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

Recommended storage temperature : 2 - 40 °C

Further information on storage stability : Stable under normal conditions.

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
Silica, amorphous, fumed, cryst.-free	112945-52-5	TWA (inhalable dust)	6 mg/m ³ (Silica)	GB EH40
		TWA (Respirable dust)	2.4 mg/m ³ (Silica)	GB EH40

Derived No Effect Level (DNEL)

Substance name	End Use	Exposure routes	Potential health effects	Value
bis-[4-(2,3-epoxipropoxy)phenyl]p ropane	Workers	Inhalation	Long-term systemic effects	4.93 mg/m ³
	Workers	Dermal	Long-term systemic effects	0.75 mg/kg bw/day
	Consumers	Inhalation	Long-term systemic effects	0.87 mg/m ³
	Consumers	Dermal	Long-term systemic effects	0.0893 mg/kg bw/day
	Consumers	Oral	Long-term systemic effects	0.5 mg/kg bw/day
bisphenol A - epoxy resins, number average MW >700 - <1100	Workers	Dermal	Systemic effects	
	Workers	Inhalation	Systemic effects	12.25 mg/m ³
	Workers	Dermal	Systemic effects	

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	Workers	Inhalation	Systemic effects	12.25 mg/m3
	Consumers	Dermal	Systemic effects	
	Consumers	Oral	Systemic effects	
	Consumers	Dermal	Systemic effects	
	Consumers	Oral	Systemic effects	
bis(2-ethylhexyl) adipate	Workers	Inhalation	Long-term systemic effects	17.8 mg/m3
	Workers	Dermal	Long-term systemic effects	25.5 mg/kg bw/day
	Consumers	Inhalation	Long-term systemic effects	4.4 mg/m3
	Consumers	Dermal	Long-term systemic effects	13 mg/kg bw/day
	Consumers	Oral	Long-term systemic effects	1.7 mg/kg bw/day
Reaction mass of 2,2'-[methylenebis(2,1-phenyleneoxymethylene)]bis(oxirane) and 2,2'-[methylenebis(4,1-phenyleneoxymethylene)]bis(oxirane) and 2-({2-[4-(oxiran-2-ylmethoxy)benzyl]phenoxy)methyl}oxirane	Workers	Dermal	Acute local effects	0.0083 mg/cm2
	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
Silica, amorphous, fumed, cryst.-free	Workers	Inhalation	Long-term systemic effects	4 mg/m3
reaction product: bisphenol a-(epichlorhydrin); epoxy resin (number average molecular weight > 1100)	Workers	Dermal	Systemic effects, Short-term exposure	8.33 mg/kg bw/day
	Workers	Inhalation	Systemic effects, Short-term exposure	12.25 mg/m3
	Workers	Dermal	Systemic effects, Long-term exposure	8.33 mg/kg bw/day
	Workers	Inhalation	Systemic effects, Long-term exposure	12.25 mg/m3
	Consumers	Dermal	Systemic effects, Short-term exposure	3.571 mg/kg bw/day
	Consumers	Oral	Systemic effects,	0.75 mg/kg

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			Short-term exposure	bw/day
	Consumers	Dermal	Systemic effects, Long-term exposure	3.571 mg/kg bw/day
	Consumers	Oral	Systemic effects, Long-term exposure	0.75 mg/kg bw/day

Predicted No Effect Concentration (PNEC)

Substance name	Environmental Compartment	Value
25068-38-6	Fresh water	0.006 mg/l
	Remarks:Assessment Factors	
	Marine water	0.0006 mg/l
	Remarks:Assessment Factors	
	Freshwater - intermittent	0.018 mg/l
	Remarks:Assessment Factors	
	Fresh water sediment	0.996 mg/kg
	Remarks:Equilibrium method	
	Marine sediment	0.0996 mg/kg
	Remarks:Equilibrium method	
	Soil	0.196 mg/kg
	Remarks:Equilibrium method	
	Sewage treatment plant	10 mg/l
	Remarks:Assessment Factors	
	Secondary Poisoning	11 mg/kg

8.2 Exposure controls

Personal protective equipment

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 : Solvent-resistant gloves (butyl-rubber)

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

Material : Neoprene gloves

Remarks : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. The suitability for a specific workplace should be discussed with the producers of the protective gloves.

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

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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 vapour type (A-P)

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	: liquid
Colour	: light cream
Odour	: slight
Odour Threshold	: No data is available on the product itself.
Melting point/freezing point	: No data is available on the product itself.
Boiling point	: No data is available on the product itself.
Flammability (solid, gas)	: 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	: 210 °C Method: Pensky-Martens closed cup
Auto-ignition temperature	: No data is available on the product itself.
Decomposition temperature	: No data is available on the product itself.
pH	: 6 Concentration: 500 g/l
Viscosity	: No data is available on the product itself.
Solubility(ies)	
Water solubility	: practically insoluble
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.

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Vapour pressure	: 0.0001 kPa
Density	: 1.15 g/cm ³ (25 °C)
Relative density	: No data is available on the product itself.
Relative vapour 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 : None known.

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:

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

Acute oral toxicity : LD50 (Rat, female): > 2,000 mg/kg
Method: OECD Test Guideline 420
Assessment: The substance or mixture has no acute oral toxicity
Remarks: No mortality observed at this dose.

Acute dermal toxicity : LD50 (Rat, male and female): > 2,000 mg/kg

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Method: OECD Test Guideline 402
Assessment: The substance or mixture has no acute dermal toxicity

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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

bisphenol A - epoxy resins, number average MW >700 - <1100:

Acute oral toxicity : LD50 (Rat, female): > 2,000 mg/kg
Method: OECD Test Guideline 420
Assessment: The substance or mixture has no acute oral toxicity

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

Silica, amorphous, fumed, cryst.-free:

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

Acute inhalation toxicity : LC50 (Rat, male and female): > 58.8 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403

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

Skin corrosion/irritation

Causes skin irritation.

Components:

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

Species : Rabbit
Exposure time : 4 h
Assessment : Irritating to skin.
Method : OECD Test Guideline 404
Result : Irritating to skin.

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

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

bisphenol A - epoxy resins, number average MW >700 - <1100:

Method	:	OECD Test Guideline 404
Result	:	Skin irritation

Silica, amorphous, fumed, cryst.-free:

Species	:	Rabbit
Assessment	:	No skin irritation
Method	:	OECD Test Guideline 404
Result	:	No skin irritation

Serious eye damage/eye irritation

Causes serious eye irritation.

Components:

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

Species	:	Rabbit
Assessment	:	Irritating to eyes.
Method	:	OECD Test Guideline 405
Result	:	Irritating to eyes.

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

bisphenol A - epoxy resins, number average MW >700 - <1100:

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

Silica, amorphous, fumed, cryst.-free:

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

Respiratory or skin sensitisation

Skin sensitisation

May cause an allergic skin reaction.

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Respiratory sensitisation

Not classified due to lack of data.

Components:

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

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 1B.

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.

bisphenol A - epoxy resins, number average MW >700 - <1100:

Exposure routes	: Skin
Species	: Guinea pig
Method	: OECD Test Guideline 406
Result	: May cause sensitisation by skin contact.

Germ cell mutagenicity

Not classified due to lack of data.

Components:

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

Genotoxicity in vitro	: Test Type: In vitro mammalian cell gene mutation test Test system: mouse lymphoma cells Metabolic activation: without metabolic activation Result: positive
	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: in vivo assay Species: Mouse (male) Cell type: Germ Application Route: Oral Dose: 3333, 10000 mg/kg Result: negative
	Test Type: gene mutation test Species: Rat (male)

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Cell type: Somatic
Application Route: Oral
Dose: 50,250,500,1000 mg/kg bw/day
Method: OECD Test Guideline 488
Result: negative

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

bisphenol A - epoxy resins, number average MW >700 - <1100:

Genotoxicity in vitro : Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 476
Result: Positive results were obtained in some in vitro tests.

Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative

Genotoxicity in vivo : Cell type: Germ
Application Route: Oral
Method: OECD Test Guideline 478
Result: negative

Cell type: Somatic
Application Route: Oral
Dose: 0 - 5000 mg/kg
Method: OPPTS 870.5395
Result: negative

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Silica, amorphous, fumed, cryst.-free:

Genotoxicity in vitro : Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 473
Result: negative

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

Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative

Genotoxicity in vivo : Application Route: Inhalation
Dose: 50 mg/m³
Result: negative

Carcinogenicity

Not classified due to lack of data.

Components:

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

Species : Rat, male
Application Route : Oral
Exposure time : 24 month(s)
Dose : 0, 2, 15, or 100 mg/kg bw/day
Frequency of Treatment : 7 days/week
NOAEL : 15 mg/kg bw/day
Method : OECD Test Guideline 453
Result : negative
Target Organs : Digestive organs

Species : Mouse, male
Application Route : Dermal
Exposure time : 24 month(s)
Dose : 0, 0.1, 10, 100 mg/kg bw/day
Frequency of Treatment : 3 days/week
NOEL : 0.1 mg/kg body weight
Method : OECD Test Guideline 453
Result : negative
Target Organs : Digestive organs

Species : Rat, female
Application Route : Dermal
Exposure time : 24 month(s)
Dose : 0.1, 100, 1000 mg/kg bw/day
Frequency of Treatment : 5 days/week
NOEL : 100 mg/kg body weight
Method : OECD Test Guideline 453
Result : negative

Species : Rat, female
Application Route : Oral
Exposure time : 24 month(s)

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Dose : 0, 2, 15, or 100 mg/kg bw/day
Frequency of Treatment : 7 days/week
NOAEL : 100 mg/kg bw/day
Method : OECD Test Guideline 453
Result : negative
Target Organs : Digestive organs

Species : Rat, females
Application Route : Oral
Exposure time : 24 month(s)
Dose : 0, 2, 15, or 100 mg/kg bw/day
Frequency of Treatment : 7 days/week
NOEL : 2 mg/kg bw/day
Method : OECD Test Guideline 453
Result : negative
Target Organs : Digestive organs

bisphenol A - epoxy resins, number average MW >700 - <1100:

Species : Rat, male and female
Application Route : Oral
Exposure time : 24 month(s)
Dose : 15 mg/kg
Frequency of Treatment : 7 daily
Method : OECD Test Guideline 453
Result : negative

Silica, amorphous, fumed, cryst.-free:

Species : Rat, male and female
Application Route : Oral
Exposure time : 103 weeks
Dose : 1800 - 3200 mg/kg
Frequency of Treatment : 7 daily
Method : OECD Test Guideline 453
Result : negative

Reproductive toxicity

Not classified due to lack of data.

Components:

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

Effects on fertility : Test Type: Two-generation study
Species: Rat, male and female
Application Route: Oral
Dose: 0, 50, 180, 540 or 750 milligram per kilogram
Duration of Single Treatment: 238 d
Frequency of Treatment: 1 daily
General Toxicity - Parent: NOEL: 540 mg/kg body weight
General Toxicity F1: NOEL: 750 mg/kg body weight
Symptoms: No adverse effects
Method: OECD Test Guideline 416
Result: No effects on fertility and early embryonic development were detected.

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Effects on foetal development : Species: Rabbit, female
Application Route: Dermal
Dose: 0, 30, 100 or 300 milligram per kilogram
Duration of Single Treatment: 28 d
Frequency of Treatment: 1 daily
General Toxicity Maternal: NOAEL: 30 mg/kg body weight
Developmental Toxicity: NOAEL: 300 mg/kg body weight
Method: Other guidelines
Result: No teratogenic effects

Test Type: Pre-natal
Species: Rabbit, female
Application Route: Oral
Dose: 0, 20, 60 or 180 milligram per kilogram
Duration of Single Treatment: 13 d
Frequency of Treatment: 1 daily
General Toxicity Maternal: NOAEL: 60 mg/kg body weight
Developmental Toxicity: NOAEL: 180 mg/kg body weight
Method: OECD Test Guideline 414
Result: No teratogenic effects

Test Type: Pre-natal
Species: Rat, female
Application Route: Oral
Dose: 0, 60, 180 and 540 milligram per kilogram
Duration of Single Treatment: 10 d
Frequency of Treatment: 1 daily
General Toxicity Maternal: NOAEL: 180 mg/kg body weight
Developmental Toxicity: NOAEL: > 540 mg/kg body weight
Method: OECD Test Guideline 414
Result: No teratogenic effects

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.

bisphenol A - epoxy resins, number average MW >700 - <1100:

Effects on fertility : Species: Rat, male and female
Application Route: Oral
General Toxicity - Parent: NOEL: 750 mg/kg body weight

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General Toxicity F1: NOEL: 750 mg/kg body weight
Method: OECD Test Guideline 416
Result: No effects on fertility and early embryonic development were detected.

Effects on foetal development

: Species: Rabbit, female
Application Route: Dermal
General Toxicity Maternal: NOAEL: 30 mg/kg body weight
Method: Other guidelines
Result: No teratogenic effects

Species: Rabbit, female
Application Route: Oral
General Toxicity Maternal: NOAEL: 60 mg/kg body weight
Method: OECD Test Guideline 414
Result: No teratogenic effects

Species: Rat, female
Application Route: Oral
General Toxicity Maternal: NOAEL: 180 mg/kg body weight
Method: OECD Test Guideline 414
Result: No teratogenic effects

Silica, amorphous, fumed, cryst.-free:

Effects on foetal development

: Species: Mouse
Application Route: Oral
General Toxicity Maternal: NOAEL: 1,340 mg/kg body weight
Method: OECD Test Guideline 414
Result: No teratogenic effects

Species: Rabbit
Application Route: Oral
General Toxicity Maternal: NOAEL: 1,600 mg/kg body weight
Method: OECD Test Guideline 414
Result: No teratogenic effects

Species: Rat
Application Route: Oral
General Toxicity Maternal: NOAEL: 1,350 mg/kg body weight
Method: OECD Test Guideline 414
Result: No teratogenic effects

STOT - single exposure

Not classified due to lack of data.

STOT - repeated exposure

Not classified due to lack of data.

Repeated dose toxicity

Components:

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

Species : Rat, male and female
NOAEL : 50 mg/kg

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Application Route : oral (gavage)
Exposure time : 14 Weeks
Number of exposures : 7 d
Dose : 0, 50, 250, 1000 mg/kg/day
Method : OECD Test Guideline 408

Species : Rat, male and female
NOAEL : ≥ 10 mg/kg
Application Route : Skin contact
Exposure time : 13 Weeks
Number of exposures : 5 d
Dose : 0, 10, 100, 1000 mg/kg/day
Method : OECD Test Guideline 411

Species : Mouse, male
NOAEL : 100 mg/kg
Application Route : Skin contact
Exposure time : 13 Weeks
Number of exposures : 3 d
Dose : 0, 1, 10, 100 mg/kg/day
Method : OECD Test Guideline 411

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

bisphenol A - epoxy resins, number average MW >700 - <1100:

Species : Rat, male and female
NOAEL : 50 mg/kg
Application Route : Ingestion
Exposure time : 14 Weeks
Number of exposures : 7 d
Method : Subchronic toxicity

Species : Rat, male and female
NOEL : 10 mg/kg
Application Route : Skin contact
Exposure time : 13 Weeks
Number of exposures : 5 d
Method : Subchronic toxicity

Silica, amorphous, fumed, cryst.-free:

Species : Rat, male and female
NOAEL : 7950 - 8980 mg/kg
Application Route : Ingestion
Exposure time : 4,320 h
Number of exposures : 7 d

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Method	:	Subchronic toxicity
Species	:	Rat, male and female
NOEC	:	4000 - 4500 mg/m3
Application Route	:	Ingestion
Test atmosphere	:	dust/mist
Exposure time	:	13 Weeks
Number of exposures	:	7 d
Method	:	OECD Test Guideline 413

Aspiration toxicity

Not classified due to lack of data.

11.2 Information on other hazards

Endocrine disrupting properties

Product:

Assessment : This substance/mixture does not contain components considered to have endocrine disrupting properties for human health according to UK REACH Article 57(f),

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:

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

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 2 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203

Toxicity to daphnia and other : EC50 (Daphnia magna (Water flea)): 1.8 mg/l
aquatic invertebrates
Exposure time: 48 h
Test Type: static test
Test substance: Fresh water
Method: OECD Test Guideline 202

Toxicity to algae/aquatic : EC50 : 11 mg/l
plants
Exposure time: 72 h
Test Type: static test
Test substance: Fresh water
Method: EPA-660/3-75-009

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NOEC : 4.2 mg/l
Exposure time: 72 h
Test Type: static test
Test substance: Fresh water
Method: EPA-660/3-75-009

Toxicity to microorganisms : IC50 (activated sludge): > 100 mg/l
Exposure time: 3 h
Test Type: static test
Test substance: Fresh water

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
Test substance: Fresh water
Method: OECD Test Guideline 211

Ecotoxicology Assessment

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

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

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Test substance: Fresh water
Method: OECD Test Guideline 211
GLP: yes
Remarks: Information given is based on data obtained from similar substances.

bisphenol A - epoxy resins, number average MW >700 - <1100:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): > 100 mg/l
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 magna (Water flea)): > 100 mg/l
Exposure time: 48 h
Test Type: static test
Test substance: Fresh water
Method: OECD Test Guideline 202

Toxicity to algae/aquatic plants : EgC50 (Selenastrum capricornutum (green algae)): > 100 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201

Silica, amorphous, fumed, cryst.-free:

Toxicity to fish : LL50 (Brachydanio rerio (zebrafish)): > 10,000 mg/l
Exposure time: 96 h
Test Type: static test
Test substance: Fresh water
Method: OECD Test Guideline 202

Toxicity to daphnia and other aquatic invertebrates : EL50 (Daphnia magna (Water flea)): >= 1,000 mg/l
Exposure time: 24 h
Test Type: static test
Test substance: Fresh water
Method: OECD Test Guideline 202

Toxicity to algae/aquatic plants : EL50 (Desmodesmus subspicatus (green algae)): > 10,000 mg/l
Exposure time: 72 h
Test Type: static test
Test substance: Fresh water
Method: OECD Test Guideline 201

12.2 Persistence and degradability

Components:

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

Biodegradability : Test Type: aerobic
Inoculum: activated sludge, non-adapted
Concentration: 20 mg/l
Result: Not readily biodegradable.
Biodegradation: 5 %

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Exposure time: 28 d
Method: OECD Test Guideline 301F

Stability in water : Degradation half life (DT50): 4.83 d (25 °C)
pH: 4
Method: OECD Test Guideline 111
Remarks: Fresh water

Degradation half life (DT50): 7.1 d (25 °C)
pH: 9
Method: OECD Test Guideline 111
Remarks: Fresh water

Degradation half life (DT50): 3.58 d (25 °C)
pH: 7
Method: OECD Test Guideline 111
Remarks: Fresh water

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.

bisphenol A - epoxy resins, number average MW >700 - <1100:

Biodegradability : Test Type: aerobic
Inoculum: Sewage (STP effluent)
Concentration: 20 mg/l
Result: Not biodegradable
Biodegradation: 5 %
Exposure time: 28 d
Method: OECD Test Guideline 301F

Stability in water : Degradation half life (DT50): 4.83 d (25 °C)
pH: 4
Method: OECD Test Guideline 111
Remarks: Fresh water

Degradation half life (DT50): 7.1 d (25 °C)
pH: 9
Method: OECD Test Guideline 111
Remarks: Fresh water

Degradation half life (DT50): 3.58 d (25 °C)
pH: 7
Method: OECD Test Guideline 111
Remarks: Fresh water

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12.3 Bioaccumulative potential

Components:

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

Bioaccumulation : Bioconcentration factor (BCF): 31
Remarks: Does not bioaccumulate.

Partition coefficient: n-octanol/water : log Pow: 3.242 (25 °C)
pH: 7.1
Method: OECD Test Guideline 117

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

bisphenol A - epoxy resins, number average MW >700 - <1100:

Bioaccumulation : Species: Fish
Bioconcentration factor (BCF): 31
Remarks: Does not bioaccumulate.

12.4 Mobility in soil

Components:

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

Distribution among environmental compartments : Koc: 445

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

bisphenol A - epoxy resins, number average MW >700 - <1100:

Distribution among environmental compartments : Koc: 445

12.5 Results of PBT and vPvB assessment

Product:

Assessment : 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.

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12.6 Other adverse effects

Product:

Endocrine disrupting potential : This substance/mixture does not contain components considered to have endocrine disrupting properties for environment according to UK REACH Article 57(f).

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.

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

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

ADR : UN 3082
RID : UN 3082
IMDG : UN 3082
IATA : UN 3082

14.2 UN proper shipping name

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

RID : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(BISPHENOL A EPOXY RESIN, BISPHENOL F EPOXY RESIN)

IMDG : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(BISPHENOL A EPOXY RESIN, BISPHENOL F EPOXY RESIN)

IATA : Environmentally hazardous substance, liquid, n.o.s.

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(BISPHENOL A EPOXY RESIN, BISPHENOL F EPOXY RESIN)

14.3 Transport hazard class(es)

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

14.4 Packing group

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

ADR	
Environmentally hazardous	: yes
RID	
Environmentally hazardous	: yes
IMDG	
Marine pollutant	: yes
IATA (Passenger)	
Environmentally hazardous	: yes

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IATA (Cargo)

Environmentally hazardous : yes

14.6 Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

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

Relevant EU provisions transposed through retained EU law

UK REACH List of restrictions (Annex 17)	:	Conditions of restriction for the following entries should be considered: Number on list 3
UK REACH Candidate list of substances of very high concern (SVHC) for Authorisation	:	This product does not contain substances of very high concern.
UK REACH List of substances subject to authorisation (Annex XIV)	:	Not applicable

Other regulations:

Take note of The Management of Health and Safety at Work Regulations 1999 (requirements relating to protection of young people at work contained in Regulation 19) and of Directive 94/33/EC on the protection of young people at work.

The components of this product are reported in the following inventories:

DSL	:	All components of this product are on the Canadian DSL
AIIC	:	On the inventory, or in compliance with the inventory
ENCS	:	On the inventory, or in compliance with the inventory
KECI	:	On the inventory, or in compliance with the inventory
PICCS	:	On the inventory, or in compliance with the inventory
IECSC	:	On the inventory, or in compliance with the inventory

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TCSI : On the inventory, or in compliance with the inventory

TSCA : All substances listed as active on the TSCA inventory

Inventories

AICS (Australia), AIIIC (Australia), DSL (Canada), IECSC (China), ENCS (Japan), KECI (Korea), NZIOC (New Zealand), PICCS (Philippines), TCSI (Taiwan), TSCA (United States of America (USA))

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

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.

Full text of other abbreviations

Aquatic Chronic	: Long-term (chronic) aquatic hazard
Eye Irrit.	: Eye irritation
Skin Irrit.	: Skin irritation
Skin Sens.	: Skin sensitisation
GB EH40	: UK. EH40 WEL - Workplace Exposure Limits
GB EH40 / TWA	: Long-term exposure limit (8-hour TWA reference period)

Further information

Classification of the mixture:

Skin Irrit. 2	H315
Eye Irrit. 2	H319
Skin Sens. 1	H317
Aquatic Chronic 2	H411

Classification procedure:

Calculation method
Calculation method
Calculation method
Calculation method

While 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.

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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.

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

1.1 Product identifier

Trade name : ARALDITE® STANDARD ULTRA HARDENER

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

Use of the : Hardener
Substance/Mixture

1.3 Details of the supplier of the safety data sheet

Company : HUNTSMAN ADVANCED MATERIALS (UK) LIMITED
Address : Ickleton Road, Duxford, Cambridgeshire
CB22 4XQ United Kingdom
Telephone : +41 61 299 20 41
E-mail address of person : Global_Product_EHS_AdMat@huntsman.com
responsible for the SDS

1.4 Emergency telephone number

Emergency telephone number : 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) as amended by GB-CLP Regulation, UK SI 2019/720, and UK SI 2020/1567)

Serious eye damage, Category 1	H318: Causes serious eye damage.
Skin sensitisation, Category 1	H317: May cause an allergic skin reaction.
Long-term (chronic) aquatic hazard, Category 2	H411: Toxic to aquatic life with long lasting effects.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008) as amended by GB-CLP Regulation, UK SI 2019/720, and UK SI 2020/1567)

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Hazard pictograms :



Signal word : Danger

Hazard statements :
H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.
H411 Toxic to aquatic life with long lasting effects.

Precautionary statements :
P101 If medical advice is needed, have product container or label at hand.
P102 Keep out of reach of children.
P103 Read carefully and follow all instructions.

Prevention:

P273 Avoid release to the environment.
P280 Wear protective gloves/ eye protection/ face protection.

Response:

P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor.
P391 Collect spillage.

Disposal:

P501 Dispose of contents/ container to an approved facility in accordance with local, regional, national and international regulations.

Hazardous components which must be listed on the label:

Reaction products of fatty acid dimers and trimers, C18 (unsaturated) alkyl and fatty acids,
C18 (unsaturated) alkyl with amines, polyethylenepoly-, triethylenetetramine fraction
Fatty acids, C18-unsatd., dimers, polymers with oleic acid and triethylenetetramine
Amines, polyethylenepoly-, tetraethylenepentamine fraction
Amines, polyethylenepoly-, triethylenetetramine fraction

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.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Hazardous components

Chemical name	CAS-No. EC-No.	Classification	Concentration
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	Index-No. Registration number		(% w/w)
Reaction products of fatty acid dimers and trimers, C18 (unsaturated) alkyl and fatty acids, C18 (unsaturated) alkyl with amines, polyethylenepoly-, triethylenetetramine fraction	- -	Skin Irrit. 2; H315 Eye Dam. 1; H318 Skin Sens. 1A; H317 Aquatic Chronic 2; H411	≥ 50 - < 70
Fatty acids, C18-unsatd., dimers, polymers with oleic acid and triethylenetetramine	68154-62-1 Polymer	Skin Irrit. 2; H315 Eye Irrit. 2; H319 Skin Sens. 1; H317 Aquatic Chronic 3; H412	≥ 30 - < 50
Amines, polyethylenepoly-, tetraethylenepentamine fraction	90640-66-7 292-587-7	Acute Tox. 4; H312 Skin Corr. 1B; H314 Eye Dam. 1; H318 Skin Sens. 1; H317 Aquatic Chronic 2; H411	≥ 5 - < 10
Amines, polyethylenepoly-, triethylenetetramine fraction	90640-67-8 292-588-2	Acute Tox. 4; H302 Acute Tox. 4; H312 Skin Corr. 1B; H314 Eye Dam. 1; H318 Skin Sens. 1; H317 Aquatic Chronic 3; H412	≥ 0.25 - < 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.

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- In case of eye contact : Small amounts splashed into eyes can cause irreversible tissue damage and blindness.
In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Continue rinsing eyes during transport to hospital.
Remove contact lenses.
Keep eye wide open while rinsing.
If eye irritation persists, consult a specialist.
- If swallowed : 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 : May cause an allergic skin reaction.
Causes serious eye damage.

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
Nitrogen oxides (NO_x)

5.3 Advice for firefighters

- Special protective equipment for firefighters : 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.

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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 : Neutralise with acid.
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 sensitisation of susceptible persons.
Persons suffering from asthma, eczema or skin problems should avoid contact, including dermal contact, with this product.
Do not breathe vapours/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.
To avoid spills during handling keep bottle on a metal tray.
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.

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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. Keep in properly labelled containers.

Advice on common storage : Do not store near acids.

Recommended storage temperature : 2 - 40 °C

Further information on storage stability : Stable under normal conditions.

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

Contains no substances with occupational exposure limit values.

Derived No Effect Level (DNEL)

Substance name	End Use	Exposure routes	Potential health effects	Value
Amines, polyethylenepoly-, tetraethylenepentamine fraction	Workers	Inhalation	Long-term systemic effects	0.82 mg/m3
	Workers	Dermal	Long-term local effects	0.25 mg/cm2
	Consumers	Inhalation	Long-term systemic effects	0.14 mg/m3
	Consumers	Dermal	Long-term local effects	0.021 mg/cm2
	Consumers	Oral	Long-term systemic effects	0.21 mg/kg bw/day
Amines, polyethylenepoly-, triethylenetetramine fraction	Workers	Inhalation	Long-term systemic effects	0.54 mg/m3
	Consumers	Inhalation	Long-term systemic effects	0.096 mg/m3
	Consumers	Oral	Long-term systemic effects	14 mg/kg bw/day

Predicted No Effect Concentration (PNEC)

Substance name	Environmental Compartment	Value
Amines, polyethylenepoly-,	Fresh water	0.01 mg/l

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tetraethylenepentamine fraction		
	Remarks:Assessment Factors	
	Marine water	0.001 mg/l
	Remarks:Assessment Factors	
	Freshwater - intermittent	0.068 mg/l
	Remarks:Assessment Factors	
	Sewage treatment plant	4.6 mg/l
	Remarks:Assessment Factors	
	Fresh water sediment	3.198 mg/kg dry weight (d.w.)
	Remarks:Equilibrium method	
	Marine sediment	0.32 mg/kg dry weight (d.w.)
	Remarks:Equilibrium method	
	Soil	2.5 mg/kg dry weight (d.w.)
	Remarks:Assessment Factors	
Amines, polyethylenepoly-, triethylenetetramine fraction	Fresh water	0.027 mg/l
	Marine water	0.003 mg/l
	Sewage treatment plant	0.13 mg/l
	Fresh water sediment	8.572 mg/kg dry weight (d.w.)
	Marine sediment	0.857 mg/kg dry weight (d.w.)
	Soil	1.25 mg/kg dry weight (d.w.)

8.2 Exposure controls

Personal protective equipment

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

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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 ammonia/amines type (K-P)

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	:	liquid
Colour	:	yellow
Odour	:	No data is available on the product itself.
Odour Threshold	:	No data is available on the product itself.
Melting point/freezing point	:	No data is available on the product itself.
Boiling point	:	No data is available on the product itself.
Flammability (solid, gas)	:	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	:	> 150 °C Method: Pensky-Martens closed cup
Auto-ignition temperature	:	No data is available on the product itself.
Decomposition temperature	:	No data is available on the product itself.
pH	:	11 Concentration: 500 g/l
Viscosity	:	
Viscosity, dynamic	:	25,000 - 30,000 mPa.s (25 °C)

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Solubility(ies)
Water solubility : practically insoluble (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.

Vapour pressure : No data is available on the product itself.

Density : 0.97 g/cm³ (25 °C)

Relative density : No data is available on the product itself.

Relative vapour 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 : None known.

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.

Product:

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Acute dermal toxicity : Acute toxicity estimate: > 2,000 mg/kg
Method: Calculation method

Components:

Reaction products of fatty acid dimers and trimers, C18 (unsaturated) alkyl and fatty acids, C18 (unsaturated) alkyl with amines, polyethylenepoly-, triethylenetetramine fraction:

Acute oral toxicity : LD50 (Rat, female): > 2,000 mg/kg
Method: OECD Test Guideline 423
Assessment: The substance or mixture has no acute oral toxicity

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

Amines, polyethylenepoly-, tetraethylenepentamine fraction:

Acute oral toxicity : LD50 (Rat, male): 3,221 mg/kg
Method: Calculation method
Assessment: The component/mixture is minimally toxic after single ingestion.

Acute dermal toxicity : LD50 (Rabbit, male and female): 1,260 mg/kg
Method: OECD Test Guideline 402

Amines, polyethylenepoly-, triethylenetetramine fraction:

Acute oral toxicity : LD50 (Rat, male and female): 1,716.2 mg/kg
Method: OECD Test Guideline 401
Assessment: The component/mixture is moderately toxic after single ingestion.

Acute dermal toxicity : LD50 (Rabbit, male and female): 1,465.4 mg/kg
Method: OECD Test Guideline 402
Assessment: The component/mixture is moderately toxic after single contact with skin.

Skin corrosion/irritation

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

Product:

Species : Rabbit
Method : OECD Test Guideline 404
Result : Mild skin irritation
GLP : yes

Components:

Reaction products of fatty acid dimers and trimers, C18 (unsaturated) alkyl and fatty acids, C18 (unsaturated) alkyl with amines, polyethylenepoly-, triethylenetetramine fraction:

Species : human skin
Assessment : May cause eye and skin irritation.
Method : OECD Test Guideline 431

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Result : May cause eye and skin irritation.

Species : human skin
Assessment : Irritant
Method : OECD Test Guideline 439
Result : Irritating to skin.

Fatty acids, C18-unsatd., dimers, polymers with oleic acid and triethylenetetramine:

Assessment : Irritating to skin.

Amines, polyethylenepoly-, tetraethylenepentamine fraction:

Species : reconstructed human epidermis (RhE)
Assessment : Causes burns.
Method : OECD Test Guideline 435
Result : Corrosive after 3 minutes to 1 hour of exposure
GLP : yes

Amines, polyethylenepoly-, triethylenetetramine fraction:

Species : reconstructed human epidermis (RhE)
Assessment : Causes burns.
Method : OECD Test Guideline 435
Result : Corrosive after 3 minutes to 1 hour of exposure

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 damage.

Product:

Species : Rabbit
Assessment : Corrosive
Method : OECD Test Guideline 405
Result : Irreversible effects on the eye
GLP : yes

Remarks : May cause irreversible eye damage.

Components:

Reaction products of fatty acid dimers and trimers, C18 (unsaturated) alkyl and fatty acids, C18 (unsaturated) alkyl with amines, polyethylenepoly-, triethylenetetramine fraction:

Species : Rabbit
Method : OECD Test Guideline 405
Result : Corrosive

Fatty acids, C18-unsatd., dimers, polymers with oleic acid and triethylenetetramine:

Assessment : Irritating to eyes.

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Amines, polyethylenepoly-, tetraethylenepentamine fraction:

Assessment	: Risk of serious damage to eyes.
Result	: Risk of serious damage to eyes.

Amines, polyethylenepoly-, triethylenetetramine fraction:

Species	: Rabbit
Assessment	: Risk of serious damage to eyes.
Method	: OECD Test Guideline 405
Result	: Irreversible effects on the eye

Respiratory or skin sensitisation

Skin sensitisation

May cause an allergic skin reaction.

Respiratory sensitisation

Not classified due to lack of data.

Components:

Reaction products of fatty acid dimers and trimers, C18 (unsaturated) alkyl and fatty acids, C18 (unsaturated) alkyl with amines, polyethylenepoly-, triethylenetetramine fraction:

Exposure routes	: Skin
Species	: Mouse
Method	: OECD Test Guideline 429
Result	: The product is a skin sensitiser, sub-category 1A.

Fatty acids, C18-unsatd., dimers, polymers with oleic acid and triethylenetetramine:

Assessment	: May cause sensitisation by skin contact.
------------	--

Amines, polyethylenepoly-, tetraethylenepentamine fraction:

Assessment	: May cause sensitisation by skin contact.
Result	: May cause sensitisation by skin contact.

Amines, polyethylenepoly-, triethylenetetramine fraction:

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

Germ cell mutagenicity

Not classified due to lack of data.

Components:

Reaction products of fatty acid dimers and trimers, C18 (unsaturated) alkyl and fatty acids, C18 (unsaturated) alkyl with amines, polyethylenepoly-, triethylenetetramine fraction:

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

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

Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 487
Result: negative

Amines, polyethylenepoly-, tetraethylenepentamine fraction:

Genotoxicity in vitro : Test Type: reverse mutation assay
Test system: Salmonella typhimurium
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: positive

Test Type: sister chromatid exchange assay
Test system: Chinese hamster ovary cells
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 479
Result: positive

Test Type: gene mutation test
Test system: Chinese hamster ovary cells
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 476
Result: positive

Test Type: Micronucleus test
Test system: Human lymphocytes
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 487
Result: negative

Genotoxicity in vivo : Test Type: In vivo micronucleus test
Species: Mouse (male and female)
Cell type: Bone marrow
Application Route: Intraperitoneal injection
Dose: 185/370/600 mg/kg
Method: OECD Test Guideline 474
Result: negative
Remarks: Information given is based on data obtained from similar substances.

Amines, polyethylenepoly-, triethylenetetramine fraction:

Genotoxicity in vitro : Test Type: reverse mutation assay
Test system: Salmonella tryphimurium and E. coli
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: positive
GLP: yes

Test Type: Micronucleus test
Test system: Human lymphocytes
Metabolic activation: with and without metabolic activation

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Method: OECD Test Guideline 487

Result: negative

Genotoxicity in vivo : Test Type: In vivo micronucleus test
Species: Mouse (male and female)
Cell type: Bone marrow
Application Route: Intraperitoneal injection
Dose: 0 - 600 mg/kg
Method: OECD Test Guideline 474
Result: negative

Carcinogenicity

Not classified due to lack of data.

Components:

Amines, polyethylenepoly-, triethylenetetramine fraction:

Species : Mouse, male
Application Route : Dermal
NOAEL : ≥ 50 mg/kg bw/day
Method : OECD Test Guideline 451
Result : negative

Species : Mouse, male
Application Route : Dermal
Exposure time : 104 weeks
NOAEL : ≥ 20 mg/kg bw/day
Method : OECD Test Guideline 451
Result : negative

Reproductive toxicity

Not classified due to lack of data.

Components:

Reaction products of fatty acid dimers and trimers, C18 (unsaturated) alkyl and fatty acids, C18 (unsaturated) alkyl with amines, polyethylenepoly-, triethylenetetramine fraction:

Effects on fertility : Species: Rat, male and female
Application Route: Oral
Method: OECD Test Guideline 422
Result: Animal testing did not show any effects on fertility.

Amines, polyethylenepoly-, tetraethylenepentamine fraction:

Effects on foetal development : Test Type: Pre-natal
Species: Rabbit, female
Application Route: Dermal
Dose: 5/50/125 mg/kg bw/d
Duration of Single Treatment: 13 d
General Toxicity Maternal: NOAEL: 50 mg/kg body weight
Developmental Toxicity: NOAEL: ≥ 125 mg/kg body weight
Method: OECD Test Guideline 414
Result: No teratogenic effects
Remarks: Information given is based on data obtained from similar substances.

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Test Type: Pre-natal
Species: Rat, female
Application Route: Oral
Dose: 75/325/750 mg/kg bw/d
Duration of Single Treatment: 10 d
General Toxicity Maternal: NOAEL: \geq 750 mg/kg body weight
Developmental Toxicity: NOAEL: \geq 750 mg/kg body weight
Method: OECD Test Guideline 414
Result: No teratogenic effects
Remarks: Information given is based on data obtained from similar substances.

Test Type: Pre-natal
Species: Rat, female
Application Route: Oral
Dose: 200/400/800 mg/kg bw/d
Duration of Single Treatment: 14 d
General Toxicity Maternal: NOEL: 200 mg/kg body weight
Developmental Toxicity: NOAEL: \geq 400 mg/kg body weight
Method: OECD Test Guideline 414
Result: No teratogenic effects
Remarks: Information given is based on data obtained from similar substances.

Amines, polyethylenepoly-, triethylenetetramine fraction:

Effects on foetal development : Test Type: Pre-natal
Species: Rat
Application Route: Oral
Dose: 75/325/750 mg/kg bw/day
Duration of Single Treatment: 10 d
General Toxicity Maternal: NOAEL: \geq 750 mg/kg body weight
Developmental Toxicity: NOAEL: \geq 750 mg/kg body weight
Method: OECD Test Guideline 414
Result: No teratogenic effects

Test Type: Pre-natal
Species: Rabbit
Application Route: Dermal
Dose: 5/50/125 mg/kg bw/day
Duration of Single Treatment: 13 d
General Toxicity Maternal: NOAEL: 50 mg/kg body weight
Developmental Toxicity: NOAEL: \geq 125 mg/kg body weight
Method: OECD Test Guideline 414
Result: No teratogenic effects

STOT - single exposure

Not classified due to lack of data.

STOT - repeated exposure

Not classified due to lack of data.

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Repeated dose toxicity

Components:

Reaction products of fatty acid dimers and trimers, C18 (unsaturated) alkyl and fatty acids, C18 (unsaturated) alkyl with amines, polyethylenepoly-, triethylenetetramine fraction:

Species	: Rat, male and female
NOAEL	: 1000 mg/kg
Application Route	: Ingestion
Exposure time	: 6 Weeks
Number of exposures	: 7 d
Method	: Subacute toxicity

Amines, polyethylenepoly-, tetraethylenepentamine fraction:

Species	: Rat, male and female
NOAEL	: 350 mg/kg/d
Application Route	: Oral
Exposure time	: 28 d
Dose	: 100/350/1200 mg/kg bw/day
Method	: OECD Test Guideline 407
Target Organs	: Lungs
Remarks	: Information given is based on data obtained from similar substances.

Species	: Rat, female
NOAEL	: 50 mg/kg
Application Route	: Oral
Exposure time	: 90 d
Dose	: 50/175/600 mg/kg bw/d
Method	: OECD Test Guideline 408
Target Organs	: Lungs
Remarks	: Information given is based on data obtained from similar substances.

Species	: Dog, male and female
NOAEL	: 125 mg/kg
Application Route	: Oral
Exposure time	: 28 d
Target Organs	: Lungs
Remarks	: Information given is based on data obtained from similar substances.

Species	: Rat, male and female
NOAEL	: 350 mg/kg
Application Route	: Oral
Exposure time	: 4 weeks
Number of exposures	: daily
Dose	: 100/350/1200 mg/kg bw/d
Method	: OECD Test Guideline 408
Remarks	: Information given is based on data obtained from similar substances.

Species	: Rat, male and female
NOAEL	: 600 - 3000 ppm
Application Route	: oral (drinking water)

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Exposure time : 92 days
Dose : 120/600/3000 ppm
Method : OECD Test Guideline 408
Remarks : Information given is based on data obtained from similar substances.

Species : Mouse, male and female
NOAEL : 600 ppm
Application Route : oral (drinking water)
Exposure time : 92 days
Dose : 120/600/3000 ppm
Method : OECD Test Guideline 408
Remarks : Information given is based on data obtained from similar substances.

Species : Rabbit, male and female
NOEL : >= 200 mg/kg
Application Route : Dermal
Exposure time : 20 days 6 h
Number of exposures : 5 days/week
Dose : 50/100/200 mg/kg bw/day
Method : OECD Test Guideline 410

Amines, polyethylenepoly-, triethylenetetramine fraction:

Species : Rat, male and female
NOAEL : 350 mg/kg
Application Route : Oral
Exposure time : 28 d
Number of exposures : 7 d
Dose : 100/350/1000 mg/kg bw/day
Method : OECD Test Guideline 407
Target Organs : Lungs
Remarks : Information given is based on data obtained from similar substances.

Species : Dog, male and female
NOAEL : 125 mg/kg
Application Route : Oral
Target Organs : Lungs
Remarks : Information given is based on data obtained from similar substances.

Species : Dog, male and female
NOAEL : 50 mg/kg
Application Route : Oral
Method : Subchronic toxicity
Remarks : Information given is based on data obtained from similar substances.

Species : Rat, male and female
NOAEL : 50 mg/kg
Application Route : Oral
Exposure time : 26 weeks
Dose : 50/175/600 mg/kg bw/day

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Method : OECD Test Guideline 408
Target Organs : Lungs
Remarks : Information given is based on data obtained from similar substances.

Species : Mouse, male and female
NOAEL : 92 mg/kg, 600 ppm
Application Route : Oral
Exposure time : 120/600/3000 ppm
Method : OECD Test Guideline 408
Remarks : Information given is based on data obtained from similar substances.

Aspiration toxicity

Not classified due to lack of data.

11.2 Information on other hazards

Endocrine disrupting properties

Product:

Assessment : This substance/mixture does not contain components considered to have endocrine disrupting properties for human health according to UK REACH Article 57(f),

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 products of fatty acid dimers and trimers, C18 (unsaturated) alkyl and fatty acids, C18 (unsaturated) alkyl with amines, polyethylenepoly-, triethylenetetramine fraction:

Toxicity to fish : LC50 (Brachydanio rerio (zebrafish)): 7.07 mg/l
Exposure time: 96 h
Test Type: semi-static test
Test substance: Fresh water
Method: OECD Test Guideline 203

Toxicity to daphnia and other : EC50 (Daphnia magna (Water flea)): 5.18 mg/l
aquatic invertebrates
Exposure time: 48 h
Test Type: static test
Test substance: Fresh water
Method: OECD Test Guideline 202

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HUNTSMAN

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Print Date 08.05.2025

Toxicity to algae/aquatic plants : EC50 (Selenastrum capricornutum (green algae)): 2.43 mg/l
Exposure time: 72 h
Test Type: static test
Test substance: Fresh water
Method: OECD Test Guideline 201

Toxicity to microorganisms : EC50 (activated sludge): 421 mg/l
Exposure time: 3 h
Test Type: static test
Test substance: Fresh water
Method: OECD Test Guideline 209

Fatty acids, C18-unsatd., dimers, polymers with oleic acid and triethylenetetramine:

Ecotoxicology Assessment

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

Amines, polyethylenepoly-, tetraethylenepentamine fraction:

Toxicity to fish : LC50 (Poecilia reticulata (guppy)): 420 mg/l
End point: mortality
Exposure time: 96 h
Test Type: semi-static test
Test substance: Fresh water
Method: Directive 67/548/EEC, Annex V, C.1.
GLP: yes

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 24.1 mg/l
End point: Immobilization
Exposure time: 48 h
Test Type: static test
Test substance: Fresh water
Method: Tested according to Annex V of Directive 67/548/EEC.

Toxicity to algae/aquatic plants : ErC50 (Selenastrum capricornutum (green algae)): 6.8 mg/l
Exposure time: 72 h
Test Type: static test
Test substance: Fresh water
Method: OECD Test Guideline 201

NOEC (Selenastrum capricornutum (green algae)): 0.5 mg/l
Exposure time: 72 h
Test Type: static test
Test substance: Fresh water
Method: OECD Test Guideline 201

Toxicity to microorganisms : EC50 (Bacteria): 97.3 mg/l
Exposure time: 2 h
Test Type: static test
Test substance: Fresh water

NOEC : 500 mg/l
Exposure time: 28 d

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Method: OECD Test Guideline 216

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : EC10: 1.9 mg/l
Exposure time: 21 d
Species: Daphnia magna (Water flea)
Test substance: Fresh water
Method: OECD Test Guideline 202
Remarks: Information given is based on data obtained from similar substances.

Toxicity to soil dwelling organisms : NOEC: 125 mg/kg
Exposure time: 55 d
Species: Eisenia fetida (earthworms)
Method: OECD Test Guideline 222

Amines, polyethylenepoly-, triethylenetetramine fraction:

Toxicity to fish : LC50 (Poecilia reticulata (guppy)): 570 mg/l
Exposure time: 96 h
Test Type: semi-static test
Test substance: Fresh water
Method: Directive 67/548/EEC, Annex V, C.1.

LC50 (Leuciscus idus (Golden orfe)): 200 - 500 mg/l
Exposure time: 96 h

LC50 (Pimephales promelas (fathead minnow)): 330 mg/l
End point: mortality
Exposure time: 96 h
Test Type: static test
Test substance: Fresh water
Method: EPA OTS 797.1400

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 31.1 mg/l
End point: Immobilization
Exposure time: 48 h
Test Type: static test
Test substance: Fresh water
Method: Directive 67/548/EEC, Annex V, C.2.

Toxicity to algae/aquatic plants : ErC50 (Selenastrum capricornutum (green algae)): 20 mg/l
Exposure time: 72 h
Test Type: semi-static test
Test substance: Fresh water
Method: OECD Test Guideline 201

EC10 (Selenastrum capricornutum (green algae)): 1.34 mg/l
Exposure time: 72 h
Test Type: semi-static test
Test substance: Fresh water
Method: OECD Test Guideline 201

Toxicity to microorganisms : NOEC (Bacteria): \geq 100 mg/l
Exposure time: 28 d
Method: OECD Test Guideline 216

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EC50 (Bacteria): > 100 mg/l
Exposure time: 28 h
Method: OECD Test Guideline 216

EC50 (Bacteria): 15.7 mg/l
Exposure time: 2 h
Test Type: static test
Test substance: Fresh water

NOEC (Bacteria): 1.3 mg/l
Exposure time: 2 h
Test Type: static test
Test substance: Fresh water

Toxicity to daphnia and other : EC10: 1.9 mg/l
aquatic invertebrates
(Chronic toxicity) Exposure time: 21 d
Species: Daphnia magna (Water flea)
Test Type: semi-static test
Test substance: Fresh water
Method: OECD Test Guideline 202

Toxicity to soil dwelling : NOEC: ca. 62.5 mg/kg
organisms Exposure time: 56 d
Species: Eisenia fetida (earthworms)
Method: OECD Test Guideline 222

EC50: > 1,000 mg/kg
Exposure time: 56 d
Species: Eisenia fetida (earthworms)
Method: OECD Test Guideline 222

Ecotoxicology Assessment

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

12.2 Persistence and degradability

Components:

Amines, polyethylenepoly-, tetraethylenepentamine fraction:

Biodegradability : Test Type: aerobic
Inoculum: activated sludge
Result: Not inherently biodegradable.
Biodegradation: 17 %
Exposure time: 84 d
Method: OECD Test Guideline 302 A
Test substance: Fresh water

Test Type: aerobic
Inoculum: activated sludge
Result: Not readily biodegradable.
Biodegradation: 0 %
Exposure time: 162 d
Method: OECD Test Guideline 301D
Test substance: Fresh water

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Amines, polyethylenepoly-, triethylenetetramine fraction:

Biodegradability : Inoculum: activated sludge
Result: Not readily biodegradable.
Biodegradation: 0 %
Exposure time: 162 d
Method: OECD Test Guideline 301D
Test substance: Fresh water

Test Type: aerobic
Inoculum: activated sludge
Result: Not inherently biodegradable.
Biodegradation: 20 %
Related to: Dissolved organic carbon (DOC)
Exposure time: 84 d
Method: OECD Test Guideline 302A
Test substance: Fresh water

12.3 Bioaccumulative potential

Components:

Amines, polyethylenepoly-, tetraethylenepentamine fraction:

Partition coefficient: n-octanol/water : log Pow: -2.6 (20 °C)

Amines, polyethylenepoly-, triethylenetetramine fraction:

Partition coefficient: n-octanol/water : log Pow: -2.08 - 2.90 (20 °C)
Method: QSAR

12.4 Mobility in soil

Components:

Amines, polyethylenepoly-, tetraethylenepentamine fraction:

Distribution among environmental compartments : Koc: 3.2 - 3.7
Method: OECD Test Guideline 106

Amines, polyethylenepoly-, triethylenetetramine fraction:

Distribution among environmental compartments : Koc: 3162.28, log Koc: 3.5
Method: OECD Test Guideline 106

12.5 Results of PBT and vPvB assessment

Product:

Assessment : 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.

12.6 Other adverse effects

Product:

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Endocrine disrupting potential	:	This substance/mixture does not contain components considered to have endocrine disrupting properties for environment according to UK REACH Article 57(f).
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.

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

ADR	:	UN 3082
RID	:	UN 3082
IMDG	:	UN 3082
IATA	:	UN 3082

14.2 UN proper shipping name

ADR	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (POLYAMIDE RESIN)
RID	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (POLYAMIDE RESIN)
IMDG	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (POLYAMIDE RESIN)
IATA	:	Environmentally hazardous substance, liquid, n.o.s. (POLYAMIDE RESIN)

14.3 Transport hazard class(es)

	Class	Subsidiary risks
ADR	:	9
RID	:	9

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IMDG : 9

IATA : 9

14.4 Packing group

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

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.

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SECTION 15: Regulatory information

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

Relevant EU provisions transposed through retained EU law

UK REACH List of restrictions (Annex 17)	: Conditions of restriction for the following entries should be considered: Number on list 3
UK REACH Candidate list of substances of very high concern (SVHC) for Authorisation	: This product does not contain substances of very high concern.
UK REACH List of substances subject to authorisation (Annex XIV)	: Not applicable

Other regulations:

Take note of The Management of Health and Safety at Work Regulations 1999 (requirements relating to protection of young people at work contained in Regulation 19) and of Directive 94/33/EC on the protection of young people at work.

The components of this product are reported in the following inventories:

DSL	: All components of this product are on the Canadian DSL
AIIC	: On the inventory, or in compliance with the inventory
ENCS	: On the inventory, or in compliance with the inventory
KECI	: On the inventory, or in compliance with the inventory
PICCS	: Not in compliance with the inventory
IECSC	: On the inventory, or in compliance with the inventory
TCSI	: On the inventory, or in compliance with the inventory
TSCA	: All substances listed as active on the TSCA inventory

Inventories

AICS (Australia), AIIC (Australia), DSL (Canada), IECSC (China), ENCS (Japan), KECI (Korea), NZIOC (New Zealand), PICCS (Philippines), TCSI (Taiwan), TSCA (United States of America (USA))

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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

H302	: Harmful if swallowed.
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.
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 Chronic	: Long-term (chronic) aquatic hazard
Eye Dam.	: Serious eye damage
Eye Irrit.	: Eye irritation
Skin Corr.	: Skin corrosion
Skin Irrit.	: Skin irritation
Skin Sens.	: Skin sensitisation

Further information

Classification of the mixture:

Eye Dam. 1	H318
Skin Sens. 1	H317
Aquatic Chronic 2	H411

Classification procedure:

Based on product data or assessment
Calculation method
Calculation method

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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.

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