

SAFETY DATA SHEET

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

HUNTSMAN

Enriching lives through innovation

ARALDITE® PUTTY

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	10.12.2021	400001009256	Date of first issue: 10.12.2021

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

1.1 Product identifier

Trade name : ARALDITE® PUTTY

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

Use of the : Adhesives
Substance/Mixture

1.3 Details of the supplier of the safety data sheet

Company : Huntsman Advanced Materials (Europe)BVBA
Address : Everslaan 45
3078 Everberg
Belgium
Telephone : +41 61 299 20 41
Telefax : +41 61 299 20 40
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)

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 3	H412: Harmful to aquatic life with long lasting effects.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

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Hazard pictograms :



Signal word : Warning

Hazard statements	H315	Causes skin irritation.
	H317	May cause an allergic skin reaction.
	H319	Causes serious eye irritation.
	H412	Harmful 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:	
	P264	Wash skin thoroughly after handling.
	P273	Avoid release to the environment.
	P280	Wear protective gloves/ eye protection/ face protection.
	Response:	
	P333 + P313	If skin irritation or rash occurs: Get medical advice/ attention.
	Disposal:	
P501	Dispose of contents and container in accordance with all local, regional, national and international regulations.	

Hazardous components which must be listed on the label:

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

Reaction products of pentaerythritol, propoxylated and 1-chloro-2,3-epoxypropane with hydrogen sulfide

2.3 Other hazards

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

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

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

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Hazardous components

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Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% 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 Skin Irrit. 2; H315 >= 5 % Eye Irrit. 2; H319 >= 5 %	>= 20 - < 25
Reaction products of pentaerythritol, propoxylated and 1-chloro-2,3-epoxypropane with hydrogen sulfide	Not Assigned -	Skin Sens. 1B; H317 Aquatic Chronic 3; H412	>= 2.5 - < 10
Substances with a workplace exposure limit :			
Talc (Mg ₃ H ₂ (SiO ₃) ₄)	14807-96-6 238-877-9		>= 30 - < 50

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.
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 : 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

None known.

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
Halogenated compounds
Sulphur oxides

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.
Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

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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.

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.

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

Recommended storage temperature : 2 - 8 °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
Talc (Mg ₃ H ₂ (SiO ₃) ₄)	14807-96-6	TWA (Respirable dust)	1 mg/m ³	GB EH40
		TWA (Respirable dust)	0.1 mg/m ³	2004/37/EC
Further information	Carcinogens or mutagens			

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

Substance name	End Use	Exposure routes	Potential health effects	Value
bis-[4-(2,3-epoxipropoxy)phenyl]propane	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
Reaction products of pentaerythritol, propoxylated and 1-chloro-2,3-epoxypropane with hydrogen sulfide	Consumers	Oral	Long-term systemic effects	0.5 mg/kg bw/day
	Workers	Inhalation	Long-term systemic effects	22 mg/m ³
	Workers	Dermal	Long-term systemic effects	2.7 mg/kg bw/day
	Consumers	Inhalation	Long-term systemic effects	6.52 mg/m ³
	Consumers	Dermal	Long-term systemic effects	1.61 mg/kg bw/day

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	Consumers	Oral	Long-term systemic effects	1.9 mg/kg bw/day
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Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006:

Substance name	Environmental Compartment	Value
bis-[4-(2,3-epoxipropoxy)phenyl]propane	Fresh water	0.006 mg/l
	Marine water	0.001 mg/l
	Fresh water sediment	0.341 mg/kg dry weight (d.w.)
	Marine sediment	0.034 mg/kg dry weight (d.w.)
	Soil	0.065 mg/kg dry weight (d.w.)
Reaction products of pentaerythritol, propoxylated and 1-chloro-2,3-epoxypropane with hydrogen sulfide	Sewage treatment plant	10 mg/l
	Secondary Poisoning	11 mg/kg
	Fresh water	70 µg/l
	Remarks:Assessment Factors	
	Marine water	7 µg/l
	Remarks:Assessment Factors	
	Sewage treatment plant	10 mg/l
	Remarks:Assessment Factors	
	Fresh water sediment	0.322 mg/kg dry weight (d.w.)
	Remarks:Equilibrium method	
	Marine sediment	0.032 mg/kg dry weight (d.w.)
	Remarks:Equilibrium method	
	Soil	0.023 mg/kg dry weight (d.w.)
	Remarks:Equilibrium method	

8.2 Exposure controls

Personal protective equipment

Eye 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 : Chemical-resistant, impervious gloves complying with an

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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.

The selected protective gloves have to satisfy the specifications of Regulation (EU) 2016/425 and the standard EN 374 derived from it. 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).

Skin and body protection	: Impervious clothing Choose body protection according to the amount and concentration of the dangerous substance at the work place.
Respiratory protection	: Use respiratory protection unless adequate local exhaust ventilation is provided or exposure assessment demonstrates that exposures are within recommended exposure guidelines. Equipment should conform to EN 14387
Filter type	: Combined particulates and organic vapour type (A-P)

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	: paste
Colour	: grey
Odour	: slight
Odour Threshold	: No data is available on the product itself.
pH	: substance/mixture is non-soluble (in water)
Melting point/freezing point	: No data is available on the product itself.
Boiling point	: > 200 °C
Flash point	: > 200 °C Method: Pensky-Martens closed cup
Flammability (solid, gas)	: No data is available on the product itself.
Upper explosion limit / Upper flammability limit	: No data is available on the product itself.
Lower explosion limit / Lower flammability limit	: No data is available on the product itself.
Vapour pressure	: < 0.001 hPa (20 °C)

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Relative vapour density	:	No data is available on the product itself.
Relative density	:	1.7 (25 °C)
Density	:	1.7 g/cm ³ (25 °C)
Solubility(ies)	:	
Water solubility	:	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.
Auto-ignition temperature	:	No data is available on the product itself.
Decomposition temperature	:	> 200 °C
Viscosity	:	No data is available on the product itself.

9.2 Other information

No data available

SECTION 10: Stability and reactivity

10.1 Reactivity

No dangerous reaction known under conditions of normal use.

10.2 Chemical stability

Stable under normal conditions.

10.3 Possibility of hazardous reactions

Hazardous reactions : No hazards to be specially mentioned.

10.4 Conditions to avoid

Conditions to avoid : None known.

10.5 Incompatible materials

Materials to avoid :

- Strong acids
- Strong bases
- Strong oxidizing agents
- Reducing agents

10.6 Hazardous decomposition products

Hazardous decomposition products :

- carbon dioxide
- carbon monoxide
- Halogenated compounds

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Sulphur Oxides

SECTION 11: Toxicological information

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

Acute toxicity

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

Reaction products of pentaerythritol, propoxylated and 1-chloro-2,3-epoxypropane with hydrogen sulfide:

Acute oral toxicity	: LD50 (Rat, male and female): 2,600 mg/kg Method: OECD Test Guideline 401
Acute inhalation toxicity	: LC50 (Rat, male and female): > 0.1 mg/l Exposure time: 4 h Test atmosphere: vapour Method: OECD Test Guideline 403 GLP: no Assessment: The substance or mixture has no acute inhalation toxicity
Acute dermal toxicity	: LD50 (Rabbit, male and female): > 10,200 mg/kg Method: OECD Test Guideline 402 GLP: no Assessment: The substance or mixture has no acute dermal toxicity

Skin corrosion/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.

Reaction products of pentaerythritol, propoxylated and 1-chloro-2,3-epoxypropane with hydrogen sulfide:

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

Species	:	reconstructed human epidermis (RhE)
Assessment	:	No skin irritation
Method	:	OECD Test Guideline 439
Result	:	No skin irritation

Species	:	reconstructed human epidermis (RhE)
Method	:	OECD Test Guideline 431
Result	:	Not corrosive

Serious eye damage/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 products of pentaerythritol, propoxylated and 1-chloro-2,3-epoxypropane with hydrogen sulfide:

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

Respiratory or skin sensitisation

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 products of pentaerythritol, propoxylated and 1-chloro-2,3-epoxypropane with hydrogen sulfide:

Test Type	:	LLNA (Local Lymph Node Assay)
Exposure routes	:	Skin
Species	:	Mouse
Assessment	:	Probability or evidence of low to moderate skin sensitisation rate in humans
Method	:	OECD Test Guideline 429
Result	:	Probability or evidence of low to moderate skin sensitisation rate in humans

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Germ cell mutagenicity

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

Reaction products of pentaerythritol, propoxylated and 1-chloro-2,3-epoxypropane with hydrogen sulfide:

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: negative GLP: yes Test Type: Chromosome aberration test in vitro Test system: Human lymphocytes Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 473 Result: negative GLP: yes Test Type: gene mutation test Test system: Chinese hamster lung cells Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 476 Result: negative GLP: yes
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Carcinogenicity

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)
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

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Reproductive toxicity

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.

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

STOT - single exposure

No data available

STOT - repeated exposure

No data available

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Repeated dose toxicity

Components:

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

Species	: Rat, male and female
NOAEL	: 50 mg/kg
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 products of pentaerythritol, propoxylated and 1-chloro-2,3-epoxypropane with hydrogen sulfide:

Species	: Rat, male and female
NOAEL	: 75 mg/kg
Application Route	: oral (gavage)
Dose	: 75, 250 and 1000 mg/kg bw/d
Method	: OECD Test Guideline 408
GLP	: yes

Aspiration toxicity

No data available

11.2 Information on other hazards

Endocrine disrupting properties

Product:

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

No data available

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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

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 : NOEC: 0.3 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 211

Ecotoxicology Assessment

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

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Reaction products of pentaerythritol, propoxylated and 1-chloro-2,3-epoxypropane with hydrogen sulfide:

Toxicity to fish	:	LC50 (Danio rerio (zebra fish)): 87 mg/l End point: mortality Exposure time: 96 h Test substance: Fresh water Method: OECD Test Guideline 203
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 12 mg/l End point: Immobilization Exposure time: 48 h Test Type: static test Test substance: Fresh water Method: OECD Test Guideline 202
Toxicity to algae/aquatic plants	:	EC50 (Desmodesmus subspicatus (green algae)): > 733 mg/l Exposure time: 72 h Test Type: static test Method: OECD Test Guideline 201 GLP: yes
Toxicity to microorganisms	:	EC50 (activated sludge): > 1,000 mg/l Exposure time: 3 h Test Type: static test Test substance: Fresh water Method: OECD Test Guideline 209 GLP: yes
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC: 3.5 mg/l Exposure time: 21 d Species: Daphnia magna (Water flea) Test substance: Fresh water Method: OECD Test Guideline 211 GLP: yes

Talc (Mg₃H₂(SiO₃)₄):

Toxicity to fish	:	LC50 (Brachydanio rerio (zebrafish)): > 100 mg/l Exposure time: 24 h
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12.2 Persistence and degradability

Components:

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

Biodegradability	:	Test Type: aerobic Inoculum: activated sludge, non-adapted Concentration: 20 mg/l Result: Not readily biodegradable. Biodegradation: 5 % Exposure time: 28 d Method: OECD Test Guideline 301F
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Stability in water	:	Degradation half life (DT50): 4.83 d (25 °C) pH: 4
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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 products of pentaerythritol, propoxylated and 1-chloro-2,3-epoxypropane with hydrogen sulfide:

Biodegradability : Test Type: aerobic
Inoculum: activated sludge
Result: Not biodegradable
Biodegradation: 5 %
Exposure time: 28 d
Method: OECD Test Guideline 301B

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

12.4 Mobility in soil

Components:

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

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.

12.6 Endocrine disrupting properties

Product:

Assessment : The substance/mixture does not contain components

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considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

12.7 Other adverse effects

Product:

Additional ecological information : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Harmful 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

Not regulated as dangerous goods

14.2 UN proper shipping name

Not regulated as dangerous goods

14.3 Transport hazard class(es)

Not regulated as dangerous goods

14.4 Packing group

Not regulated as dangerous goods

14.5 Environmental hazards

Not regulated as dangerous goods

14.6 Special precautions for user

Remarks : Not classified as dangerous in the meaning of transport regulations.

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

REACH - List of substances subject to authorisation (Annex XIV) : Not applicable

REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59). : This product does not contain substances of very high concern (Regulation (EC) No 1907/2006 (REACH), Article 57).

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.
Not applicable

Other regulations:

Take note of Directive 94/33/EC on the protection of young people at work or stricter national regulations, where applicable.

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

NZIoC : 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

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

TSCA : All substances listed as active on the TSCA inventory

Inventories

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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))

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.
H412	: Harmful 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
2004/37/EC	: Europe. Directive 2004/37/EC on the protection of workers from the risks related to exposure to carcinogens or mutagens at work
GB EH40	: UK. EH40 WEL - Workplace Exposure Limits
2004/37/EC / TWA	: Long term exposure limit
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 3	H412

Classification procedure:

Calculation method
Calculation method
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.

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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.

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