

# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

**HUNTSMAN**

Enriching lives through innovation

## ARALDITE® CW 1195-1 BD

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	21.12.2018	400001010341	Date of first issue: 21.12.2018

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

#### 1.1 Product identifier

Trade name : ARALDITE® CW 1195-1 BD

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

Use of the Substance/Mixture : Component used for the manufacture of electrical insulation parts

Recommended restrictions on use : For industrial use only.

#### 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 responsible for the SDS : Global\_Product\_EHS\_AdMat@huntsman.com

#### 1.4 Emergency telephone number

Emergency telephone number : Centres Antipoison et de Toxicovigilance:  
ANGERS: 02 41 48 21 21  
BORDEAUX: 05 56 96 40 80  
LILLE: 0 825 812 822  
LYON: 04 72 11 69 11  
MARSEILLE 04 91 75 25 25  
NANCY: 03 83 32 36 36  
PARIS: 01 40 05 48 48  
RENNES: 02 99 59 22 22  
STRASBOURG: 03 88 37 37 37  
TOULOUSE: 05 61 77 74 47  
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

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## 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)

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	: <b>Prevention:</b>	
	P261	Avoid breathing mist or vapours.
	P264	Wash skin thoroughly after handling.
	P273	Avoid release to the environment.
	P280	Wear protective gloves/ eye protection/ face protection.
	<b>Response:</b>	
	P333 + P313	If skin irritation or rash occurs: Get medical advice/ attention.
	P337 + P313	If eye irritation persists: Get medical advice/ attention.

Hazardous components which must be listed on the label:

7-Oxabicyclo[4.1.0]hept-3-ylmethyl 7-oxabicyclo[4.1.0]heptane-3-carboxylate

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

1,4-bis(2,3-epoxypropoxy)butane

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### 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. Index-No. Registration number	Classification	Concentration (% w/w)
7-Oxabicyclo[4.1.0]hept-3-ylmethyl 7-oxabicyclo[4.1.0]heptane-3-carboxylate	2386-87-0 219-207-4 01-2119846133-44	Skin Sens. 1; H317	>= 20 - < 30
2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane	1675-54-3 216-823-5 603-073-00-2 01-2119456619-26	Skin Irrit. 2; H315 Eye Irrit. 2; H319 Skin Sens. 1; H317 Aquatic Chronic 2; H411	>= 10 - < 20
1,4-Bis(2,3-epoxypropoxy)butane	2425-79-8 219-371-7 603-072-00-7 01-2119494060-45	Acute Tox. 4; H302 Acute Tox. 4; H332 Acute Tox. 4; H312 Skin Irrit. 2; H315 Eye Dam. 1; H318 Skin Sens. 1; H317 Aquatic Chronic 3; H412	>= 0,25 - < 1

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.<br>Show this safety data sheet to the doctor in attendance.<br>Treat symptomatically.<br>Get medical attention if symptoms occur. |
| If inhaled              | : If inhaled, remove to fresh air.<br>Get medical attention if symptoms occur.  |
| In case of skin contact | : If skin irritation persists, call a physician.<br>If on skin, rinse well with water.<br>If on clothes, remove clothes.  |
| In case of eye contact  | : Immediately flush eye(s) with plenty of water.<br>Remove contact lenses.<br>Keep eye wide open while rinsing.   |

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If eye irritation persists, consult a specialist.

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

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

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

Unsuitable extinguishing media : High volume water jet

### 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  
Metal oxides

### 5.3 Advice for firefighters

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

Specific extinguishing methods : No data is available on the product itself.

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

## SECTION 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Use personal protective equipment.

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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 : 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.  
Persons susceptible to skin sensitisation problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used.

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

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

### 7.2 Conditions for safe storage, including any incompatibilities

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

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

Recommended storage temperature : 2 - 18 °C

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Further information on storage stability : Stable under recommended storage conditions.

### 7.3 Specific end use(s)

Specific use(s) : No data available

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

Contains no substances with occupational exposure limit values.

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

Substance name	End Use	Exposure routes	Potential health effects	Value
2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane	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, Short-term exposure	0,75 mg/kg 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
7-Oxabicyclo[4.1.0]hept-3-ylmethyl 7-oxabicyclo[4.1.0]heptane-3-carboxylate	Workers	Dermal	Acute systemic effects	0,208 mg/kg
	Workers	Inhalation	Acute systemic effects	0,729 mg/m3
	Workers	Dermal	Long-term systemic effects	0,1 mg/kg
	Workers	Inhalation	Long-term systemic effects	0,4 mg/m3
	Consumers	Oral	Acute systemic effects	0,125 mg/kg
	Consumers	Inhalation	Acute systemic	0,2188 mg/m3

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			effects	
	Consumers	Oral	Long-term systemic effects	0,1 mg/kg
	Consumers	Inhalation	Long-term systemic effects	0,1 mg/m3
	Consumers	Dermal	Acute systemic effects	0,125 mg/kg
	Consumers	Dermal	Long-term systemic effects	0,1 mg/kg

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

Substance name	Environmental Compartment	Value
2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane	Fresh water	0,006 mg/l
Remarks:	Assessment Factors	
	Marine water	0,0006 mg/l
	Assessment Factors	
	Freshwater - intermittent	0,018 mg/l
	Assessment Factors	
	Fresh water sediment	0,996 mg/kg
	Equilibrium method	
	Marine sediment	0,0996 mg/kg
	Equilibrium method	
	Soil	0,196 mg/kg
	Equilibrium method	
	Sewage treatment plant	10 mg/l
	Assessment Factors	
	Secondary Poisoning	11 mg/kg

## 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 : Solvent-resistant gloves (butyl-rubber)

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

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Material	: Neoprene gloves
Remarks	: 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 ventilation is provided or exposure assessment demonstrates that exposures are within recommended exposure guidelines Recommended Filter type: Combined particulates and organic vapour type
Filter type	: Filter type A-P

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

Appearance	: paste
Colour	: grey
Odour	: slight
Odour Threshold	: No data is available on the product itself.
pH	: 6 - 8 (20 °C) Concentration: 500 g/l
Freezing point	: No data is available on the product itself.
Melting point	: No data is available on the product itself.
Boiling point	: > 200 °C
Flash point	: 240 °C Method: Pensky-Martens closed cup
Evaporation rate	: No data is available on the product itself.
Flammability (solid, gas)	: No data is available on the product itself.
Burning rate	: 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.



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Vapour pressure	: < 0,001 hPa (20 °C)
Relative vapour density	: No data is available on the product itself.
Relative density	: 1,65 (20 °C)
Density	: 1,65 g/cm <sup>3</sup> (20 °C)
Solubility(ies)	
Water solubility	: No data is available on the product itself.
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	
Viscosity, dynamic	: 50 000 - 120 000 mPa.s (20 °C) Method: ISO 2555
Explosive properties	: No data is available on the product itself.
Oxidizing properties	: 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 : None known.

### 10.6 Hazardous decomposition products

Hazardous decomposition : carbon dioxide

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products

carbon monoxide  
Halogenated compounds  
aluminium oxide

## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

#### Acute toxicity

##### Components:

7-Oxabicyclo[4.1.0]hept-3-ylmethyl 7-oxabicyclo[4.1.0]heptane-3-carboxylate:

Acute oral toxicity : LD50 (Rat, male and female): ca. 5 000 mg/kg  
Method: OECD Test Guideline 401  
Assessment: The substance or mixture has no acute oral toxicity

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

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

1,4-bis(2,3-epoxypropoxy)butane:

Acute oral toxicity : LD50 (Rat, male and female): 1 163 mg/kg  
Method: OECD Test Guideline 401

##### Components:

1,4-bis(2,3-epoxypropoxy)butane:

Acute inhalation toxicity : Acute toxicity estimate (Rat): 1,5 mg/l  
Test atmosphere: dust/mist  
Method: Expert judgement

##### Components:

7-Oxabicyclo[4.1.0]hept-3-ylmethyl 7-oxabicyclo[4.1.0]heptane-3-carboxylate:

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

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

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

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1,4-bis(2,3-epoxypropoxy)butane:

Acute dermal toxicity : Acute toxicity estimate : 1 100 mg/kg  
Method: Converted acute toxicity point estimate

Acute toxicity (other routes of administration) : No data available

### Skin corrosion/irritation

#### Components:

7-Oxabicyclo[4.1.0]hept-3-ylmethyl 7-oxabicyclo[4.1.0]heptane-3-carboxylate:

Species: Rabbit

Assessment: No skin irritation

Method: OECD Test Guideline 404

Result: Normally reversible injuries

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

Species: Rabbit

Assessment: Mild skin irritant

Method: OECD Test Guideline 404

Result: Irritating to skin.

1,4-bis(2,3-epoxypropoxy)butane:

Species: Rabbit

Method: OECD Test Guideline 404

Result: Skin irritation

### Serious eye damage/eye irritation

#### Components:

7-Oxabicyclo[4.1.0]hept-3-ylmethyl 7-oxabicyclo[4.1.0]heptane-3-carboxylate:

Species: Rabbit

Method: OECD Test Guideline 405

Result: No eye irritation

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

Species: Rabbit

Assessment: Mild eye irritant

Method: OECD Test Guideline 405

Result: Irritating to eyes.

1,4-bis(2,3-epoxypropoxy)butane:

Species: Rabbit

Method: OECD Test Guideline 405

Result: Risk of serious damage to eyes.

### Respiratory or skin sensitisation

#### Components:

7-Oxabicyclo[4.1.0]hept-3-ylmethyl 7-oxabicyclo[4.1.0]heptane-3-carboxylate:

Exposure routes: Skin

Species: Guinea pig

Method: OECD Test Guideline 406

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Result: May cause sensitisation by skin contact.

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

Exposure routes: Skin

Species: Mouse

Assessment: May cause sensitisation by skin contact.

Method: OECD Test Guideline 429

Result: Causes sensitisation.

1,4-bis(2,3-epoxypropoxy)butane:

Exposure routes: Skin

Species: Guinea pig

Method: OECD Test Guideline 406

Result: May cause sensitisation by skin contact.

Assessment: No data available

### Germ cell mutagenicity

#### Components:

7-Oxabicyclo[4.1.0]hept-3-ylmethyl 7-oxabicyclo[4.1.0]heptane-3-carboxylate:

Genotoxicity in vitro

: Test Type: gene mutation test

Test system: mouse lymphoma cells

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 476

Result: positive

: Test Type: Ames test

Test system: Salmonella tryphimurium and E. coli

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 471

Result: positive

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

Genotoxicity in vitro

: Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 476

Result: positive

: Concentration: 0 - 5000 ug/plate

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 471

Result: positive

1,4-bis(2,3-epoxypropoxy)butane:

Genotoxicity in vitro

: Concentration: 10 - 5000 ug/plate

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 471

Result: positive

Remarks: Not classified due to data which are conclusive although insufficient for classification.

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: Concentration: 1 - 100 µg/L  
Metabolic activation: with and without metabolic activation  
Method: OECD Test Guideline 473  
Result: positive  
Remarks: Not classified due to data which are conclusive although insufficient for classification.

### Components:

7-Oxabicyclo[4.1.0]hept-3-ylmethyl 7-oxabicyclo[4.1.0]heptane-3-carboxylate:

Genotoxicity in vivo : Cell type: Somatic  
Application Route: Intraperitoneal injection  
Method: Directive 67/548/EEC, Annex V, B.12.  
Result: negative

Cell type: Somatic  
Application Route: Oral  
Method: OECD Test Guideline 486  
Result: negative

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

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

1,4-bis(2,3-epoxypropoxy)butane:

Genotoxicity in vivo : Test Type: In vivo micronucleus test  
Test species: Mouse  
Cell type: Somatic  
Application Route: Oral  
Exposure time: 4 d  
Dose: 187.5 - 750 mg/kg  
Method: OECD Test Guideline 474  
Result: negative

Test Type: unscheduled DNA synthesis assay  
Test species: Rat  
Cell type: Liver cells  
Application Route: Oral  
Method: OECD Test Guideline 486

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Result: negative

### Components:

1,4-bis(2,3-epoxypropoxy)butane:

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

Germ cell mutagenicity- : No data available  
Assessment

### **Carcinogenicity**

#### Components:

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

Species: Rat, male and female

Application Route: Oral

Exposure time: 24 month(s)

Dose: 15 mg/kg

Frequency of Treatment: 7 days/week

Method: OECD Test Guideline 453

Result: negative

Species: Mouse, male

Application Route: Dermal

Exposure time: 24 month(s)

Dose: 0.1 mg/kg

Frequency of Treatment: 3 days/week

Method: OECD Test Guideline 453

Result: negative

Species: Rat, female

Application Route: Dermal

Exposure time: 24 month(s)

Dose: 1 mg/kg

Frequency of Treatment: 5 days/week

Method: OECD Test Guideline 453

Result: negative

Carcinogenicity - : No data available  
Assessment

### **Reproductive toxicity**

#### Components:

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

Effects on fertility : Test Type: Two-generation study

Species: Rat, male and female

Application Route: Oral

Dose: >750 milligram per kilogram

General Toxicity - Parent: No-observed-effect level: 540  
mg/kg body weight

General Toxicity F1: No-observed-effect level: 540 mg/kg

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body weight

Symptoms: No adverse effects

Method: OECD Test Guideline 416

Result: No effects on fertility and early embryonic development were detected.

### Components:

7-Oxabicyclo[4.1.0]hept-3-ylmethyl 7-oxabicyclo[4.1.0]heptane-3-carboxylate:

Effects on foetal development

: Species: Rat, female

Application Route: Oral

General Toxicity Maternal: No observed adverse effect level: 25 mg/kg body weight

Method: OECD Test Guideline 414

Result: No teratogenic effects

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

Species: Rabbit, female

Application Route: Dermal

General Toxicity Maternal: No observed adverse effect level: 30 mg/kg body weight

Method: Other guidelines

Result: No teratogenic effects

Species: Rabbit, female

Application Route: Oral

General Toxicity Maternal: No observed adverse effect level: 60 mg/kg body weight

Method: OECD Test Guideline 414

Result: No teratogenic effects

Species: Rat, female

Application Route: Oral

General Toxicity Maternal: No observed adverse effect level: 180 mg/kg body weight

Method: OECD Test Guideline 414

Result: No teratogenic effects

Reproductive toxicity - Assessment

: No data available

### **STOT - single exposure**

No data available

### **STOT - repeated exposure**

No data available

### **Repeated dose toxicity**

#### Components:

7-Oxabicyclo[4.1.0]hept-3-ylmethyl 7-oxabicyclo[4.1.0]heptane-3-carboxylate:

Species: Rat, male and female

NOAEL: 5 mg/kg

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Application Route: Ingestion  
Exposure time: 90 d Dose: 5, 50 & 500 mg/kg  
Method: OECD Test Guideline 408

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

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

Species: Mouse, male

NOAEL: 100 mg/kg

Application Route: Skin contact

Exposure time: 13 Weeks Number of exposures: 3 d

Method: Subchronic toxicity

1,4-bis(2,3-epoxypropoxy)butane:

Species: Rat, male and female

NOAEL: 200 mg/kg

Application Route: Ingestion

Exposure time: 28 d Number of exposures: 7 d

Method: Subacute toxicity

Repeated dose toxicity - : No data available  
Assessment

### Aspiration toxicity

No data available

### Experience with human exposure

General Information: No data available

Inhalation: No data available

Skin contact: No data available

Eye contact: No data available

Ingestion: No data available



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### Toxicology, Metabolism, Distribution

No data available

### Neurological effects

No data available

### Further information

Ingestion: No data available

## SECTION 12: Ecological information

### 12.1 Toxicity

#### Components:

7-Oxabicyclo[4.1.0]hept-3-ylmethyl 7-oxabicyclo[4.1.0]heptane-3-carboxylate:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 24 mg/l  
Exposure time: 96 h  
Test Type: flow-through test  
Test substance: Fresh water  
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 40 mg/l  
Exposure time: 48 h  
Test Type: static test  
Test substance: Fresh water  
Method: OECD Test Guideline 202

Toxicity to algae/aquatic plants : EbC50 (Selenastrum capricornutum (green algae)): 90 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): > 2000 mg/kg  
Exposure time: 3 h  
Test Type: static test  
Test substance: Fresh water  
Method: OECD Test Guideline 209

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

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 1,5 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)): 2,7 mg/l  
Exposure time: 48 h

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Test Type: static test  
Test substance: Fresh water

Toxicity to algae/aquatic plants : EC50 (Selenastrum capricornutum (green algae)): 9,4 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

1,4-bis(2,3-epoxypropoxy)butane:

Toxicity to fish : LC50 (Brachydanio rerio (zebrafish)): 24 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)): 75 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 : > 160 mg/l  
Exposure time: 72 h  
Test Type: static test  
Test substance: Fresh water  
Method: OECD Test Guideline 201

Toxicity to microorganisms : IC50 (activated sludge): > 100 mg/l  
Exposure time: 3 h  
Test Type: static test  
Test substance: Fresh water  
Method: OECD Test Guideline 209

### 12.2 Persistence and degradability

#### Components:

7-Oxabicyclo[4.1.0]hept-3-ylmethyl 7-oxabicyclo[4.1.0]heptane-3-carboxylate:

Biodegradability : Inoculum: activated sludge  
Concentration: 30 mg/l  
Result: Readily biodegradable.  
Biodegradation: 71 %

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

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

Biodegradability : Inoculum: Sewage (STP effluent)  
Concentration: 20 mg/l  
Result: Not readily 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

1,4-bis(2,3-epoxypropoxy)butane:

Biodegradability : Inoculum: activated sludge  
Concentration: 20 mg/l  
Result: Not readily biodegradable.  
Biodegradation: 43 %  
Exposure time: 28 d  
Method: OECD Test Guideline 301F

### 12.3 Bioaccumulative potential

#### Components:

7-Oxabicyclo[4.1.0]hept-3-ylmethyl 7-oxabicyclo[4.1.0]heptane-3-carboxylate:

Partition coefficient: n-octanol/water : log Pow: 1,34 (20 °C)  
Method: OECD Test Guideline 107

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

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

1,4-bis(2,3-epoxypropoxy)butane:

Partition coefficient: n-octanol/water : log Pow: -0,269 (25 °C)  
pH: 6,7  
Method: OECD Test Guideline 117

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### 12.4 Mobility in soil

#### Components:

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

Distribution among environmental compartments : Koc: 445

1,4-bis(2,3-epoxypropoxy)butane:

Distribution among environmental compartments : Koc: 12,59  
Method: OECD Test Guideline 121

### 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:

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	: The product should not be allowed to enter drains, water courses or the soil. Do not contaminate ponds, waterways or ditches with chemical or used container. Send to a licensed waste management company. Dispose of as hazardous waste in compliance with local and national regulations. Dispose of contents/ container to an approved waste disposal plant.
Contaminated packaging	: Empty remaining contents. Dispose of as unused product. Do not re-use empty containers.

## SECTION 14: Transport information

#### **IATA**

Not regulated as dangerous goods

#### **IMDG**

Not regulated as dangerous goods

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### ADR

Not regulated as dangerous goods

### RID

Not regulated as dangerous goods

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

Not applicable for product as supplied.

## SECTION 15: Regulatory information

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

REACH - 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).

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

REACH - List of substances subject to authorisation - Future sunset date : Not applicable

Occupational Illnesses (R-461-3, France) : 51, 84

Other regulations:

Take note of Directive 92/85/EEC regarding maternity protection or stricter national regulations, where applicable.

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

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

NZIoC : Not in compliance with the inventory

ENCS : Not in compliance with the inventory

KECI : Not in compliance with the inventory

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

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

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

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

### Inventories

AICS (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

H302	: Harmful if swallowed.
H312	: Harmful in contact with skin.
H315	: Causes skin irritation.
H317	: May cause an allergic skin reaction.
H318	: Causes serious eye damage.
H319	: Causes serious eye irritation.
H332	: Harmful if inhaled.
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 Irrit.	: Skin irritation
Skin Sens.	: Skin sensitisation

### 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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