

## ARALDITE® FUSION G RESIN

Version	Revision Date:	SDS Number:	Date of last issue: 12.06.2018
1.1	05.02.2019	400001021209	Date of first issue: 12.06.2018

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

#### 1.1 Product identifier

Trade name : ARALDITE® FUSION G 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 (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 : Berlin: 0049 30 19 24 0 & 0049 30 30 68 6 7 11  
Bonn: 0049 228 19 27 0 & 0049 228 28 7 3 32 11  
Erfurt: 0049 361 73 07 30  
Freiburg: 0049 761 16 24 0  
Göttingen: 0049 51 19 24 0 & 0049 551 38 31 80  
Homburg: 0049 6841 19 24 0  
Mainz: 0049 6131 19 24 0 & 0049 6131 23 24 66  
München: 0049 89 19 24 0  
Nürnberg: 0049 911 39 8 2 45 1  
EUROPE: +32 35 75 1234  
France ORFILA: +33(0)145425959  
ASIA: +65 6336-6011  
China: +86 20 39377888  
+86 532 83889090  
India: + 91 22 42 87 5333  
Australia: 1800 786 152  
New Zealand: 0800 767 437  
USA: +1/800/424.9300

### SECTION 2: Hazards identification

#### 2.1 Classification of the substance or mixture

##### Classification (REGULATION (EC) No 1272/2008)

Skin irritation, Category 2 H315: Causes skin irritation.

Eye irritation, Category 2 H319: Causes serious eye irritation.

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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)

Hazard pictograms

:



Signal word

:

Warning

Hazard statements

:

H319  
H315  
H317  
H411

Causes serious eye irritation.  
Causes skin irritation.  
May cause an allergic skin reaction.  
Toxic to aquatic life with long lasting effects.

Precautionary statements

:

P103  
P102  
P101

Read label before use.  
Keep out of reach of children.  
If medical advice is needed, have product  
container or label at hand.

#### Prevention:

P280

Wear protective gloves/ eye protection/ face  
protection.

P273

Avoid release to the environment.

#### Response:

P305 + P351 + P338

IF IN EYES: Rinse cautiously with  
water for several minutes. Remove contact  
lenses, if present and easy to do. Continue  
rinsing.

#### Storage:

Not applicable

#### 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:

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

### 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

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Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)
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	>= 70 - < 90
Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol	9003-36-5 500-006-8 01-2119454392-40	Skin Irrit. 2; H315 Skin Sens. 1; H317 Aquatic Chronic 2; H411	>= 2,5 - < 10
Terphenyl, hydrogenated	61788-32-7 262-967-7 01-2119488183-33	Aquatic Chronic 4; H413	>= 2,5 - < 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 : Treat symptomatically.  
Get medical attention if symptoms occur.
- If inhaled : If inhaled, remove to fresh air.  
Get medical attention if symptoms occur.
- In case of skin contact : Get medical attention if irritation develops and persists.
- In case of eye contact : Flush eyes with water as a precaution.  
Remove contact lenses.  
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.

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### 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 : No information available.

#### 5.3 Advice for firefighters

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

Specific extinguishing methods : Standard procedure for chemical fires.

Further information : No action shall be taken involving any personal risk or without suitable training.

### SECTION 6: Accidental release measures

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

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

#### 6.2 Environmental precautions

Environmental precautions : No special environmental precautions required.

#### 6.3 Methods and material for containment and cleaning up

Methods for cleaning up : Wipe up with absorbent material (e.g. cloth, fleece).  
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 : For personal protection see section 8.  
Smoking, eating and drinking should be prohibited in the application area.

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

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Hygiene measures : General industrial hygiene practice.

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

Requirements for storage areas and containers : No special storage conditions required. Keep in properly labelled containers.

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

Storage class (TRGS 510) : 10, Combustible liquids

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
Terphenyl, hydrogenated	61788-32-7	TWA	2 ppm 19 mg/m <sup>3</sup>	2017/164/EU
Further information	Indicative			
		STEL	5 ppm 48 mg/m <sup>3</sup>	2017/164/EU
Further information	Indicative			
		AGW (Inhalable fraction)	19 mg/m <sup>3</sup>	DE TRGS 900
Peak-limit: excursion factor (category)	2.5; (II)			
Further information	European Union (The EU has established a limit value: deviations in value and peak limit are possible)			

#### 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

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	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
Formaldehyde, oligomeric reaction products with 1-chloro- 2,3-epoxypropane and phenol	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
	Consumers	Inhalation	Long-term systemic effects	8,7 mg/m3
	Consumers	Oral	Long-term systemic effects	6,25 mg/kg
Terphenyl, hydrogenated	Workers	Inhalation	Long-term systemic effects	8,38 mg/m3
	Workers	Inhalation	Long-term local effects	83,8 mg/m3
	Workers	Dermal	Long-term systemic effects	46,3 mg/kg
	Workers	Dermal	Long-term local effects	0,2 mg/m3
	Consumers	Inhalation	Long-term systemic effects	2,5 mg/m3
	Consumers	Inhalation	Long-term local effects	25 mg/m3
	Consumers	Dermal	Long-term systemic effects	27,8 mg/kg
	Consumers	Dermal	Long-term local effects	1,23 mg/m3
	Consumers	Oral	Long-term systemic effects	0,3 mg/kg

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

Substance name	Environmental Compartment	Value
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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
Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol	Fresh water	0,003 mg/l
	Assessment Factors	
	Marine water	0,0003 mg/l
	Assessment Factors	
	Intermittent use/release	0,0254 mg/l
	Assessment Factors	
	Fresh water sediment	0,294 mg/kg
	Equilibrium method	
	Marine sediment	0,0294 mg/kg
	Equilibrium method	
	Soil	0,237 mg/kg
	Equilibrium method	
	Sewage treatment plant	10 mg/l
	Assessment Factors	
Terphenyl, hydrogenated	Fresh water	0 mg/l
	Marine water	0 mg/l
	Intermittent use/release	0,001 mg/l
	Sewage treatment plant	10,3 mg/l

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	Fresh water sediment	3,16 mg/kg
	Marine sediment	0,316 mg/kg
	Soil	0,631 mg/kg
	Secondary Poisoning	2,22 mg/kg

**8.2 Exposure controls**

**Personal protective equipment**

Eye protection : Tightly fitting safety goggles

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 : The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Skin and body protection : Choose body protection according to the amount and concentration of the dangerous substance at the work place.

**SECTION 9: Physical and chemical properties**

**9.1 Information on basic physical and chemical properties**

Appearance : liquid

Colour : colourless

Odour : slight

Odour Threshold : No data is available on the product itself.

pH : No data is available on the product itself.

Freezing point : No data is available on the product itself.

Melting point : No data is available on the product itself.

: > 200 °C

Flash point : 176 °C

Method: Pensky-Martens closed cup

Evaporation rate : No data is available on the product itself.



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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.
Vapour pressure	: No data is available on the product itself.
Relative vapour density	: No data is available on the product itself.
Relative density	: No data is available on the product itself.
Density	: 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.
Auto-ignition temperature	: No data is available on the product itself.
Decomposition temperature	: > 200 °C
Viscosity	
Viscosity, dynamic	: 18 000 - 45 000 mPa.s (25 °C)
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.

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### 10.5 Incompatible materials

Materials to avoid : None known.

### 10.6 Hazardous decomposition products

Hazardous decomposition products : carbon dioxide  
carbon monoxide  
Halogenated compounds

## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

#### Acute toxicity

##### Components:

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

Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol:

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

Terphenyl, hydrogenated:

Acute oral toxicity : LD50 (Rat, male and female): > 10 000 mg/kg  
Method: OECD Test Guideline 401  
GLP: yes  
Assessment: The substance or mixture has no acute oral toxicity

##### Components:

Terphenyl, hydrogenated:

Acute inhalation toxicity : LC50 (Rat, male and female): > 4,7 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Method: OECD Test Guideline 403  
GLP: yes  
Assessment: The substance or mixture has no acute inhalation toxicity

##### Components:

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

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Assessment: The substance or mixture has no acute dermal toxicity

Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol:

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

Terphenyl, hydrogenated:

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

Method: OECD Test Guideline 402

GLP: no

Assessment: The substance or mixture has no acute dermal toxicity

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

### Skin corrosion/irritation

#### Components:

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

Species: Rabbit

Assessment: Mild skin irritant

Method: OECD Test Guideline 404

Result: Irritating to skin.

Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol:

Species: Rabbit

Method: OECD Test Guideline 404

Result: Irritating to skin.

Terphenyl, hydrogenated:

Species: Rabbit

Exposure time: 24 h

Assessment: No skin irritation

Method: No information available.

Result: No skin irritation

### Serious eye damage/eye irritation

#### Components:

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

Species: Rabbit

Assessment: Mild eye irritant

Method: OECD Test Guideline 405

Result: Irritating to eyes.

Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol:

Species: Rabbit

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Method: OECD Test Guideline 405

Result: No eye irritation

Terphenyl, hydrogenated:

Species: Rabbit

Assessment: No eye irritation

Method: Draize Test

Result: No eye irritation

GLP: no

### Respiratory or skin sensitisation

#### Components:

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.

Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol:

Exposure routes: Skin

Species: Mouse

Method: OECD Test Guideline 429

Result: May cause sensitisation by skin contact.

Terphenyl, hydrogenated:

Species: Humans

Assessment: Does not cause skin sensitisation.

Method: Patch Test 24 Hrs.

Result: Does not cause skin sensitisation.

#### Components:

Terphenyl, hydrogenated:

Assessment: Does not cause skin sensitisation.

### Germ cell mutagenicity

#### Components:

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

Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol:

Genotoxicity in vitro : Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 471

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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

Terphenyl, hydrogenated:  
Genotoxicity in vitro

: Test Type: unscheduled DNA synthesis assay  
Test system: rat hepatocytes  
Concentration: 0.1 - 1000 µg/ml  
Metabolic activation: with and without metabolic activation  
Method: OECD Test Guideline 482  
Result: negative  
GLP: yes

: Test Type: Ames test  
Test system: Salmonella typhimurium  
Concentration: 0.01 - 10.0 µl/plate  
Metabolic activation: with and without metabolic activation  
Result: negative  
GLP: no

: Test Type: In vitro mammalian cell gene mutation test  
Test system: Chinese hamster ovary cells  
Metabolic activation: with and without metabolic activation  
Method: In vitro mammalian cell gene mutation test  
Result: negative  
GLP: yes

### Components:

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

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Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol:

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

Terphenyl, hydrogenated:

Genotoxicity in vivo : Test Type: in vivo assay  
Test species: Rat (male and female)  
Cell type: Bone marrow  
Application Route: Intraperitoneal injection  
Exposure time: Single administration  
Dose: 250, 1250, 2500 mg/kg bw  
Method: OECD Test Guideline 475  
Result: negative  
GLP: yes

### Components:

Terphenyl, hydrogenated:

Germ cell mutagenicity- : Animal testing did not show any mutagenic effects.  
Assessment

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

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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 body weight  
Symptoms: No adverse effects  
Method: OECD Test Guideline 416  
Result: No effects on fertility and early embryonic development were detected.

Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol:

Species: Rat, male and female  
Application Route: Oral  
Method: OECD Test Guideline 416  
Result: No effects on fertility and early embryonic development were detected.

Terphenyl, hydrogenated:

Test Type: Two-generation study  
Species: Rat, male and female  
Application Route: Oral  
Frequency of Treatment: 7 days/week  
General Toxicity - Parent: No observed adverse effect level: 1 000 ppm  
General Toxicity F1: No observed adverse effect level: 300 ppm  
Method: OECD Test Guideline 416  
Result: Animal testing did not show any effects on fertility.  
GLP: yes

#### Components:

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

Effects on foetal : Species: Rabbit, female

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development

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

Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol:

Species: Rabbit, female  
Application Route: Dermal  
General Toxicity Maternal: No observed adverse effect level:  
30 mg/kg body weight  
Result: No teratogenic effects

Terphenyl, hydrogenated:

Species: Rat, female  
Application Route: Oral  
Dose: 125, 500, 1500 mg/kg bw/d  
Frequency of Treatment: 1 daily  
General Toxicity Maternal: No observed adverse effect level:  
125 mg/kg body weight  
Embryo-foetal toxicity: No observed adverse effect level: 500  
mg/kg body weight  
Method: OECD Test Guideline 414  
GLP: yes

### Components:

Terphenyl, hydrogenated:  
Reproductive toxicity -  
Assessment

: No evidence of adverse effects on sexual function and fertility,  
or on development, based on animal experiments.

### **STOT - single exposure**

No data available

### **STOT - repeated exposure**

No data available

### **Repeated dose toxicity**

### Components:



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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

Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol:

Species: Rat, male and female

NOAEL: 250 mg/kg

Application Route: Ingestion

Exposure time: 13 Weeks Number of exposures: 7 d

Method: Subchronic toxicity

Terphenyl, hydrogenated:

Species: Rat, male and female

NOAEL: 12 mg/kg

LOAEL: 120 mg/kg

Application Route: oral (feed)

Exposure time: 14 weeks Number of exposures: 7 days/week

Method: OECD Test Guideline 408

GLP: yes

Species: Rat, male and female

NOAEL: 0,1 mg/l

LOAEL: 0,5 mg/l

Application Route: Inhalation

Exposure time: 90 days Number of exposures: 6 hours/day, 5 days/week (67 n

Dose: 0, 10, 100, 500 mg/m<sup>3</sup>

Method: OECD Test Guideline 413

GLP: yes

Species: Rabbit, male and female

NOAEL: 2 000 mg/kg

Application Route: Dermal

Exposure time: 21 days Number of exposures: 6 hours/day, 5 days/week

Dose: 125, 500, 2000 mg/kg bw/d

Method: Subacute toxicity

GLP: yes

Target Organs: Skin

### Components:

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Terphenyl, hydrogenated:  
Repeated dose toxicity - Assessment : No adverse effect has been observed in chronic toxicity tests.

### 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

### 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:

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 : EC50 (Daphnia magna (Water flea)): 2,7 mg/l

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aquatic invertebrates	Exposure time: 48 h 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
Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol:	
Toxicity to fish	: LC50 (Fish): 2,54 mg/l Exposure time: 96 h 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 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
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 Remarks: Information given is based on data obtained from similar substances.
Terphenyl, hydrogenated:	
Toxicity to fish	: LC50 : > 100 mg/l Exposure time: 96 h

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Toxicity to algae/aquatic plants : EC50 : 56 mg/l  
Exposure time: 96 h

Toxicity to microorganisms : NOEC (activated sludge): 103 mg/l  
Exposure time: 3 h  
Test Type: static test  
Method: OECD Test Guideline 209  
GLP: yes

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOELR: < 1 mg/l  
Exposure time: 21 d  
Species: Daphnia magna (Water flea)  
Test Type: semi-static test  
Method: OECD Test Guideline 211  
GLP: yes

Ecotoxicology Assessment  
Acute aquatic toxicity : This product has no known ecotoxicological effects.

Chronic aquatic toxicity : May cause long lasting harmful effects to aquatic life.

### 12.2 Persistence and degradability

#### Components:

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

Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol:

Biodegradability : 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.

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### 12.3 Bioaccumulative potential

#### Components:

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

Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol:

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

Terphenyl, hydrogenated:

Partition coefficient: n-octanol/water : log Pow: 6,5

### 12.4 Mobility in soil

#### Components:

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

Distribution among environmental compartments : Koc: 445

Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol:

Distribution among environmental compartments : Koc: 4460  
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

No data available

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

Product : Dispose of as hazardous waste in compliance with local and national regulations.  
Dispose of contents/ container to an approved waste disposal plant.

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### SECTION 14: Transport information

#### IATA

**14.1 UN number** : UN 3082

**14.2 UN proper shipping name** : Environmentally hazardous substance, liquid, n.o.s.  
(BISPHENOL F EPOXY RESIN, BISPHENOL A EPOXY RESIN)

**14.3 Transport hazard class(es)** : 9

**14.4 Packing group** : III

Labels : Miscellaneous

Packing instruction (cargo aircraft) : 964

Packing instruction (passenger aircraft) : 964

#### IMDG

**14.1 UN number** : UN 3082

**14.2 UN proper shipping name** : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.  
(BISPHENOL F EPOXY RESIN, BISPHENOL A EPOXY RESIN)

**14.3 Transport hazard class(es)** : 9

**14.4 Packing group** : III

Labels : 9

EmS Code : F-A, S-F

**14.5 Environmental hazards**

Marine pollutant : yes

#### ADR

**14.1 UN number** : UN 3082

**14.2 UN proper shipping name** : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.  
(BISPHENOL F EPOXY RESIN, BISPHENOL A EPOXY RESIN)

**14.3 Transport hazard class(es)** : 9

**14.4 Packing group** : III

Labels : 9

**14.5 Environmental hazards**

Environmentally hazardous : yes

#### RID

**14.1 UN number** : UN 3082

**14.2 UN proper shipping name** : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.  
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**14.3 Transport hazard** : 9

**class(es)**

**14.4 Packing group** : III

**Labels** : 9

**14.5 Environmental hazards**

**Environmentally hazardous** : yes

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

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

REACH - Candidate List of Substances of Very High : Terphenyl, hydrogenated  
Concern for Authorisation (Article 59).

Water contaminating class : WGK 2 obviously hazardous to water  
(Germany)

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

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 : 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 : 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

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.
H413	: May cause long lasting harmful effects to aquatic life.

### Full text of other abbreviations

Aquatic Chronic	: Long-term (chronic) aquatic hazard
Eye Irrit.	: Eye irritation
Skin Irrit.	: Skin irritation
Skin Sens.	: Skin sensitisation
2017/164/EU	: Commission Directive (EU) 2017/164 establishing a fourth list of indicative occupational exposure limit values pursuant to Council Directive 98/24/EC, and amending Commission Directives 91/322/EEC, 2000/39/EC and 2009/161/EU
DE TRGS 900	: Germany. TRGS 900 - Occupational exposure limit values.
2017/164/EU / STEL	: Short term exposure limit
2017/164/EU / TWA	: Limit Value - eight hours
DE TRGS 900 / AGW	: Time Weighted Average

### 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

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