

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

HUNTSMAN

Enriching lives through innovation

ARALDITE® 2011 RESIN

Version	Revised on:	SDS number:	Date of the last issue: 15.06.2018
1.3	27.09.2021	400001015903	Date of the first issue: 23.01.2018

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

1.1 Product identifier

Trade name : ARALDITE® 2011 RESIN

Clearer : UWE2-J0Q1-A00T-K90C

Recipe identifier (UFI)

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

Use of the substance/substance
Mixture : Adhesives

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

Fax : +41 61 299 20 40

E-mail address of the person responsible for SDB
responsible person : Global_Product_EHS_AdMat@huntsman.com

1.4 Emergency number

Emergency 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
Munich: 0049 89 19 24 0
Nuremberg: 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

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SECTION 2: Potential hazards

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No

1272/2008)
Irritant effect on the skin, category 2

H315: Causes skin irritation.

Eye irritation, category 2

H319: Causes serious eye irritation.

Sensitization through skin contact,
Category 1

H317: May cause an allergic skin
reaction cause.

Long-term (chronic)
hazardous to water, category 2

H411: Toxic to aquatic organisms, with
long-term effect.

2.2 Labeling elements

Labeling (REGULATION (EC) No 1272/2008)

Hazard pictograms

:



Signal word

:

Attention

Hazard warnings

:

H315Causes skin irritation.
H317May cause an allergic skin reaction.
H319Causes serious eye irritation.
H411Toxic to aquatic life with long lasting effects.

Safety instructions

:

Prevention:

P261Avoid breathing mist or vapor.
P264Wash skin thoroughly after handling.
P273Avoid release to the environment.
P280Wear protective gloves/ eye protection/ face
protection.

Reaction:

P333 + P313
If skin irritation or rash occurs: Seek medical advice.
Seek advice/medical assistance.

P391
Pick up spillage.

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Hazard-determining component(s) for labeling:

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

Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol (BPFEDGE)

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

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2.3 Other dangers

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.

Environmental information: The substance/mixture does not contain components with endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated Regulation (EU) 2017/2100 or Commission Delegated Regulation (EU) 2018/605 in quantities of 0.1% or more.

Toxicological information: The substance/mixture does not contain components with endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated Regulation (EU) 2017/2100 or Commission Delegated Regulation (EU) 2018/605 in quantities of 0.1% or more.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Hazardous ingredients

Chemical name	CAS No. EC No. INDEX- No. Registration number	Classification	Concentration (% w/w)
2,2'-[(1-methylethylidene)bis(4,1-phenylene oxymethylene)]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 Specific Concentration limits rte Skin Irrit. 2; H315 >= 5 % Eye Irrit. 2; H319 >= 5 %	>= 70 - < 90
Formaldehyde, oligomeric Reaction products with 1-chloro- 2,3-epoxypropane and phenol (BPFGE)	- - 01-2119454392-40	Skin Irrit. 2; H315 Skin Sens. 1; H317 Aquatic Chronic 2; H411	>= 2,5 - < 10
Bisphenol A - epoxy resins, number average MW >700 - <1100	25068-38-6 Polymer	Skin Irrit. 2; H315 Eye Irrit. 2; H319 Skin Sens. 1; H317	>= 1 - < 10

An explanation of the abbreviations can be found in section 16.

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

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SECTION 4: First aid measures

4.1 Description of first aid measures

General information	: Remove affected persons from the danger zone. Show this safety data sheet to the attending physician. Symptomatic treatment. If symptoms occur, seek medical attention.
Protection of first responders	: First aiders should pay attention to self-protection and wear the recommended protective clothing If there is a risk of exposure, see section 8 regarding personal protective equipment. Avoid inhalation, ingestion and contact with skin and eyes. No measures should be taken that involve personal risk or that have not been sufficiently trained. It can be dangerous for the person providing first aid to perform mouth-to-mouth resuscitation.
After inhalation	: In case of inhalation, remove to fresh air. If symptoms occur, seek medical attention.
After skin contact	: If skin irritation persists, consult a doctor. If on skin, rinse well with water. If on clothes, take off clothes.
After eye contact	: In case of contact with eyes, rinse immediately with plenty of water. Remove contact lenses. Keep your eyes wide open when rinsing. If eye irritation persists, consult a specialist.
After ingestion	: Keep airways clear. Never give anything by mouth to an unconscious person. If symptoms persist, consult a doctor.

4.2 Most important symptoms and effects, both acute and delayed

None known.

4.3 Information on immediate medical assistance or special treatment

Treatment : Symptomatic treatment.

SECTION 5: Fire-fighting measures

5.1 Extinguishing agent

Suitable extinguishing agents : Water mist
Alcohol-resistant foam

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Unsuitable extinguishing agents	:	Carbon dioxide (CO ₂) Dry extinguishing agent Care must be taken when using a water jet to prevent the fire from scattering and spreading.
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5.2 Special hazards arising from the substance or mixture

Particular dangers during Fire fighting	:	Do not discharge water from firefighting into the waste water or into watercourses.
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Hazardous combustion products	:	Carbon oxides Halogenated compounds Carbon dioxide (CO ₂) Carbon monoxide
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5.3 Instructions for firefighting

Special protective equipment for the Fire fighting	:	In the event of fire, wear self-contained breathing apparatus if necessary.
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Specific deletion methods	:	Adapt extinguishing measures to the surroundings.
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Further information	:	Collect contaminated extinguishing water separately and do not allow it to enter the sewage system. Fire residues and contaminated 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 data	:	Use personal protective equipment.
Precautionary measures	:	See protective measures under points 7 and 8.

6.2 Environmental protection measures

Environmental protection measures	:	Take precautions to ensure that the product does not enter the sewage system. Prevent further leakage or spillage if this is possible without risk. In the event of contamination of water bodies or the sewage system, inform the responsible authorities.
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6.3 Methods and material for retention and cleaning

Cleaning process	:	Absorb with inert liquid-binding material (e.g. sand, silica gel, acid binder, universal binder, sawdust). For disposal in suitable and sealed containers
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give.

6.4 Reference to other sections

See section 13 for disposal instructions, see section 1 for emergency contact information, see section 8 for personal protective equipment.

SECTION 7: Handling and storage

7.1 Protective measures for safe handling

Notes on safe handling : Repeated or prolonged skin contact may cause skin irritation and/or dermatitis, or sensitization in sensitive individuals. In case of asthma, eczematous skin diseases or skin problems, avoid contact, including skin contact, with the product. Do not inhale vapors/dust. Avoid exposure - obtain special instructions before use. Avoid contact with eyes and skin. For personal protective equipment see section 8. Do not eat, drink or smoke in the application area. Dispose of rinsing water in accordance with local and national regulations.

Notes on fire and explosion protection : Standard fire prevention measures.

Hygiene measures : Do not eat or drink at work. Do not smoking. Wash hands before breaks and at the end of work.

7.2 Conditions for safe storage, taking into account incompatibilities

Requirements for storage rooms and containers : Keep containers tightly closed in a dry, well-ventilated place. Carefully close opened containers and store upright to prevent any leakage. Store in correctly labeled containers.

Storage instructions : Information on incompatible materials can be found in section 10 of this SDS.

Storage class (TRGS 510) : 10, Flammable liquids

Recommended storage temperature : 2 - 40 °C

Further information on the Storage stability : Stable under normal conditions.

7.3 Specific end uses

Specific use(s) : No data available

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SECTION 8: Exposure controls/personal protective equipment

8.1 Parameters to be monitored

Occupational exposure

Ingredients	CAS No.	Value type (type of exposure)	Parameters to be monitored	Basis
Silicic acid, amorphous, pyrogenic, crystalline-free	112945-52-5	AGW (Inhalable fraction)	4 mg/m ³ (silicon dioxide)	DE TRGS 900
Further information	A risk of fruit damage need not be feared if the occupational exposure limit value and the biological limit value (BGW) are complied with			

Derived no-effect level (DNEL) according to Regulation (EC) No 1907/2006:

Substance name	Application area	Exposure path e	Possible damage to health	Value
2,2'-[(1-methyl ethylidene)to(4,1-phenylene oxymethylene)] bisoxirane	Employees	Inhalation	Long-term systemic effects	4.93 mg/m ³
	Employees	Skin	Long-term systemic effects	0.75 mg/kg body weight/day
	Consumers	Inhalation	Long-term systemic effects	0.87 mg/m ³
	Consumers	Skin	Long-term systemic effects	0.0893 mg/kg body weight/day
	Consumers	Oral	Long-term systemic effects	0.5 mg/kg body weight/day
Bis(2-ethylhexyl) adipate	Employees	Inhalation	Long-term systemic effects	17.8 mg/m ³
	Employees	Skin	Long-term systemic effects	25.5 mg/kg body weight/day
	Consumers	Inhalation	Long-term systemic effects	4.4 mg/m ³
	Consumers	Skin	Long-term systemic effects	13 mg/kg body weight/day
	Consumers	Oral	Long-term systemic effects	1.7 mg/kg body weight/day
Formaldehyde, oligomeric	Employees	Skin	Acute - local effects	0,0083

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Reaction products with 1-chloro-2,3-epoxypropane and phenol (BPFEDGE)				mg/cm2
	Employees	Skin	Long-term systemic effects	104.15 mg/kg
	Employees	Inhalation	Long-term systemic effects	29.39 mg/m3
	Consumers	Skin	Long-term systemic effects	62.5 mg/kg body weight/day
	Consumers	Inhalation	Long-term systemic effects	8.7 mg/m3
	Consumers	Oral	Long-term systemic effects	6.25 mg/kg body weight/day
Silicic acid, amorphous, pyrogenic, crystalline-free	Employees	Inhalation	Long-term systemic effects	4 mg/m3

Estimated 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
	Seawater	0.001 mg/l
	Freshwater sediment	0.341 mg/kg dry weight (TW)
	Marine sediment	0.034 mg/kg dry weight (TW)
	Floor	0.065 mg/kg dry weight (TW)
	Sewage treatment plant	10 mg/l
	Secondary poisoning	11 mg/kg
Bis(2-ethylhexyl) adipate	Floor	0.865 mg/kg dry weight (TW)
Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol (BPFEDGE)	Fresh water	0.003 mg/l
Notes:	Valuation factors	
	Seawater	0 mg/l
	Valuation factors	
	Temporary use/release	0.0254 mg/l

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	Valuation factors	
	Freshwater sediment	0.294 mg/kg dry weight (TW)
	Equilibrium method	
	Marine sediment	0.0294 mg/kg dry weight (TW)
	Equilibrium method	
	Floor	0.237 mg/kg dry weight (TW)
	Equilibrium method	
	Sewage treatment plant	10 mg/l
	Valuation factors	

8.2 Exposure controls Personal protective

equipment

Eye protection : Eyewash bottle with pure water Tight-fitting safety goggles
Wear a face shield and protective suit in case of processing difficulties.

Hand protection

Material : Butyl rubber
Breakthrough time : > 8 h

Material : Solvent-resistant protective gloves (butyl rubber)

Material : Nitrile rubber
Breakthrough time : 10 - 480 min

Material : Neoprene gloves

Notes : Chemical resistant, impervious gloves complying with a recognized standard must always be worn when handling chemical products if a risk assessment requires this.
Workplace-specific suitability should be checked with the protective glove manufacturers.

Skin and body protection : Impermeable protective clothing
Select body protection according to the quantity and concentration of the hazardous substance at the workplace.

Respiratory protection : Use respiratory protection unless suitable local exhaust ventilation is available or a
Exposure assessment shows that the exposure is within the relevant guidelines.

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The equipment should comply with EN 14387

Filter type : Combination type particles and organic vapors (A-P)

SECTION 9: Physical and chemical properties

9.1 Information on the basic physical and chemical properties

Physical state	: Paste
Color	: transparent
Odor	: light
Odor threshold	: No data is available for the product itself.
pH value	: approx. 6 (20 °C) Concentration: 500 g/l
Melting point/freezing point	: No data available
Boiling point	: > 200 °C
Flash point	: 210 °C Method: Pensky-Martens closed crucible 260 °C Method: Cleveland open crucible
Flammability (solid, gaseous)	: No data is available for the product itself.
Upper explosion limit / Upper flammability limit	: No data is available for the product itself.
Lower explosion limit / Lower Flammability limit	: No data is available for the product itself.
Vapor pressure	: < 0.001 hPa (20 °C)
Relative vapor density	: No data is available for the product itself.
Relative density	: No data is available for the product itself.
Density	: 1.15 g/cm ³ (25 °C)
Solubility(ies) Water solubility	: practically insoluble (20 °C)
Solubility in other Solvents	: No data is available for the product itself.
Partition coefficient: n-	: No data is available for the product itself.

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Octanol/water

Auto-ignition temperature : No data is available for the product itself.

Decomposition temperature : > 200 °C

Viscosity

Viscosity, dynamic : 30 000 - 50 000 mPa.s (25 °C)

9.2 Other information

Explosive properties : No data is available for the product itself.

Oxidizing properties : No data is available for the product itself.

Burning speed : No data is available for the product itself.

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

Molecular weight : No data available

SECTION 10: Stability and reactivity

10.1 Reactivity

No hazardous reactions known if handled as directed.

10.2 Chemical stability

Stable under normal conditions.

10.3 Possibility of hazardous reactions

Dangerous reactions : No dangers worth mentioning.

10.4 Conditions to avoid

Conditions to avoid : None known.

10.5 Incompatible materials

Substances to avoid : Strong acids
Strong bases
Strong oxidizing agents

10.6 Hazardous decomposition products

Hazardous decomposition products : Carbon dioxide
Carbon monoxide
Halogenated compounds

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SECTION 11: Toxicological information

11.1 Information on hazard classes according to Regulation (EC) No. 1272/2008

Acute toxicity

Ingredients:

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
Remarks: No mortality was observed at this dosage.

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

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

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

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

Acute inhalation toxicity : No data available

Ingredients:

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

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

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

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

Acute 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

Acute toxicity (other) : No data available

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routes of administration)

Corrosive/irritant effect on the skin

Ingredients:

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

Species: Rabbit Exposure

time: 4 h Assessment:

Irritating to skin.

Method: OECD Test Guideline 404

Result: Irritating to skin.

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

(BPFEDGE): Species: Rabbit

Method: OECD Test Guideline 404

Result: Irritating to skin.

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

Method: OECD Test Guideline 404

Result: Skin irritation

Serious eye damage/irritation

Ingredients:

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

Species: Rabbit Assessment:

Irritating to eyes.

Method: OECD Test Guideline 405

Result: Irritating to eyes.

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

(BPFEDGE): Species: Rabbit

Method: OECD Test Guideline 405

Result: No eye irritation

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

Species: Rabbit

Method: OECD Test Guideline 405

Result: Eye irritation

Sensitization of the respiratory tract/skin

Ingredients:

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

Type of test: Local lymph node assay (LLNA) Route of exposure:

Skin

Species: Mouse

Method: OECD Test Guideline 429

Result: The product is a skin sensitizing substance, subcategory 1B.

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

(BPFEDGE): Type of test: Local lymph node assay (LLNA)

Route of exposure:

Skin Species: Mouse

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Method: OECD Test Guideline 429

Result: May cause sensitization by skin contact.

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

Exposure routes: Skin

Species: Guinea pig Method: OECD

Test Guideline 406

Result: May cause sensitization by skin contact.

Rating: No data available

Germ cell mutagenicity

Ingredients:

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

Genotoxicity in vitro : Type of test: In vitro gene mutation test on mammalian cells
Test system: Lymphoma cells from mice Metabolic activation:
without metabolic activation Result: positive

: Type of test: Back mutation assay Test
system: Salmonella typhimurium
Metabolic activation: with and without metabolic activation
Method: Mutagenicity (Salmonella typhimurium - reverse
mutation test)
Result: negative

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

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

: Metabolic activation: with and without metabolic
activation
Method: OECD Test Guideline 473 Result:
positive

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

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

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

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achieved.

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

Ingredients:

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

Genotoxicity in vivo : Type of test: in vivo test Test species: Mouse (male) Cell type: Germ Route of administration: Oral Dose: 3333, 10000 mg/kg Result: negative

Type of test: Gene mutation test
Test species: Rat (male) Cell type: Somatic Route of administration: Oral
Dose: 50,250,500,1000 mg/kg bw/day
Method: OECD Test Guideline 488
Result: negative

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

Genotoxicity in vivo : Cell type: Somatic
Route of administration: Oral
Exposure time: 48 h
Dose: 2000 mg/kg
Method: OECD Test Guideline 474 Result: negative

Cell type: Somatic
Route of administration: Oral
Dose: 2000 mg/kg
Method: OECD Test Guideline 486 Result: negative

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

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

Cell type: Somatic
Route of administration: Oral
Dose: 0 - 5000 mg/kg

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Method: OPPTS 870.5395

Result: negative

Germ cell mutagenicity- Rating : No data available

Carcinogenicity

Ingredients:

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

Species: Rat, male Route of

administration: Oral Exposure time:

24 month(s)

Dose: 0, 2, 15, or 100 mg/kg bw/day

Frequency of treatment: 7 days / week

Dose at which no adverse health effects were observed: 15 mg/kg body weight/day

Method: OECD Test Guideline 453

Result: negative

Target organs: Digestive organs

Species: Mouse, male Application

route: Skin Exposure time: 24

month(s)

Dose: 0, 0.1, 10, 100 mg/kg bw/day

Frequency of treatment: 3 days / week Dose

without effect: 0.1 mg/kg body weight Method:

OECD Test Guideline 453

Result: negative

Target organs: Digestive organs

Species: Rat, female Route of

administration: Skin Exposure time:

24 month(s)

Dose: 0.1, 100, 1000 mg/kg bw/day

Frequency of treatment: 5 days / week

Dose without effect: 100 mg/kg body weight Method:

OECD Test Guideline 453

Result: negative

Species: Rat, female Route of

administration: Oral Exposure time:

24 month(s)

Dose: 0, 2, 15, or 100 mg/kg bw/day

Frequency of treatment: 7 days / week

Dose at which no adverse health effects were observed: 100 mg/kg body weight/day

Method: OECD Test Guideline 453

Result: negative

Target organs: Digestive organs

Species: Rat, female

Route of administration: Oral

Exposure time: 24 month(s)

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Dose: 0, 2, 15, or 100 mg/kg bw/day
Frequency of treatment: 7 days / week
Dose without effect: 2 mg/kg body weight/day Method:
OECD Test Guideline 453
Result: negative
Target organs: Digestive organs

Bisphenol A - epoxy resins, number average MW >700 - <1100:
Species: Rat, male and female Route
of administration: Oral Exposure time:
24 month(s)
Dose: 15 mg/kg
Frequency of treatment: 7 daily
Method: OECD Test Guideline 453
Result: negative

Carcinogenicity - Assessment : No data available

Reproductive toxicity

Ingredients:

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

Effect on fertility : Type of test: Two-generation study Species:
Rat, male and female Route of administration:
Oral
Dose: 0, 50, 180, 540 or 750 milligrams per kilogram
Duration of individual treatment: 238 d
Frequency of treatment: 1 daily
General toxicity Parents: Dose without effect: 540 mg/kg
body weight
General toxicity F1: Dose without effect: 750 mg/kg body
weight
Symptoms: No adverse effects. Method: OECD
Test Guideline 416
Result: No effect on fertility and early embryonic
development was observed.

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

Type of test: Two-generation study
Species: Rat, male and female Route of
administration: Oral
Dose: 0, 50, 180, 540 or 750 mg/kg/
Duration of individual treatment: 238 d
General toxicity Parents: Dose without effect: 750 General
toxicity F1: Dose without effect: 750 mg/kg body weight
General toxicity F2: NOAEL: 750 mg/kg body weight
Method: OECD Test Guideline 416
Result: No effect on fertility and early embryonic
development was observed.
GLP: yes
Remarks: The information given is based on data for similar
substances.

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

Species: Rat, male and female Route of administration: Oral

General toxicity Parents: Dose without effect: 750 mg/kg body weight

General toxicity F1: Dose without effect: 750 mg/kg body weight

Method: OECD Test Guideline 416

Result: No effect on fertility and early embryonic development was observed.

Ingredients:

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

Effects on fetal development : Species: Rabbit, female Route of administration: Skin

Dose: 0, 30, 100 or 300 milligrams per kilogram

Duration of individual treatment: 28 d

Frequency of treatment: 1 daily

General maternal toxicity: Dose at which no adverse health effects were observed: 30 mg/kg body weight

Developmental damage: Dose at which no adverse health effects were observed: 300 mg/kg body weight

Method: Other guidelines

Result: No mutagenic effects.

Type of test: Prenatal

Species: Rabbit, female

Route of administration: Oral

Dose: 0, 20, 60 or 180 milligrams per kilogram Duration of individual treatment: 13 d

Frequency of treatment: 1 daily

General maternal toxicity: Dose at which no adverse health effects were observed: 60 mg/kg body weight

Developmental damage: Dose at which no adverse health effects were observed: 180 mg/kg body weight

Method: OECD Test Guideline 414

Result: No mutagenic effects.

Type of test: Prenatal Species: Rat,

female Route of administration: Oral

Dose: 0, 60, 180 and 540 milligrams per kilogram

Duration of each treatment: 10 d

Frequency of treatment: 1 daily

General maternal toxicity: Dose at which no adverse health effects were observed: 180 mg/kg body weight

Developmental damage: Dose at which no adverse health effects have been observed: > 540 mg/kg body weight

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Method: OECD Test Guideline 414

Result: No mutagenic effects.

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

Species: Rabbit, female Route

of administration: Skin

General maternal toxicity: Dose at which no adverse health effects were observed: 30 mg/kg body weight

Method: Other guidelines

Result: No mutagenic effects.

Species: Rabbit, female Route

of administration: Oral

General maternal toxicity: Dose at which no adverse health effects were observed: 60 mg/kg body weight

Method: OECD Test Guideline 414

Result: No mutagenic effects.

Species: Rat, female Route of

administration: Oral

General maternal toxicity: Dose at which no adverse health effects were observed: 180 mg/kg body weight

Method: OECD Test Guideline 414

Result: No mutagenic effects.

Reproductive toxicity - Rating : No data available

Specific target organ toxicity at single exposure

No data available

Specific target organ toxicity with repeated exposure

No data available

Repeated dose toxicity

Ingredients:

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

Species: Rat, male and female

NOAEL: 50 mg/kg

Route of administration: oral (tube feeding) 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

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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

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

(BPFDE): Species: Rat, male and female

NOAEL: 250 mg/kg Route of

administration: Ingestion

Exposure time: 13 weeks Number of exposures: 7 d Method:

Subchronic toxicity

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

Species: Rat, male and female

NOAEL: 50 mg/kg

Route of administration: 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

Repeated dose toxicity : No data available

Administration - Evaluation

Aspiration toxicity

No data available

11.2 Information on other hazards

Endocrine disrupting properties

Product:

Rating : The substance/mixture does not contain components that are endocrine disruptors according to REACH Article 57(f) or Commission Delegated Regulation (EU) 2017/2100 or Commission Delegated Regulation (EU) 2018/605 in quantities of 0.1% or more. have.

Experience with human exposure

General information: No data available

Inhalation: No data available

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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: Environmental information

12.1 Toxicity

Ingredients:

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

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 aquatic invertebrates : EC50 (Daphnia magna (Large water flea)): 1.8 mg/l
Exposure time: 48 h
Type of test: static test Test substance: fresh water Method: OECD Test Guideline 202

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

NOEC : 4,2 mg/l Exposure time: 72 h
Type of test: static test Test substance: Fresh water Method: EPA-660/3-75-009

Toxicity with : IC50 (activated sludge): > 100 mg/l

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Microorganisms

Exposure time: 3 h
Type of test: 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 (large water flea)
Type of test: semistatic test
Test substance: fresh water
Method: OECD Test Guideline 211

Assessment of ecotoxicity
Chronic aquatic Toxicity

: Toxic to aquatic organisms, with long lasting effects.

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

Toxicity to fish

: LC50 (fish): 2.54 mg/l
Exposure time: 96 h
Test substance: Fresh water
Method: Calculation method

Toxicity to daphnia and other aquatic invertebrates

: EC50 (Daphnia magna (Large water flea)): 2.55 mg/l
Exposure time: 48 h
Method: Calculation method

Toxicity to algae/aquatic plants

: EC50 (Selenastrum capricornutum (green alga)): > 1.8 mg/l
Exposure time: 72 h
Type of test: static test
Concomitant analysis: yes
Test substance: fresh water
Method: OECD Test Guideline 201
GLP: no

Toxicity with microorganisms

: IC50 (activated sludge): > 100 mg/l
Exposure time: 3 h
Type of test: static test
Concomitant analysis: no
Test substance: Fresh water
GLP: no

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)

: NOEC: 0.3 mg/l
Exposure time: 21 d
Species: Daphnia magna (large water flea)
Type of test: semistatic test
Concomitant analysis: no
Test substance: Freshwater
Method: OECD Test Guideline 211
GLP: yes
Remarks: The information given is based on data for similar substances.

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

Toxicity to fish

: LC50 (Oncorhynchus mykiss (rainbow trout)): > 100 mg/l
Exposure time: 96 h
Type of test: static test

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Test substance: Freshwater
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (large water flea)): > 100 mg/l
Exposure time: 48 h
Type of test: static test
Test substance: fresh water
Method: OECD Test Guideline 202

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

12.2 Persistence and

degradability Ingredients:

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

Biodegradability : Type of test: aerobic
Inoculation culture: activated sludge, non-adapted
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 value: 4
Method: OECD Test Guideline 111
Remarks: Fresh water

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

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

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

Biodegradability : Type of test: aerobic
Inoculation culture: activated sludge
Concentration: 3 mg/l
Result: Not biodegradable
Biodegradation: approx. 0 %
Exposure time: 28 d
Method: Directive 67/548/EEC, Annex V, C.4.E.

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

Biodegradability : Type of test: aerobic
Inoculation culture: Waste water (STP waste water)
Concentration: 20 mg/l
Result: Not biodegradable

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Biodegradation: 5 % Exposure time: 28 d
Method: OECD Test Guideline 301F

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

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

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

12.3 Bioaccumulative potential

Ingredients:

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

Bioaccumulation : Bioconcentration factor (BCF): 31
Remarks: No bioaccumulation.

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

Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol (BPFEDGE):
Bioaccumulation : Species: Fish Bioconcentration factor (BCF): 150
Remarks: No bioaccumulation.

Partition coefficient: n-octanol/water : log Pow: 2.7 - 3.6
Method: OECD Test Guideline 117
GLP: yes

Bisphenol A - epoxy resins, number average MW >700 - <1100:
Bioaccumulation : Species: Fish
Bioconcentration factor (BCF): 31
Remarks: No bioaccumulation.

12.4 Mobility in soil

Ingredients:

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

Distribution between the : Koc: 445
Environmental compartments

Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol (BPFEDGE):
Distribution between the : Koc: 4460
Environmental compartments : Method: OECD Test Guideline 121

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

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Distribution between the
Environmental
compartments : Koc: 445

12.5 Results of PBT and vPvB assessment

Product:

Rating : This substance/mixture contains no components in concentrations equal to or greater than 0.1% that may be classified as either persistent, bioaccumulative and toxic (PBT) or very persistent

12.6 Endocrine disrupting properties

Product:

Rating : The substance/mixture does not contain components that are subject to REACH Article 57(f) or Commission Delegated Regulation (EU) 2017/2100 or Commission Delegated Regulation (EU) 2018/605 in quantities of 0.1 % or more have endocrine-disrupting properties.

12.7 Other adverse effects

Product:

Other ecological
information : An environmental hazard cannot be ruled out in the event of improper handling or disposal.
Toxic to aquatic organisms, with long lasting effects.

SECTION 13: Disposal instructions

13.1 Waste treatment processes

Product : Dispose of contents and container in accordance with all local, regional, national and international laws.
Do not pour waste down the sink.
Do not contaminate standing or flowing water with chemical or packaging material.

Contaminated packaging : Empty leftovers.
Dispose of as unused product. Do not reuse empty containers.

SECTION 14: Transport information

14.1 UN number or ID number

ADN	: UN 3082
ADR	: UN 3082
RID	: UN 3082
IMDG	: UN 3082

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IATA : UN 3082

14.2 UN proper shipping name

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

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

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

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

IATA : Environmentally hazardous substance, liquid, n.o.s.
(BISPHENOL A EPOXY RESIN, BISPHENOL F EPOXY RESIN)

14.3 Transport hazard classes

ADN : 9

ADR : 9

RID : 9

IMDG : 9

IATA : 9

14.4 Packaging group

ADN

Packaging group : III
Classification code : M6
Number for identification the danger : 90
Hazard label : 9

ADR

Packaging group : III
Classification code : M6
Number to identify the hazard : 90

Hazard label : 9
Tunnel restriction code : (-)

RID

Packaging group : III
Classification code : M6
Number for identification the danger : 90
Hazard label : 9

IMDG

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Packaging group : III
Hazard label : 9
EmS code : F-A, S-F

IATA (freight)

Packing instructions (cargo plane) : 964
Packing instructions (LQ) : Y964
Packaging group : III
Hazard label : Miscellaneous

IATA (Passenger)

Packing instructions (passenger aircraft) : 964
Packing instructions (LQ) : Y964
Packaging group : III
Hazard label : Miscellaneous

14.5 Environmental hazards

ADN

Environmentally hazardous : Yes

ADR

Environmentally hazardous : Yes

RID

Environmentally hazardous : Yes

IMDG

Marine pollutant : Yes

IATA (Passenger)

Environmentally hazardous : Yes

IATA (freight)

Environmentally hazardous : Yes

14.6 Special precautions for the user

The transport classification(s) provided herein are for informational purposes only and are based solely on the properties of the unpackaged material as described in this safety data sheet. Transport classifications may vary with the means of transportation, package size and variations in regional or country regulations.

14.7 Transport of bulk goods by sea in accordance with IMO instruments

Not applicable to product as delivered.

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SECTION 15: Legislation

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

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

REACH - List of substances of very high concern for authorization (Article 59). : This product does not contain any substances of very high concern. substances (REACH Regulation (EC) No. 1907/2006, Article 57).

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Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.

E2 ENVIRONMENTAL
HAZARDS

Water hazard class : WGK 2 clearly hazardous to water
Classification according to AwSV,
Annex 1 (5.2)

TA Luft : Total dust:
Not applicable
: Dusty inorganic substances: Not
applicable
: Vaporous or gaseous inorganic substances:
Not applicable
: Organic
substances: Not
applicable
: Carcinogenic
substances: Not
applicable
: Mutagenic:
Not applicable
: Toxic for reproduction:
Not applicable

Other regulations:

Observe employment restrictions in accordance with Directive 94/33/EC on the protection of young people at work or stricter national provisions, where applicable.

The components of this product are listed in the following directories:

DSL : All ingredients of this product are listed on the Canadian
DSL list

AIIC : Is on the list or fulfills its requirements

NZIoC : Is on the list or fulfills its requirements

ENCS : Is on the list or fulfills its requirements

KECI : Is on the list or fulfills its requirements

PICCS : Is on the list or fulfills its requirements

IECSC : Is on the list or fulfills its requirements

TCSI : Is on the list or fulfills its requirements

TSCA : All substances are listed as active in the TSCA inventory.
listed

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Directories

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

15.2 Chemical safety assessment

The substance evaluations for all substances in this product have either been completed or do not apply.

SECTION 16: Other information

Full text of the H-phrases

H315	: Causes skin irritation.
H317	: May cause allergic skin reactions.
H319	: Causes serious eye irritation.
H411	: Toxic to aquatic organisms, with long lasting effects.

Full text of other abbreviations

Aquatic Chronic	: Long-term (chronic) water hazard
Eye Irrit.	: Eye irritation
Skin Irrit.	: Irritant effect on the skin
Skin Sens.	: Sensitization through skin contact
DE TRGS 900	: TRGS 900 - Occupational exposure limits
DE TRGS 900 / AGW	: Occupational exposure limit

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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THE PRODUCTS MENTIONED MAY PRESENT UNKNOWN HAZARDS. THEY SHOULD THEREFORE BE USED WITH CAUTION. EVEN IF IN THIS

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