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

1.1 Product identifier

Trade name : ARALDITE® 2030 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

Emergency telephone : 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.
Skin sensitization, Category 1	H317: May cause an allergic skin reaction.
Chronic aquatic toxicity, Category 2	H411: Toxic to aquatic life with long lasting effects.

2.2 Label elements

Labeling (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.
H411	Toxic to aquatic life with long lasting effects.

Precautionary Statements :

Prevention:	
P280	Wear protective gloves.
P280	Wear eye protection/ face protection.
P273	Avoid release to the environment.
Response:	
P333 + P313	If skin irritation or rash occurs: Get medical advice/ attention.
P362 + P364	Take off contaminated clothing and wash it before reuse.
Disposal:	
P501	Dispose of contents and container in accordance with all local, regional, national and international regulations.

Hazardous ingredients which must be listed on the label:

reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight ≤ 700)

bisphenol F-epoxy resin

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.
No information available.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Hazardous ingredients

Chemical Name	CAS-No. EC-No.	Classification (REGULATION (EC)	Concentration

	Registration number	No 1272/2008)	(%)
4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane	25068-38-6 500-033-5 01-2119456619-26	Eye Irrit. 2; H319 Skin Irrit. 2; H315 Skin Sens. 1; H317 Aquatic Chronic 2; H411	60 - 100
Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol	9003-36-5 500-006-8 01-2119454392-40-0001	Skin Irrit. 2; H315 Skin Sens. 1; H317 Aquatic Chronic 2; H411	7 - 13
2-[[3-Hydroxy-2,2-bis[[(1-oxoallyl)oxy]methyl]propoxy]methyl]-2-[[(1-oxoallyl)oxy]methyl]-1,3-propanediyl diacrylate	60506-81-2 262-270-8 05-2114705941-51-0000	Eye Irrit. 2; H319	1 - 3
2,6-Di-tert-butyl-p-cresol	128-37-0 204-881-4 -	Aquatic Chronic 1; H410 Aquatic Acute 1; H400	0.1 - 1
Hydroquinone	123-31-9 204-617-8 05-2117325175-50-0000	Acute Tox. 4; H302 Eye Dam. 1; H318 Skin Sens. 1; H317 Muta. 2; H341 Carc. 2; H351 Aquatic Acute 1; H400 Aquatic Chronic 1; H410	0 - 0.1

For explanation of abbreviations see section 16.

SECTION 4: First aid measures

4.1 Description of first-aid measures

General advice : Move out of dangerous area.
Consult a physician.
Show this material safety data sheet to the doctor in attendance.

If inhaled : Move to fresh air in case of accidental inhalation of dust or fumes from overheating or combustion.
If symptoms persist, call a physician.

In case of skin contact : Take off contaminated clothing and shoes immediately.
Wash off with soap and plenty of water.
If symptoms persist, call a physician.

In case of eye contact : Immediately flush eye(s) with plenty of water.
Remove contact lenses.
Protect unharmed eye.
Keep eye wide open while rinsing.
If eye irritation persists, consult a specialist.

If swallowed : Clean mouth with water and drink afterwards plenty of water.
Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
Obtain medical attention.

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

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	:	No data is available on the product itself.

5.2 Special hazards arising from the substance or mixture

Specific hazards during fire fighting	:	Do not allow run-off from fire fighting to enter drains or water courses.
Hazardous combustion products	:	No data is available on the product itself.

5.3 Advice for firefighters

Special protective equipment for fire-fighters	:	In the event of fire, wear self-contained breathing apparatus.
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. Ensure adequate ventilation.

6.2 Environmental precautions

Environmental precautions	:	Do not flush into surface water or sanitary sewer system. 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

None

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling : Avoid contact with skin and eyes.
For personal protection see section 8.
Persons with a history of skin sensitization problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used.
Smoking, eating and drinking should be prohibited in the application area.
Dispose of rinse water in accordance with local and national regulations.

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

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice. 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.

Advice on common storage : Strong acids

Strong bases

Strong oxidizing agents

Storage class (TRGS 510) : 10, Combustible liquids

Other data : No decomposition if stored and applied as directed.

7.3 Specific end use(s)

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

Ingredients	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
Silicon, amorphous	112945-52-5	AGW (Inhalable fraction)	4 mg/m3 (Silica)	DE TRGS 900
Further information	Senate commission for the review of compounds at the work place dangerous for the health (MAK-commission)., Colloidal amorphous silica, including pyrogenic silica and in wet processes manufactured silica (precipitated silica, silicagel)., When there is compliance with the OEL and biological tolerance			

	values, there is no risk of harming the unborn child			
2,6-di-tert-butyl-p-cresol	128-37-0	AGW (Vapour and aerosols, inhalable fraction)	10 mg/m3	DE TRGS 900
Peak-limit category	4;(II)			
Further information	Senate commission for the review of compounds at the work place dangerous for the health (MAK-commission)., Sum of vapor and aerosols., When there is compliance with the OEL and biological tolerance values, there is no risk of harming the unborn child			

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

reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight ≤ 700) :
End Use: Workers
Routes of exposure: Dermal
Potential health effects: Systemic effects, Short-term exposure
Value: 8,33 mg/kg bw/day
End Use: Workers
Routes of exposure: Inhalation
Potential health effects: Systemic effects, Short-term exposure
Value: 12,25 mg/m3
End Use: Workers
Routes of exposure: Dermal
Potential health effects: Systemic effects, Long-term exposure
Value: 8,33 mg/kg bw/day
End Use: Workers
Routes of exposure: Inhalation
Potential health effects: Systemic effects, Long-term exposure
Value: 12,25 mg/m3
End Use: Consumers
Routes of exposure: Dermal
Potential health effects: Systemic effects, Short-term exposure
Value: 3,571 mg/kg bw/day
End Use: Consumers
Routes of exposure: Oral
Potential health effects: Systemic effects, Short-term exposure
Value: 0,75 mg/kg bw/day
End Use: Consumers
Routes of exposure: Dermal
Potential health effects: Systemic effects, Long-term exposure
Value: 3,571 mg/kg bw/day
End Use: Consumers
Routes of exposure: Oral
Potential health effects: Systemic effects, Long-term exposure
Value: 0,75 mg/kg bw/day

Silicon, amorphous :
End Use: Workers
Routes of exposure: Inhalation
Potential health effects: Systemic effects, Long-term exposure
Value: 4 mg/m3

2,6-di-tert-butyl-p-cresol :
End Use: Workers
Routes of exposure: Dermal
Potential health effects: Systemic effects, Long-term exposure
Value: 8,3 mg/kg bw/day
End Use: Workers
Routes of exposure: Inhalation
Potential health effects: Systemic effects, Long-term exposure
Value: 5,8 mg/m3

End Use: Consumers
Routes of exposure: Dermal
Potential health effects: Systemic effects, Long-term exposure
Value: 5 mg/kg bw/day
End Use: Consumers
Routes of exposure: Inhalation
Potential health effects: Systemic effects, Long-term exposure
Value: 1,74 mg/m3

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

reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight ≤ 700)	:	Fresh water Value: 0,006 mg/lAssessment Factors Marine water Value: 0,0006 mg/lAssessment Factors Freshwater - intermittent Value: 0,018 mg/lAssessment Factors Fresh water sediment Value: 0,996 mg/kgEquilibrium method Sea sediment Value: 0,0996 mg/kgEquilibrium method Soil Value: 0,196 mg/kgEquilibrium method Sewage treatment plant Value: 10 mg/lAssessment Factors Secondary Poisoning Value: 11 mg/kg
2,6-di-tert-butyl-p-cresol	:	Fresh water Value: 0,004 mg/l Marine water Value: 0,0004 mg/l Freshwater - intermittent Value: 0,004 mg/l Sewage treatment plant Value: 100 mg/l Fresh water sediment Value: 1,29 mg/kg Soil Value: 1,04 mg/kg Secondary Poisoning Value: 16,7 mg/kg

8.2 Exposure controls

Personal protective equipment

Eye protection	:	Eye wash bottle with pure water Tightly fitting safety goggles.
Hand protection Material	:	butyl-rubber

Break through time	:	> 8 h Solvent-resistant gloves (butyl-rubber) Nitrile rubber Neoprene gloves PVC butyl-rubber 10 - 480 min Solvent-resistant gloves (butyl-rubber) Nitrile rubber Neoprene gloves PVC
Remarks	:	Polyvinyl alcohol or nitrile- butyl-rubber gloves The selected protective gloves have to satisfy the specifications of EU Directive 89/689/EEC and the standard EN 374 derived from it. Before removing gloves clean them with soap and water.
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	:	In the case of vapor formation use a respirator with an approved filter.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	:	liquid
Color	:	off-white
Odor	:	odorless
Boiling point	:	> 200 °C
Flash point	:	> 70 °C Method: closed cup
Density	:	ca. 1,17 g/cm3
Solubility(ies)		
Water solubility	:	insoluble (20 °C)
Autoignition temperature	:	> 200 °C
Viscosity		
Viscosity, dynamic	:	45.000 mPa.s (25 °C) Method: Measured

9.2 Other information

No data available

SECTION 10: Stability and reactivity

10.1 Reactivity

Stable under recommended storage conditions.

10.2 Chemical stability

No decomposition if stored and applied as directed.

10.3 Possibility of hazardous reactions

Hazardous reactions : Stable under recommended storage conditions.
No decomposition if used as directed.

10.4 Conditions to avoid

Conditions to avoid : No data available

10.5 Incompatible materials

10.6 Hazardous decomposition products

Carbon oxides
Burning produces obnoxious and toxic fumes.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Ingredients:

reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight ≤ 700)**:**

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

bisphenol F-epoxy resin**:**

Acute oral toxicity : LD50 (Rat, male and female): > 5.000 mg/kg
Method: OECD Test Guideline 401

2,6-di-tert-butyl-p-cresol**:**

Acute oral toxicity : LD50 (Rat, male and female): > 2.930 mg/kg
Method: OECD Test Guideline 401

1,4-dihydroxybenzene**:**

Acute oral toxicity : LD50 (Rat): > 375 mg/kg
Method: OECD Test Guideline 401

Ingredients:

reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight ≤ 700)**:**

Acute inhalation toxicity : LC0 (Rat, male): 10 ppt
Exposure time: 5 h
Test atmosphere: vapor

Ingredients:

reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight ≤ 700)**:**

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 F-epoxy resin**:**

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

2,6-di-tert-butyl-p-cresol**:**

Acute dermal toxicity : LD50 (Rat, male and female): > 2.000 mg/kg
Method: OECD Test Guideline 402

1,4-dihydroxybenzene**:**

Acute dermal toxicity : LD50 (Rabbit): > 2.000 mg/kg
Method: OECD Test Guideline 402

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

Skin corrosion/irritation

Ingredients:

reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight ≤ 700)**:**

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

bisphenol F-epoxy resin**:**

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

2,6-di-tert-butyl-p-cresol**:**

Species: Rabbit
Assessment: No skin irritation

Result: slight irritation

1,4-dihydroxybenzene**:**
Species: Rabbit
Assessment: No skin irritation
Result: No skin irritation

Serious eye damage/eye irritation

Ingredients:

reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight ≤ 700)**:**
Species: Rabbit
Assessment: Mild eye irritant
Method: OECD Test Guideline 405
Result: Irritating to eyes.

bisphenol F-epoxy resin**:**
Species: Rabbit
Assessment: No eye irritation
Method: OECD Test Guideline 405
Result: No eye irritation

2,6-di-tert-butyl-p-cresol**:**
Species: Rabbit
Assessment: No eye irritation
Result: Irritation to eyes, reversing within 7 days

1,4-dihydroxybenzene**:**
Assessment: Severe eye irritation
Result: Based on Human Evidence

Respiratory or skin sensitization

Ingredients:

BISPHENOL A EPOXY RESIN**:**
Routes of exposure: Skin
Species: Mouse
Assessment: May cause sensitization by skin contact.
Method: OECD Test Guideline 429
Result: Causes sensitization.

BISPHENOL F EPOXY RESIN**:**
Routes of exposure: Skin
Species: Mouse
Method: OECD Test Guideline 429
Result: May cause sensitization by skin contact.

Butylated hydroxytoluene**:**
Routes of exposure: Skin
Species: Humans
Result: Does not cause skin sensitization.

1,4-Benzenediol**:**
Routes of exposure: Skin
Species: Mouse

Method: OECD Test Guideline 429
Result: Causes sensitization.

Assessment: No data available

Germ cell mutagenicity

Ingredients:

reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight ≤ 700)**:**

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

bisphenol F-epoxy resin**:**

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

2,6-di-tert-butyl-p-cresol**:**

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

: Metabolic activation: Metabolic activation
Result: negative

: Concentration: 100 - 1000 ug/plate
Metabolic activation: with and without metabolic activation
Result: negative

1,4-dihydroxybenzene**:**

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

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

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

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

Ingredients:

reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight ≤ 700)**:**

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

bisphenol F-epoxy resin**:**

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

2,6-di-tert-butyl-p-cresol**:**

Genotoxicity in vivo : Application Route: Intraperitoneal injection
Dose: 75 mg/kg
Result: negative

Application Route: Oral
Exposure time: 9 Months

Dose: ca 750 mg/kg
Result: negative

1,4-dihydroxybenzene**:**
Genotoxicity in vivo : Application Route: Intraperitoneal injection
Method: OECD Test Guideline 483
Result: positive

Application Route: Intraperitoneal injection
Method: OECD Test Guideline 474
Result: positive

Application Route: Oral
Exposure time: 10 Weeks
Method: OECD Test Guideline 478
Result: negative

Ingredients:

reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight ≤ 700)**:**
Germ cell mutagenicity-Assessment : Weight of evidence does not support classification as a germ cell mutagen.

Germ cell mutagenicity-Assessment : No data available

Carcinogenicity

Ingredients:

reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight ≤ 700)**:**
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

2,6-di-tert-butyl-p-cresol**:**
Species: Rat, (male and female)
Application Route: Oral
Result: negative
Target Organs: Liver

1,4-dihydroxybenzene**:**
Species: Rat
Application Route: Oral
Exposure time: 103 weeks
Frequency of Treatment: 5 daily
Method: OECD Test Guideline 453
Result: positive

Species: Mouse
Application Route: Oral
Exposure time: 103 weeks
Frequency of Treatment: 5 daily
Method: OECD Test Guideline 453
Result: positive

Carcinogenicity - Assessment : No data available

Reproductive toxicity

Ingredients:

reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight ≤ 700)**:**

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.

bisphenol F-epoxy resin**:**

Species: Rat, male and female
Application Route: Oral
Method: OECD Test Guideline 416

2,6-di-tert-butyl-p-cresol**:**

Species: Rat, male and female

Application Route: Oral

1,4-dihydroxybenzene**:**

Species: Rat
Application Route: Oral
Method: Skin Sensitization

Ingredients:

reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight ≤ 700)**:**

Effects on fetal development : Species: Rabbit, female
Application Route: Dermal
General Toxicity Maternal: NOAEL (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: NOAEL (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: NOAEL (No observed adverse effect level): 180 mg/kg body weight
Method: OECD Test Guideline 414
Result: No teratogenic effects.

bisphenol F-epoxy resin**:**

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

2,6-di-tert-butyl-p-cresol**:**

Species: Rat
Application Route: Oral
General Toxicity Maternal: NOAEL (No observed adverse effect level): 100 mg/kg body weight
Result: No teratogenic effects.

1,4-dihydroxybenzene**:**

Species: Rat
Application Route: Oral
General Toxicity Maternal: NOAEL (No observed adverse effect level): 100 mg/kg body weight
Method: OECD Test Guideline 414
Result: No teratogenic effects.

Species: Rabbit
Application Route: Oral

General Toxicity Maternal: NOAEL (No observed adverse effect level): 25 mg/kg body weight
Method: Prenatal Developmental Toxicity Study
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

Ingredients:

reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight ≤ 700)**:**
Species: Rat, male and female
NOAEL (No observed adverse effect level): 50 mg/kg
Application Route: Ingestion
Exposure time: 14 WeeksNumber of exposures: 7 d
Method: Subchronic toxicity

Species: Rat, male and female
No-observed-effect level: 10 mg/kg
Application Route: Skin contact
Exposure time: 13 WeeksNumber of exposures: 5 d
Method: Subchronic toxicity

Species: Mouse, male
NOAEL (No observed adverse effect level): 100 mg/kg
Application Route: Skin contact
Exposure time: 13 WeeksNumber of exposures: 3 d
Method: Subchronic toxicity

bisphenol F-epoxy resin**:**
Species: Rat, male and female
NOAEL (No observed adverse effect level): 250 mg/kg
Application Route: Ingestion
Exposure time: 13 WeeksNumber of exposures: 7 d
Method: Subchronic toxicity

2,6-di-tert-butyl-p-cresol**:**
Species: Rat, male and female
NOAEL (No observed adverse effect level): 25
Application Route: Ingestion
Method: Chronic toxicity

1,4-dihydroxybenzene**:**
Species: Mouse
LOAEL (Lowest observed adverse effect level): 100
Application Route: Ingestion

Exposure time: 13 WeeksNumber of exposures: 5 d
Method: Subchronic toxicity

Species: Rat
LOAEL (Lowest observed adverse effect level): 100
Application Route: Ingestion
Exposure time: 13 WeeksNumber of exposures: 5 d
Method: Subchronic toxicity

Species: Rat
NOAEL (No observed adverse effect level): 109,6
Application Route: Skin contact
Exposure time: 13 WeeksNumber of exposures: 5 d
Method: Subchronic toxicity

Repeated dose toxicity - Assessment : No data available

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

Product:

Remarks: No data available

SECTION 12: Ecological information

12.1 Toxicity

Ingredients:

reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight ≤ 700)**:**

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 Test Type: static test Test substance: Fresh water
Toxicity to algae	:	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 bacteria	:	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

bisphenol F-epoxy resin**:**

Toxicity to fish	:	LC50 (Oncorhynchus mykiss (rainbow trout)): 0,55 mg/l Exposure time: 96 h Test Type: semi-static test Test substance: Fresh water Method: OECD Test Guideline 203
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 1,6 mg/l Exposure time: 48 h Test Type: static test Test substance: Fresh water Method: OECD Test Guideline 202
Toxicity to algae	:	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 bacteria	:	IC50 (activated sludge): > 100 mg/l Exposure time: 3 h Test Type: static test Test substance: Fresh water
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC: 0,3 mg/l Exposure time: 21 d Species: Daphnia magna (Water flea) Test Type: semi-static test Test substance: Fresh water Method: OECD Test Guideline 211
Ecotoxicology Assessment Acute aquatic toxicity	:	This product has no known ecotoxicological effects.
Chronic aquatic toxicity	:	Toxic to aquatic life with long lasting effects.

2,6-di-tert-butyl-p-cresol**:**

Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 0,61 mg/l Exposure time: 48 h Test Type: static test Test substance: Fresh water Method: OECD Test Guideline 202
Toxicity to algae	:	EC50 (Desmodesmus subspicatus (Scenedesmus subspicatus)): > 0,4 mg/l Exposure time: 72 h Test Type: static test Method: Directive 67/548/EEC, Annex V, C.3.
M-Factor (Acute aquatic toxicity)	:	1
Toxicity to bacteria	:	IC50 (activated sludge): > 500 mg/l Exposure time: 0,5 h Method: Directive 67/548/EEC, Annex V, C.11. EC50 (activated sludge): > 10.000 mg/l Exposure time: 3 h Test Type: static test Method: Directive 67/548/EEC, Annex V, B.15.
Toxicity to fish (Chronic toxicity)	:	LC0: >= 0,57 mg/l Exposure time: 96 hrs Species: Brachydanio rerio (zebrafish) Test Type: semi-static test Method: Directive 67/548/EEC, Annex V, C.1.
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC: 0,32 mg/l Exposure time: 21 d Species: Daphnia magna (Water flea) Test Type: semi-static test Method: OECD Test Guideline 202 EC0: >= 0,31 mg/l Exposure time: 48 hrs

Species: Daphnia magna (Water flea)
Test Type: static test
Method: Directive 67/548/EEC, Annex V, C.2.

NOEC: 0,23 mg/l
Exposure time: 48 hrs
Species: Daphnia magna (Water flea)
Test Type: static test
Method: OECD Test Guideline 202

NOEC: 0,316 mg/l
Exposure time: 21 d
Species: Daphnia magna (Water flea)
Test Type: semi-static test
Method: OECD Test Guideline 202

1,4-dihydroxybenzene**:**

Toxicity to fish	:	LC50 (Oncorhynchus mykiss (rainbow trout)): 0,638 mg/l Exposure time: 96 h Method: OECD Test Guideline 203
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 0,134 mg/l Exposure time: 48 h Method: OECD Test Guideline 202
Toxicity to algae	:	ErC50 (Selenastrum capricornutum (green algae)): 0,33 mg/l Exposure time: 72 h Method: OECD Test Guideline 201
M-Factor (Acute aquatic toxicity)	:	10
Toxicity to bacteria	:	IC50 (activated sludge): 71 mg/l Exposure time: 2 h
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC: 0,0057 mg/l Exposure time: 21 d Species: Daphnia magna (Water flea) Method: OECD Test Guideline 211

12.2 Persistence and degradability

Ingredients:

reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight ≤ 700)**:**

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

bisphenol F-epoxy resin**:**

Biodegradability	:	Inoculum: activated sludge Concentration: 3 mg/l Result: Not readily biodegradable. Biodegradation: ca. 0 % Exposure time: 28 d Method: Directive 67/548/EEC Annex V, C.4.E.

2,6-di-tert-butyl-p-cresol**:**

Biodegradability	:	Inoculum: activated sludge Result: Inherently biodegradable. Biodegradation: 5,2 % Exposure time: 112 d

1,4-dihydroxybenzene**:**

Biodegradability	:	Biodegradation: 70 % Exposure time: 14 d Method: OECD Test Guideline 301C

12.3 Bioaccumulative potential

Ingredients:

reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight ≤ 700)**:**

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

bisphenol F-epoxy resin**:**

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

2,6-di-tert-butyl-p-cresol**:**

Bioaccumulation	:	Species: Cyprinus carpio (Carp) Exposure time: 28 d Bioconcentration factor (BCF): 330 - 1.800 Method: flow-through test
Partition coefficient: n-octanol/water	:	log Pow: 5,1

1,4-dihydroxybenzene**:**

Bioaccumulation	:	Bioconcentration factor (BCF): 3,16
Partition coefficient: n-octanol/water	:	log Pow: 0,59

12.4 Mobility in soil

Ingredients:

reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight ≤ 700)**:**

Distribution among environmental compartments : Koc: 445

bisphenol F-epoxy resin**:**

Distribution among environmental compartments : Koc: 4460Method: OECD Test Guideline 121

2,6-di-tert-butyl-p-cresol**:**

Distribution among environmental compartments : Koc: 8183

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 : Remarks: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

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.
Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging : Empty remaining contents.
Dispose of as unused product.
Do not re-use empty containers.

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 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 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 A EPOXY RESIN)
14.3 Transport hazard class(es)	:	9
14.4 Packing group	:	III
Labels	:	9
14.5 Environmental hazards		
Marine pollutant	:	no

RID

14.1 UN number	:	UN 3082
14.2 UN proper shipping name	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (BISPHENOL A EPOXY RESIN)
14.3 Transport hazard class(es)	:	9
14.4 Packing group	:	III
Labels	:	9
14.5 Environmental hazards		
Marine pollutant	:	yes

Transport in bulk according to Annex II of MARPOL 73/78 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 Authorization (Article 59). : Not applicable

EU Voluntary monitoring list for non-scheduled substances : Not applicable

Seveso II - Directive 2003/105/EC amending Council Directive 96/82/EC on the control of major-accident hazards involving dangerous substances

		Quantity 1	Quantity 2
9b	Dangerous for the environment	200 t	500 t

Water contaminating class (Germany) : WGK 2 water endangering
Classification according VwVwS, Annex 4.

TA Luft List (Germany) :
Total dust:
Not applicable
: Inorganic substances in powdered form:
Not applicable
: Inorganic substances in vapor or gaseous form:
Not applicable
: Organic Substances:
portionClass 1: 0,02 %

: Carcinogenic substances:
Not applicable
: mutagenic:
Not applicable
: Toxic to reproduction:
Not applicable

Volatile organic compounds : Directive 2010/75/EU of 24 November 2010 on industrial emissions (integrated pollution prevention and control)
Volatile organic compounds (VOC) content: 9,01 %, 105,42 g/l
Remarks: VOC content excluding water

Directive 2010/75/EU of 24 November 2010 on industrial emissions (integrated pollution prevention and control)
Volatile organic compounds (VOC) content: 9,01 %, 105,42 g/l
Remarks: VOC content valid only for coating materials used on wood surfaces

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

CH INV : The mixture contains substances listed on the Swiss Inventory

TSCA : On TSCA Inventory

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	:	On the inventory, or in compliance with the inventory
ISHL	:	On the inventory, or in compliance with the inventory
KECI	:	On the inventory, or in compliance with the inventory
PICCS	:	On the inventory, or in compliance with the inventory
IECSC	:	On the inventory, or in compliance with the inventory

Inventories

AICS (Australia), DSL (Canada), IECSC (China), REACH (European Union), ENCS (Japan), ISHL (Japan), KECI (Korea), NZIoC (New Zealand), PICCS (Philippines), TSCA (USA)

15.2 Chemical Safety Assessment

SECTION 16: Other information

Full text of H-Statements

H302	:	Harmful if swallowed.
H315	:	Causes skin irritation.
H317	:	May cause an allergic skin reaction.
H318	:	Causes serious eye damage.
H319	:	Causes serious eye irritation.
H341	:	Suspected of causing genetic defects.
H351	:	Suspected of causing cancer.
H400	:	Very toxic to aquatic life.
H410	:	Very toxic to aquatic life with long lasting effects.
H411	:	Toxic to aquatic life with long lasting effects.

Full text of other abbreviations

Acute Tox.	:	Acute toxicity
Aquatic Acute	:	Acute aquatic toxicity
Aquatic Chronic	:	Chronic aquatic toxicity
Carc.	:	Carcinogenicity
Eye Dam.	:	Serious eye damage
Eye Irrit.	:	Eye irritation
Muta.	:	Germ cell mutagenicity
Skin Irrit.	:	Skin irritation
Skin Sens.	:	Skin sensitization

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Hazards, toxicity and behaviour of the products may differ when used with other materials and are dependent upon the manufacturing circumstances or other processes. Such hazards, toxicity and behaviour should be determined by the user and made known to handlers, processors and end users.

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