

# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

**HUNTSMAN**

Enriching lives through innovation

## EPOCAST® 1652 A US

|         |                |              |                                 |
|---------|----------------|--------------|---------------------------------|
| Version | Revision Date: | SDS Number:  | Date of last issue: -           |
| 1.0     | 05.09.2018     | 400001008248 | Date of first issue: 05.09.2018 |

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

#### 1.1 Product identifier

Trade name : EPOCAST® 1652 A US

#### 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 : Centres Antipoison et de Toxicovigilance:  
ANGERS: 02 41 48 21 21  
BORDEAUX: 05 56 96 40 80  
LILLE: 0 825 812 822  
LYON: 04 72 11 69 11  
MARSEILLE 04 91 75 25 25  
NANCY: 03 83 32 36 36  
PARIS: 01 40 05 48 48  
RENNES: 02 99 59 22 22  
STRASBOURG: 03 88 37 37 37  
TOULOUSE: 05 61 77 74 47  
EUROPE: +32 35 75 1234  
France ORFILA: +33(0)145425959  
ASIA: +65 6336-6011  
China: +86 20 39377888  
+86 532 83889090  
India: + 91 22 42 87 5333  
Australia: 1800 786 152  
New Zealand: 0800 767 437  
USA: +1/800/424.9300

### 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.

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|                                      |                                                        |
|--------------------------------------|--------------------------------------------------------|
| Eye irritation, Category 2           | H319: Causes serious eye irritation.                   |
| Skin sensitisation, 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

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

Hazard pictograms :



Signal word : Warning

|                   |   |      |                                                  |
|-------------------|---|------|--------------------------------------------------|
| Hazard statements | : | H315 | Causes skin irritation.                          |
|                   |   | H317 | May cause an allergic skin reaction.             |
|                   |   | H319 | Causes serious eye irritation.                   |
|                   |   | H411 | Toxic to aquatic life with long lasting effects. |

|                          |   |                    |                                                                   |
|--------------------------|---|--------------------|-------------------------------------------------------------------|
| Precautionary statements | : | <b>Prevention:</b> |                                                                   |
|                          |   | P261               | Avoid breathing mist or vapours.                                  |
|                          |   | P264               | Wash skin thoroughly after handling.                              |
|                          |   | P273               | Avoid release to the environment.                                 |
|                          |   | P280               | Wear protective gloves/ eye protection/ face protection.          |
|                          |   | <b>Response:</b>   |                                                                   |
|                          |   | P333 + P313        | If skin irritation or rash occurs: Get medical advice/ attention. |
|                          |   | P391               | Collect spillage.                                                 |

Hazardous components which must be listed on the label:

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

Epoxyphenol Novolac 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.

## SECTION 3: Composition/information on ingredients

### 3.2 Mixtures

#### Hazardous components

| Chemical name                      | CAS-No.<br>EC-No.<br>Index-No.<br>Registration number | Classification      | Concentration<br>(% w/w) |
|------------------------------------|-------------------------------------------------------|---------------------|--------------------------|
| 2,2'-[(1-methylethylidene)bis(4,1- | 1675-54-3                                             | Skin Irrit. 2; H315 | >= 30 -                  |

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|                                                   |                                               |                                                                                               |                 |
|---------------------------------------------------|-----------------------------------------------|-----------------------------------------------------------------------------------------------|-----------------|
| phenyleneoxymethylene)]bisoxirane                 | 216-823-5<br>603-073-00-2<br>01-2119456619-26 | Eye Irrit. 2; H319<br>Skin Sens. 1; H317<br>Aquatic Chronic 2;<br>H411                        | < 60            |
| Phenol, polymer with formaldehyde, glycidyl ether | 28064-14-4<br>Polymer                         | Skin Irrit. 2; H315<br>Eye Irrit. 2; H319<br>Skin Sens. 1; H317<br>Aquatic Chronic 2;<br>H411 | >= 13 -<br>< 30 |

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 Epichlorhydrin

### SECTION 4: First aid measures

#### 4.1 Description of first aid measures

- |                         |                                                                                                                                                                      |
|-------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| General advice          | : Move out of dangerous area.<br>Show this safety data sheet to the doctor in attendance.<br>Treat symptomatically.<br>Get medical attention if symptoms occur.      |
| If inhaled              | : If inhaled, remove to fresh air.<br>Get medical attention if symptoms occur.                                                                                       |
| In case of skin contact | : If skin irritation persists, call a physician.<br>If on skin, rinse well with water.<br>If on clothes, remove clothes.                                             |
| In case of eye contact  | : Immediately flush eye(s) with plenty of water.<br>Remove contact lenses.<br>Keep eye wide open while rinsing.<br>If eye irritation persists, consult a specialist. |
| If swallowed            | : Keep respiratory tract clear.<br>Never give anything by mouth to an unconscious person.<br>If symptoms persist, call a physician.                                  |

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

None known.

#### 4.3 Indication of any immediate medical attention and special treatment needed

- |           |                          |
|-----------|--------------------------|
| Treatment | : Treat symptomatically. |
|-----------|--------------------------|

### SECTION 5: Firefighting measures

#### 5.1 Extinguishing media

- |                              |                                                                                                           |
|------------------------------|-----------------------------------------------------------------------------------------------------------|
| Suitable extinguishing media | : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. |
|------------------------------|-----------------------------------------------------------------------------------------------------------|

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Unsuitable extinguishing media : High volume water jet

### 5.2 Special hazards arising from the substance or mixture

Specific hazards during firefighting : Do not allow run-off from fire fighting to enter drains or water courses.

Hazardous combustion products : Carbon oxides

### 5.3 Advice for firefighters

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

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

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

## SECTION 6: Accidental release measures

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

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

### 6.2 Environmental precautions

Environmental precautions : Prevent product from entering drains.  
Prevent further leakage or spillage if safe to do so.  
If the product contaminates rivers and lakes or drains inform respective authorities.

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

Methods for cleaning up : Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).  
Keep in suitable, closed containers for disposal.

### 6.4 Reference to other sections

For disposal considerations see section 13., See Section 1 for emergency contact information.,  
For personal protection see section 8.

## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

Advice on safe handling : Do not breathe vapours or spray mist.  
Avoid exposure - obtain special instructions before use.

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

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

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

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

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

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

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**

Contains no substances with occupational exposure limit values.

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

| Substance name                                                      | End Use | Exposure routes | Potential health effects              | Value             |
|---------------------------------------------------------------------|---------|-----------------|---------------------------------------|-------------------|
| 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane | Workers | Dermal          | Systemic effects, Short-term exposure | 8,33 mg/kg bw/day |
|                                                                     | Workers | Inhalation      | Systemic effects, Short-term exposure | 12,25 mg/m3       |
|                                                                     | Workers | Dermal          | Systemic effects, Long-term exposure  | 8,33 mg/kg bw/day |

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|  |           |            |                                          |                       |
|--|-----------|------------|------------------------------------------|-----------------------|
|  | Workers   | Inhalation | Systemic effects,<br>Long-term exposure  | 12,25 mg/m3           |
|  | Consumers | Dermal     | Systemic effects,<br>Short-term exposure | 3,571 mg/kg<br>bw/day |
|  | Consumers | Oral       | Systemic effects,<br>Short-term exposure | 0,75 mg/kg<br>bw/day  |
|  | Consumers | Dermal     | Systemic effects,<br>Long-term exposure  | 3,571 mg/kg<br>bw/day |
|  | Consumers | Oral       | Systemic effects,<br>Long-term exposure  | 0,75 mg/kg<br>bw/day  |

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

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

## 8.2 Exposure controls

### Personal protective equipment

Eye protection : Eye wash bottle with pure water  
Tightly fitting safety goggles  
Wear face-shield and protective suit for abnormal processing problems.

Hand protection

Material : butyl-rubber  
Break through time : > 8 h

Material : Solvent-resistant gloves (butyl-rubber)

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|                          |                                                                                                                                         |
|--------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|
| Material                 | : Nitrile rubber                                                                                                                        |
| Break through time       | : 10 - 480 min                                                                                                                          |
| Remarks                  | : The suitability for a specific workplace should be discussed with the producers of the protective gloves.                             |
| Skin and body protection | : Impervious clothing<br>Choose body protection according to the amount and concentration of the dangerous substance at the work place. |
| Respiratory protection   | : No personal respiratory protective equipment normally required.                                                                       |

**SECTION 9: Physical and chemical properties**

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

|                                                  |                                               |
|--------------------------------------------------|-----------------------------------------------|
| Appearance                                       | : paste                                       |
| Colour                                           | : white                                       |
| 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. |
| Boiling point                                    | : No data is available on the product itself. |
| Flash point                                      | : 143 °C<br>Method: Pensky-Martens closed cup |
| Evaporation rate                                 | : No data is available on the product itself. |
| Flammability (solid, gas)                        | : No data is available on the product itself. |
| Burning rate                                     | : No data is available on the product itself. |
| Upper explosion limit / Upper flammability limit | : No data is available on the product itself. |
| Lower explosion limit / Lower flammability limit | : No data is available on the product itself. |
| Vapour pressure                                  | : < 1 hPa (20 °C)                             |
| Relative vapour density                          | : No data is available on the product itself. |
| Relative density                                 | : No data is available on the product itself. |

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|                                        |                                               |
|----------------------------------------|-----------------------------------------------|
| Density                                | : 0,7 g/cm <sup>3</sup> (25 °C)               |
| Solubility(ies)                        |                                               |
| Water solubility                       | : practically insoluble (20 °C)               |
| Solubility in other solvents           | : No data is available on the product itself. |
| Partition coefficient: n-octanol/water | : No data is available on the product itself. |
| Auto-ignition temperature              | : No data is available on the product itself. |
| Decomposition temperature              | : > 200 °C                                    |
| Viscosity                              | : No data is available on the product itself. |
| Explosive properties                   | : No data is available on the product itself. |
| Oxidizing properties                   | : No data is available on the product itself. |

### 9.2 Other information

No data available

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

No dangerous reaction known under conditions of normal use.

### 10.2 Chemical stability

Stable under normal conditions.

### 10.3 Possibility of hazardous reactions

Hazardous reactions : No hazards to be specially mentioned.

### 10.4 Conditions to avoid

Conditions to avoid : None known.

### 10.5 Incompatible materials

Materials to avoid : None known.

### 10.6 Hazardous decomposition products

Hazardous decomposition products : carbon dioxide  
carbon monoxide



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### 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

Epoxyphenol Novolac Resin:

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

###### 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  
Assessment: The substance or mixture has no acute dermal toxicity

Epoxyphenol Novolac 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

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.

Epoxyphenol Novolac Resin:

Species: Rabbit

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Method: OECD Test Guideline 404

Result: Irritating to skin.

### 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.

Epoxyphenol Novolac Resin:

Species: Rabbit

Method: OECD Test Guideline 405

Result: Irritating to eyes.

### 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.

Epoxyphenol Novolac Resin:

Exposure routes: Skin

Species: Mouse

Method: OECD Test Guideline 429

Result: May cause sensitisation by skin contact.

Assessment: No data available

### 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

Epoxyphenol Novolac Resin:

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

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: Concentration: 0 - 5000 ug/plate  
Metabolic activation: with and without metabolic activation  
Result: positive

### 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

Epoxyphenol Novolac Resin:

Genotoxicity in vivo : Cell type: Germ  
Application Route: Oral  
Result: negative

Cell type: Somatic  
Application Route: Oral  
Dose: 0 - 5000 mg/kg  
Result: negative

### **Carcinogenicity**

#### Components:

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

Species: Rat, male and female  
Application Route: Oral  
Exposure time: 24 month(s)  
Dose: 15 mg/kg  
Frequency of Treatment: 7 days/week  
Method: OECD Test Guideline 453  
Result: negative

Species: Mouse, male  
Application Route: Dermal  
Exposure time: 24 month(s)  
Dose: 0.1 mg/kg  
Frequency of Treatment: 3 days/week  
Method: OECD Test Guideline 453  
Result: negative

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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

Epoxyphenol Novolac Resin:  
Species: Rat, male and female  
Application Route: Oral  
Exposure time: 24 month(s)  
Dose: 15 mg/kg  
Frequency of Treatment: 7 daily  
Method: OECD Test Guideline 453  
Result: negative

Species: Mouse, male  
Application Route: Dermal  
Exposure time: 24 month(s)  
Dose: .1 mg/kg  
Frequency of Treatment: 3 daily  
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 daily  
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.

Epoxyphenol Novolac Resin:  
Species: Rat, male and female

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

### Components:

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

Effects on foetal development : Species: Rabbit, female  
Application Route: Dermal  
General Toxicity Maternal: No observed adverse effect level:  
30 mg/kg body weight  
Method: Other guidelines  
Result: No teratogenic effects

Species: Rabbit, female  
Application Route: Oral  
General Toxicity Maternal: No observed adverse effect level:  
60 mg/kg body weight  
Method: OECD Test Guideline 414  
Result: No teratogenic effects

Species: Rat, female  
Application Route: Oral  
General Toxicity Maternal: No observed adverse effect level:  
180 mg/kg body weight  
Method: OECD Test Guideline 414  
Result: No teratogenic effects

Epoxyphenol Novolac Resin:

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

Species: Rabbit, female  
Application Route: Oral  
General Toxicity Maternal: No observed adverse effect level:  
60 mg/kg body weight  
Method: OECD Test Guideline 414  
Result: No teratogenic effects

Species: Rat, female  
Application Route: Oral  
General Toxicity Maternal: No observed adverse effect level:  
180 mg/kg body weight  
Method: OECD Test Guideline 414  
Result: No teratogenic effects

Reproductive toxicity - Assessment : No data available

### **STOT - single exposure**

No data available

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### STOT - repeated exposure

No data available

### Repeated dose toxicity

#### Components:

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

Species: Rat, male and female

NOAEL: 50 mg/kg

Application Route: Ingestion

Exposure time: 14 WeeksNumber of exposures: 7 d

Method: Subchronic toxicity

Species: Rat, male and female

NOEL: 10 mg/kg

Application Route: Skin contact

Exposure time: 13 WeeksNumber of exposures: 5 d

Method: Subchronic toxicity

Species: Mouse, male

NOAEL: 100 mg/kg

Application Route: Skin contact

Exposure time: 13 WeeksNumber of exposures: 3 d

Method: Subchronic toxicity

Epoxyphenol Novolac Resin:

Species: Rat, male and female

NOAEL: 50 mg/kg

Application Route: Ingestion

Exposure time: 14 WeeksNumber of exposures: 7 d

Method: Subchronic toxicity

Species: Rat, male and female

NOEL: 10 mg/kg

Application Route: Skin contact

Exposure time: 13 WeeksNumber of exposures: 5 d

Method: Subchronic toxicity

Species: Mouse, male

NOAEL: 100 mg/kg

Application Route: Skin contact

Exposure time: 13 WeeksNumber of exposures: 3 d

Method: Subchronic toxicity

Repeated dose toxicity - : No data available  
Assessment

### Aspiration toxicity

No data available

### Experience with human exposure

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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  
aquatic invertebrates  
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

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- 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
- Epoxyphenol Novolac Resin:
- 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)): 1,7 mg/l  
Exposure time: 48 h  
Test Type: static test  
Test substance: Fresh water  
Method: OECD Test Guideline 202
- 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
- Toxicity to microorganisms : IC50 (activated sludge): > 100 mg/l  
Exposure time: 3 h  
Test Type: static test  
Test substance: Fresh water
- Toxicity to fish (Chronic toxicity) : GLP: yes
- 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

### 12.2 Persistence and degradability

#### Components:

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



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|                            |                                                                                                                                                                                                                                                                                                                                                                   |
|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Biodegradability           | : Inoculum: Sewage (STP effluent)<br>Concentration: 20 mg/l<br>Result: Not readily biodegradable.<br>Biodegradation: 5 %<br>Exposure time: 28 d<br>Method: OECD Test Guideline 301F                                                                                                                                                                               |
| Stability in water         | : Degradation half life (DT50): 4,83 d (25 °C)<br>pH: 4<br>Method: OECD Test Guideline 111<br>Remarks: Fresh water<br><br>Degradation half life (DT50): 7,1 d (25 °C)<br>pH: 9<br>Method: OECD Test Guideline 111<br>Remarks: Fresh water<br><br>Degradation half life (DT50): 3,58 d (25 °C)<br>pH: 7<br>Method: OECD Test Guideline 111<br>Remarks: Fresh water |
| Epoxyphenol Novolac Resin: |                                                                                                                                                                                                                                                                                                                                                                   |
| Biodegradability           | : Inoculum: Sewage (STP effluent)<br>Concentration: 20 mg/l<br>Result: Not readily biodegradable.<br>Biodegradation: 5 %<br>Exposure time: 28 d<br>Method: OECD Test Guideline 301F                                                                                                                                                                               |
| Stability in water         | : Degradation half life (DT50): 4,83 d (25 °C)<br>pH: 4<br>Method: OECD Test Guideline 111<br>Remarks: Fresh water<br><br>Degradation half life (DT50): 7,1 d (25 °C)<br>pH: 9<br>Method: OECD Test Guideline 111<br>Remarks: Fresh water<br><br>Degradation half life (DT50): 3,58 d (25 °C)<br>pH: 7<br>Method: OECD Test Guideline 111<br>Remarks: Fresh water |

### 12.3 Bioaccumulative potential

#### Components:

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

|                 |                                                                         |
|-----------------|-------------------------------------------------------------------------|
| Bioaccumulation | : Bioconcentration factor (BCF): 31<br>Remarks: Does not bioaccumulate. |
|-----------------|-------------------------------------------------------------------------|

|                                        |                                                                        |
|----------------------------------------|------------------------------------------------------------------------|
| Partition coefficient: n-octanol/water | : log Pow: 3,242 (25 °C)<br>pH: 7,1<br>Method: OECD Test Guideline 117 |
|----------------------------------------|------------------------------------------------------------------------|

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Epoxyphenol Novolac Resin:  
Bioaccumulation : Bioconcentration factor (BCF): 31  
Remarks: Does not bioaccumulate.

Partition coefficient: n-  
octanol/water : log Pow: 3,242 (25 °C)  
pH: 7,1  
Method: OECD Test Guideline 117

### 12.4 Mobility in soil

#### Components:

2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane:  
Distribution among : Koc: 445  
environmental compartments

Epoxyphenol Novolac Resin:  
Distribution among : Koc: 445  
environmental compartments

### 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 : An environmental hazard cannot be excluded in the event of  
information : unprofessional handling or disposal.  
Toxic to aquatic life with long lasting effects.

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

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

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

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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 A EPOXY RESIN, EPOXY PHENOL NOVOLAC 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

#### IATA (Passenger)

Environmentally hazardous : yes

#### IATA (Cargo)

Environmentally hazardous : yes

#### IMDG

**14.1 UN number** : UN 3082

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

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

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

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

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

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

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

Installations classified for the protection of the environment (Environment Code R511-9) : 4511

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 determined

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

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

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

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

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

TSCA : 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.

### Full text of other abbreviations

Aquatic Chronic : Chronic aquatic toxicity  
Eye Irrit. : Eye irritation  
Skin Irrit. : Skin irritation  
Skin Sens. : Skin sensitisation

### Further information

#### Classification of the mixture:

|                   |      |
|-------------------|------|
| Skin Irrit. 2     | H315 |
| Eye Irrit. 2      | H319 |
| Skin Sens. 1      | H317 |
| Aquatic Chronic 2 | H411 |

#### Classification procedure:

|                    |
|--------------------|
| Calculation method |
| Calculation method |
| Calculation method |
| Calculation method |

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