

# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

**HUNTSMAN**

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## EPOCAST® 54 A US

Version	Revision Date:	SDS Number:	Date of last issue: 21.10.2015
1.1	12.09.2018	400001008695	Date of first issue: 21.10.2015

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

#### 1.1 Product identifier

Trade name : EPOCAST® 54 A US

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

Use of the 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  
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 : 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 sensitisation, Category 1	H317: May cause an allergic skin reaction.
Reproductive toxicity, Category 2	H361: Suspected of damaging fertility or the unborn child.
Long-term (chronic) aquatic hazard, Category 2	H411: Toxic to aquatic life with long lasting effects.

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### 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.  
H361 Suspected of damaging fertility or the unborn child.  
H411 Toxic to aquatic life with long lasting effects.

Precautionary statements : **Prevention:**  
P201 Obtain special instructions before use.  
P261 Avoid breathing mist or vapours.  
P264 Wash skin thoroughly after handling.  
P273 Avoid release to the environment.  
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.  
**Response:**  
P391 Collect spillage.

Hazardous components which must be listed on the label:

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

Tris(methylphenyl) phosphate

### 2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

## SECTION 3: Composition/information on ingredients

### 3.2 Mixtures

#### Hazardous components

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)
2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane	1675-54-3 216-823-5 603-073-00-2 01-2119456619-26	Skin Irrit. 2; H315 Eye Irrit. 2; H319 Skin Sens. 1; H317 Aquatic Chronic 2;	>= 60 - < 100

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		H411	
Tris(methylphenyl) phosphate	1330-78-5 215-548-8 -	Repr. 2; H361 Aquatic Acute 1; H400 Aquatic Chronic 1; H410	>= 13 - < 30
Phenol, 4-nonyl-, branched	84852-15-3 284-325-5 601-053-00-8 01-2119510715-45	Acute Tox. 4; H302 Skin Corr. 1B; H314 Repr. 2; H361fd Aquatic Acute 1; H400 Aquatic Chronic 1; H410	>= 0.1 - < 1

For explanation of abbreviations see section 16.

Both 25068-38-6 and 1675-54-3 can be used to describe the epoxy resin which is produced through the reaction of Bisphenol A and Epichlorohydrin

**SECTION 4: First aid measures**

**4.1 Description of first aid measures**

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

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

None known.

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

Treatment : Treat symptomatically.

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### SECTION 5: Firefighting measures

#### 5.1 Extinguishing media

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

Unsuitable extinguishing media : High volume water jet

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

Specific hazards during firefighting : 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.

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### 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.  
Avoid contact with skin and eyes.  
For personal protection see section 8.  
Smoking, eating and drinking should be prohibited in the application area.  
Dispose of rinse water in accordance with local and national regulations.  
Persons susceptible to skin sensitisation problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used.
- Advice on protection against fire and explosion : Normal measures for preventive fire protection.
- Hygiene measures : When using do not eat or drink. When using do not smoke.  
Wash hands before breaks and at the end of workday.

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

- Requirements for storage areas and containers : Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Observe label precautions. Keep in properly labelled containers.
- Advice on common storage : For incompatible materials please refer to Section 10 of this SDS.
- Recommended storage temperature : 2 - 40 °C
- Further information on storage stability : Stable under normal conditions.

### 7.3 Specific end use(s)

- Specific use(s) : No data available

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**SECTION 8: Exposure controls/personal protection**

**8.1 Control parameters**

Contains no substances with occupational exposure limit values.

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

Substance name	End Use	Exposure routes	Potential health effects	Value
2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane	Workers	Dermal	Systemic effects, Short-term exposure	8.33 mg/kg bw/day
	Workers	Inhalation	Systemic effects, Short-term exposure	12.25 mg/m3
	Workers	Dermal	Systemic effects, Long-term exposure	8.33 mg/kg bw/day
	Workers	Inhalation	Systemic effects, Long-term exposure	12.25 mg/m3
	Consumers	Dermal	Systemic effects, Short-term exposure	3.571 mg/kg bw/day
	Consumers	Oral	Systemic effects, Short-term exposure	0.75 mg/kg bw/day
	Consumers	Dermal	Systemic effects, Long-term exposure	3.571 mg/kg bw/day
	Consumers	Oral	Systemic effects, Long-term exposure	0.75 mg/kg bw/day

**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	

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	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  
Remarks : The suitability for a specific workplace should be discussed with the producers of the protective gloves.
- Skin and body protection : Impervious clothing  
Choose body protection according to the amount and concentration of the dangerous substance at the work place.
- Respiratory protection : In the case of vapour 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
- Colour : light yellow
- 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 : > 200 °C
- Flash point : > 100 °C  
Method: Pensky-Martens closed cup, 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.

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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 : 1.19

Density : 1.19 g/cm<sup>3</sup> (20 °C)

Solubility(ies)  
Water solubility : slightly soluble (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  
Viscosity, dynamic : 5,000 - 12,000 mPa.s (25 °C)

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

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

### 9.2 Other information

No data available

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

No dangerous reaction known under conditions of normal use.

### 10.2 Chemical stability

Stable under normal conditions.

### 10.3 Possibility of hazardous reactions

Hazardous reactions : No hazards to be specially mentioned.

### 10.4 Conditions to avoid

Conditions to avoid : None known.



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### 10.5 Incompatible materials

Materials to avoid : None known.

### 10.6 Hazardous decomposition products

Hazardous decomposition products : carbon dioxide  
carbon monoxide

## 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

Tris(methylphenyl) phosphate:

Acute oral toxicity : LD50 (Rat): > 20,000 mg/kg

Phenol, 4-nonyl-, branched:

Acute oral toxicity : Acute toxicity estimate : 500.0 mg/kg  
Method: Converted acute toxicity point estimate

LD50 (Rat, male and female): 1,412 mg/kg

##### Components:

Tris(methylphenyl) phosphate:

Acute inhalation toxicity : LC50 (Rat): > 11.1 mg/l  
Exposure time: 1 h  
Test atmosphere: dust/mist  
Assessment: The substance or mixture has no acute inhalation toxicity

##### Components:

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

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

Tris(methylphenyl) phosphate:

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Acute dermal toxicity : LD50 (Rabbit): 3,700 mg/kg  
Assessment: The component/mixture is minimally toxic after single contact with skin.

Phenol, 4-nonyl-, branched:  
Acute dermal toxicity : LD50 (Rabbit, male): 2,031 mg/kg  
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.

Tris(methylphenyl) phosphate:  
Species: Rabbit  
Result: No skin irritation

Phenol, 4-nonyl-, branched:  
Species: Rabbit  
Assessment: Causes burns.  
Result: Causes burns.

### 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.

Tris(methylphenyl) phosphate:  
Species: Rabbit  
Result: No eye irritation

Phenol, 4-nonyl-, branched:  
Result: Risk of serious damage to eyes.

### Respiratory or skin sensitisation

#### Components:

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

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Species: Mouse  
Assessment: May cause sensitisation by skin contact.  
Method: OECD Test Guideline 429  
Result: Causes sensitisation.

Tris(methylphenyl) phosphate:  
Exposure routes: Skin  
Species: Mouse  
Method: OECD Test Guideline 429  
Result: Does not cause skin sensitisation.

Phenol, 4-nonyl-, branched:  
Exposure routes: Skin  
Species: Guinea pig  
Method: OECD Test Guideline 406  
Result: Does not cause skin sensitisation.

### Components:

Phenol, 4-nonyl-, branched:  
Assessment: Causes severe skin burns and eye damage.

### **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

Tris(methylphenyl) phosphate:  
Genotoxicity in vitro : Metabolic activation: with and without metabolic activation  
Result: negative

#### 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

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Method: OPPTS 870.5395  
Result: negative

### Components:

Tris(methylphenyl) phosphate:  
Germ cell mutagenicity- Assessment : In vitro tests did not show mutagenic effects

Germ cell mutagenicity- Assessment : No data available

### **Carcinogenicity**

#### Components:

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

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

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

Species: Rat, female  
Application Route: Dermal  
Exposure time: 24 month(s)  
Dose: 1 mg/kg  
Frequency of Treatment: 5 days/week  
Method: OECD Test Guideline 453  
Result: negative

#### Components:

Tris(methylphenyl) phosphate:  
Carcinogenicity - Assessment : Animal testing did not show any carcinogenic effects.

### **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

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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.

Tris(methylphenyl) phosphate:

Species: Rat, male and female  
Application Route: Oral  
General Toxicity - Parent: Lowest observed adverse effect level: 62.5 mg/kg body weight  
Target Organs: Testes, Ovary  
Method: OECD Test Guideline 415  
Result: positive

### 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

Tris(methylphenyl) phosphate:

Species: Rat, female  
Application Route: Oral  
Dose: 20, 100, 400, 750 milligram per kilogram  
General Toxicity Maternal: No-observed-effect level: 20 mg/kg body weight  
Method: OPPTS 870.3700  
Result: Teratogenic effects

Phenol, 4-nonyl-, branched:

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

### **Components:**

Tris(methylphenyl) phosphate:  
Reproductive toxicity - Assessment : Some evidence of adverse effects on sexual function and fertility, and/or on development, based on animal experiments.

Phenol, 4-nonyl-, branched:  
Reproductive toxicity - Assessment : Suspected human reproductive toxicant

### **STOT - single exposure**

No data available

### **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 Weeks Number of exposures: 7 d  
Method: Subchronic toxicity

Species: Rat, male and female  
NOEL: 10 mg/kg  
Application Route: Skin contact  
Exposure time: 13 Weeks Number of exposures: 5 d  
Method: Subchronic toxicity

Species: Mouse, male  
NOAEL: 100 mg/kg  
Application Route: Skin contact  
Exposure time: 13 Weeks Number of exposures: 3 d  
Method: Subchronic toxicity

Tris(methylphenyl) phosphate:  
Species: Rat, male and female  
NOEL: 1000 mg/kg  
Application Route: Ingestion  
Exposure time: 2,160 h Method: Subchronic toxicity

Phenol, 4-nonyl-, branched:

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Species: Rat, male and female  
NOAEL: 100 mg/kg  
Application Route: Ingestion  
Exposure time: 672 h Number of exposures: 7 d  
Method: Subacute toxicity

Species: Rat, male and female  
NOAEL: 50 mg/kg  
Application Route: Ingestion  
Exposure time: 2,160 h Number of exposures: 7 d  
Method: Subchronic toxicity

### **Components:**

Phenol, 4-nonyl-, branched:  
Repeated dose toxicity - : Causes severe skin burns and eye damage.  
Assessment

### **Aspiration toxicity**

No data available

### **Experience with human exposure**

General Information: No data available

Inhalation: No data available

Skin contact: No data available

Eye contact: No data available

Ingestion: No data available

### **Toxicology, Metabolism, Distribution**

No data available

### **Neurological effects**

No data available

### **Further information**

Ingestion: No data available

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### 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 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 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

Tris(methylphenyl) phosphate:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 0.6 mg/l  
Exposure time: 96 h  
Test Type: static test

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 0.146 mg/l  
Exposure time: 48 h  
Test Type: static test  
Method: OECD Test Guideline 202

Toxicity to algae : ErC50 : 0.4042 mg/l  
Exposure time: 72 h  
Test Type: static test  
Method: OECD Test Guideline 201

M-Factor (Acute aquatic toxicity) : 1



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Toxicity to microorganisms : EC50 (activated sludge): > 1,000 mg/l  
Exposure time: 3 h

Toxicity to fish (Chronic toxicity) : NOEC: 0.01 mg/l  
Exposure time: 28 d  
Species: Other

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 0.1 mg/l  
Exposure time: 21 d  
Species: Daphnia magna (Water flea)  
Test Type: semi-static test

M-Factor (Chronic aquatic toxicity) : 1

Phenol, 4-nonyl-, branched:

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 0.128 mg/l  
Exposure time: 96 h  
Test Type: flow-through test  
Test substance: Fresh water  
Method: ASTM

LC50 (Lepomis macrochirus (Bluegill sunfish)): 0.209 mg/l  
Exposure time: 96 h  
Test Type: flow-through test  
Test substance: Fresh water  
Method: ASTM

LC50 (Oncorhynchus mykiss (rainbow trout)): 0.221 mg/l  
Exposure time: 96 h  
Test Type: flow-through test  
Test substance: Fresh water  
Method: ASTM

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 0.085 mg/l  
Exposure time: 48 h  
Test Type: static test  
Test substance: Fresh water  
Method: ASTM

EC50 (Daphnia magna (Water flea)): 0.14 mg/l  
Exposure time: 48 h  
Test substance: Fresh water  
Method: Directive 67/548/EEC, Annex V, C.2.

Toxicity to algae : EbC50 (Desmodesmus subspicatus (green algae)): 1.3 mg/l  
Exposure time: 72 h  
Test Type: static test  
Test substance: Fresh water

ErC50 (Selenastrum capricornutum (green algae)): 0.41 mg/l  
Exposure time: 96 h  
Test Type: static test  
Test substance: Fresh water

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Method: EPA OTS 797.1050

M-Factor (Acute aquatic toxicity)	:	10
Toxicity to microorganisms	:	EC50 (activated sludge): 950 mg/l Exposure time: 3 h Test Type: static test Test substance: Fresh water Method: OECD Test Guideline 209
Toxicity to fish (Chronic toxicity)	:	NOEC: 0.006 mg/l Exposure time: 91 d Species: Oncorhynchus mykiss (rainbow trout) Test Type: flow-through test Test substance: Fresh water
Toxicity to soil dwelling organisms	:	EC10: 3.44 mg/kg Exposure time: 504 h  EC50: 906.7 mg/kg Exposure time: 4 Weeks Species: Other Test substance: Synthetic
Toxicity to terrestrial organisms	:	EC10: 63.2 mg/kg Exposure time: 672 h Test substance: Synthetic

### 12.2 Persistence and degradability

#### Components:

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

Biodegradability	:	Inoculum: Sewage (STP effluent) Concentration: 20 mg/l Result: Not readily biodegradable. Biodegradation: 5 % Exposure time: 28 d Method: OECD Test Guideline 301F
Stability in water	:	Degradation half life (DT50): 4.83 d (25 °C) pH: 4 Method: OECD Test Guideline 111 Remarks: Fresh water  Degradation half life (DT50): 7.1 d (25 °C) pH: 9 Method: OECD Test Guideline 111 Remarks: Fresh water  Degradation half life (DT50): 3.58 d (25 °C) pH: 7 Method: OECD Test Guideline 111

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Remarks: Fresh water

Tris(methylphenyl) phosphate:

Biodegradability : Test Type: aerobic  
Inoculum: Sewage (STP effluent)  
Concentration: 100 mg/l  
Result: Readily biodegradable.  
Biodegradation: 80 %  
Exposure time: 28 d  
Method: OECD Test Guideline 301C

Phenol, 4-nonyl-, branched:

Biodegradability : Inoculum: activated sludge  
Concentration: 13 mg/l  
Result: Inherently biodegradable.  
Biodegradation: ca. 48.2 %  
Exposure time: 35 d  
Method: OECD Test Guideline 301B

Inoculum: Sediment  
Concentration: 2  
Result: Inherently biodegradable.  
Biodegradation: 100 %  
Exposure time: 63 - 84 d  
Method: EPA OPPTS 835.5154

Inoculum: Marine water  
Concentration: 11  
Biodegradation: 50 %  
Exposure time: 56 - 112 d  
Method: OECD Test Guideline 309

### 12.3 Bioaccumulative potential

#### Components:

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

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

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

Tris(methylphenyl) phosphate:

Partition coefficient: n-octanol/water : log Pow: 5.93

Phenol, 4-nonyl-, branched:

Bioaccumulation : Species: Lepomis macrochirus (Bluegill sunfish)  
Bioconcentration factor (BCF): 231  
Remarks: Does not bioaccumulate.

Species: Pimephales promelas (fathead minnow)

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Bioconcentration factor (BCF): 740  
Remarks: Bioaccumulation is unlikely.

Partition coefficient: n-octanol/water : log Pow: 5.4 (23 °C)  
pH: 5.7  
Method: OECD Test Guideline 117

### 12.4 Mobility in soil

#### Components:

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

Tris(methylphenyl) phosphate:  
Distribution among environmental compartments : Koc: 4.31  
Method: OECD Test Guideline 121

Phenol, 4-nonyl-, branched:  
Distribution among environmental compartments : Koc: 23000 - 489000

### 12.5 Results of PBT and vPvB assessment

#### Product:

Assessment : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher..

### 12.6 Other adverse effects

#### Product:

Additional ecological information : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.  
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.

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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, TRICRESYL PHOSPHATE)  
**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, TRICRESYL PHOSPHATE)  
**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, TRICRESYL PHOSPHATE)  
**14.3 Transport hazard class(es)** : 9  
**14.4 Packing group** : III  
Labels : 9  
**14.5 Environmental hazards**  
Environmentally hazardous : yes

#### RID

**14.1 UN number** : UN 3082  
**14.2 UN proper shipping name** : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.  
(BISPHENOL A EPOXY RESIN, TRICRESYL PHOSPHATE)

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

**14.4 Packing group** : III

Labels : 9

**14.5 Environmental hazards**

Environmentally hazardous : no

### 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) : 4-nonylphenol, branched

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

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

Other regulations:

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

Take note of Directive 94/33/EC on the protection of young people at work or stricter national regulations, where applicable.

#### The components of this product are reported in the following inventories:

DSL : All components of this product are on the Canadian DSL

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

NZIoC : Not in compliance with the inventory

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

KECI : Not in compliance with the inventory

PICCS : Not in compliance with the inventory

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

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TCSI : Not in compliance with the inventory

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

### Inventories

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

### 15.2 Chemical safety assessment

Chemical Safety Assessments for all substances in this product are either Complete or Not applicable.

## SECTION 16: Other information

### Full text of H-Statements

H302 : Harmful if swallowed.  
H314 : Causes severe skin burns and eye damage.  
H315 : Causes skin irritation.  
H317 : May cause an allergic skin reaction.  
H319 : Causes serious eye irritation.  
H361 : Suspected of damaging fertility or the unborn child.  
H361fd : Suspected of damaging fertility. Suspected of damaging the unborn child.  
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 : Short-term (acute) aquatic hazard  
Aquatic Chronic : Long-term (chronic) aquatic hazard  
Eye Irrit. : Eye irritation  
Repr. : Reproductive toxicity  
Skin Corr. : Skin corrosion  
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
Repr. 2	H361
Aquatic Chronic 2	H411

#### Classification procedure:

Calculation method
Calculation method
Calculation method
Calculation method
Calculation method

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