

**Safety Data Sheet**

According to Regulation EC No. 1907/2006

**Laminierharz GP 200**

Date of issue/Date of revision: 24.02.2021

en / GB - Version 1.4

**1. Identification of the substance/preparation and of the company/undertaking****1.1 Identification of the substance or preparation:**

Laminierharz GP 200

**1.2 Use of the substance/preparation:**

Epoxy resin solution

**1.3 Company/undertaking identification**

Company name: Gößl + Pfaff GmbH  
 Street: Münchener Str. 13  
 Place: 85123 Karlskron/Brautlach  
 Telephone: +49 (0) 8450 / 932-0  
 Fax.: +49 (0) 8450 / 932-13  
 Contact person: Management: Mr. Gößl, Mr. Pfaff  
 E-Mail: info@goessl-pfaff.de  
 Internet: [www.goessl-pfaff.de](http://www.goessl-pfaff.de)  
 Responsible Department: Management

**1.4 Emergency telephone****Emergency CONTACT (24-Hour-Number): GBK GmbH +49 (0) 6132-84463****2. Hazards identification****2.1 Classification of the substance or mixture****Classification (REGULATION (EC) No 1272/2008)**

Skin corrosion, Sub-category 1C H314: Causes severe skin burns and eye damage.  
 Serious eye damage, Category 1 H318: Causes serious eye damage.  
 Skin sensitisation, Category 1 H317: May cause an allergic skin reaction.  
 Germ cell mutagenicity, Category 2 H341: Suspected of causing genetic defects.  
 Reproductive toxicity, Category 1B H360F: May damage fertility.  
 Long-term (chronic) aquatic hazard, Category 2 H411: Toxic to aquatic life with long lasting effects.

**2.2 Label elements****Labelling (REGULATION (EC) No 1272/2008)****Hazard pictograms:**

Signal word: Danger

**Hazard statements:**

H314 Causes severe skin burns and eye damage.  
 H317 May cause an allergic skin reaction.  
 H341 Suspected of causing genetic defects.  
 H360F May damage fertility.  
 H411 Toxic to aquatic life with long lasting effects.

**Precautionary statements:****Prevention:**

P201 Obtain special instructions before use.  
 P273 Avoid release to the environment.  
 P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

**Reaction:**

P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.

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P304+P340+P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor.

P305+P351+P338+P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor.

P308+P313 IF exposed or concerned: Get medical advice/ attention.

P391 Collect spillage.

#### Hazardous components which must be listed on the label:

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

Reaction mass of 1-(2,3-epoxypropoxy)-2,2-bis((2,3-epoxypropoxy)methyl) butane and 1-(2,3-epoxypropoxy)-2-((2,3-epoxypropoxy)methyl)-2-hydroxymethyl butane

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

#### 2.3 Other hazards

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

### 3. Composition/information on ingredients

#### 3.2 Mixtures

Chemical nature: Epoxy resin solution

#### Hazardous components

Chemical name	CAS-No. EC-No. INDEX-No. Registration number	Classification	Concentration (% w/w)
Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol	9003-36-5 500-006-8 01-2119454392-40	Skin Irrit. 2; H315 Skin Sens. 1; H317 Aquatic Chronic 2; H411	>= 30 – < 50
Reaction mass of 1-(2,3-epoxypropoxy)-2,2-bis((2,3-epoxypropoxy)methyl), butane and 1-(2,3-epoxypropoxy)-2-((2,3-epoxypropoxy)methyl)-2-hydroxymethyl butane	Not assigned - 01-2120078341-60	Skin Corr. 1C; H314 Eye Dam. 1; H318 Skin Sens. 1B; H317 Muta. 2; H341 Repr. 1B; H360F Aquatic Chronic 2; H411	>= 30 – < 50
2,2'-[(1-methylethylidene)bis-(4,1-phenyleneoxymethylene)]-bisoxirane	1675-54-3 216-823-5 603-073-00-2 01-2119456619-26	Skin Irrit. 2; H315 Eye Irrit. 2; H319 Skin Sens. 1; H317 Aquatic Chronic 2; H411	>= 10 – < 20

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.

### 4. First aid measures

#### 4.1 Description of first aid measures

##### General advice:

Move out of dangerous area.

Consult a physician.

Show this safety data sheet to the doctor in attendance.

Treat symptomatically.

Get medical attention if symptoms occur.

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#### **If inhaled:**

If inhaled, remove to fresh air.  
Immediately call a POISON CENTER/doctor.  
Get medical attention if symptoms occur.

#### **In case of skin contact:**

Immediate medical treatment is necessary as untreated wounds from corrosion of the skin heal slowly and with difficulty.  
If on skin, rinse well with water.  
If on clothes, remove clothes.

#### **In case of eye contact:**

Small amounts splashed into eyes can cause irreversible tissue damage and blindness.  
In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.  
Continue rinsing eyes during transport to hospital.  
Remove contact lenses.  
Keep eye wide open while rinsing.  
If eye irritation persists, consult a specialist.

#### **If swallowed:**

Keep respiratory tract clear.  
Do NOT induce vomiting.  
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.

## **5. Fire-fighting 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  
Halogenated compounds

### **5.3 Advice for firefighters**

Special protective equipment for firefighters:  
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.

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#### 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.

#### 7. Handling and storage

##### 7.1 Precautions for safe handling

###### Advice on safe handling:

Do not breathe vapours/dust.

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.

To avoid spills during handling keep bottle on a metal tray.

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.

**Storage class (TRGS 510):** 10, Combustible liquids

###### Further information on storage stability:

Stable under normal conditions.

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#### 7.3 Specific end use(s)

Specific use(s): No data available.

### 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 route	Potential health effects	Value	
2,2'-[(1-methylethylidene)-bis(4,1-phenyleneoxy-methylene)]bisoxirane	Workers	Dermal	Systemic effects, Short-term exposure	8,33 mg/kg bw/day	
	Workers	Inhalation	Systemic effects, Short-term exposure	12,25 mg/m <sup>3</sup>	
	Workers	Dermal	Systemic effects, Long-term exposure	8,33 mg/kg bw/day	
	Workers	Inhalation	Systemic effects, Long-term exposure	12,25 mg/m <sup>3</sup>	
	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	
	Reaction mass of 1-(2,3-epoxypropoxy)-2,2-bis((2,3-epoxypropoxy)-methyl)butane and 1-(2,3-epoxypropoxy)-2-((2,3-epoxypropoxy)methyl)-2-hydroxymethylbutane	Workers	Inhalation	Long-term systemic effects	1.17 mg/m <sup>3</sup>
		Workers	Dermal	Long-term systemic effects	0.67 mg/kg bw/day
Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol	Workers	Dermal	Acute local effects	0,0083 mg/cm <sup>2</sup>	
	Workers	Dermal	Long-term systemic effects	104,15 mg/kg	
	Workers	Inhalation	Long-term systemic effects	29,39 mg/m <sup>3</sup>	
	Consumers	Dermal	Long-term systemic effects	62,5 mg/kg	
	Consumers	Inhalation	Long-term systemic effects	8,7 mg/m <sup>3</sup>	
Consumers	Oral	Long-term systemic effects	6,25 mg/kg		

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

Substance name	Environmental Compartment	Value
2,2'-[(1-methylethylidene)bis(4,1-phenylenoxymethylen)]bisoxiran	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

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Reaction mass of 1-(2,3- epoxypropoxy)-2,2-bis ((2,3- epoxypropoxy)methyl) butane and 1-(2,3-epoxypropoxy)-2-((2,3- epoxypropoxy)methyl)-2- hydroxymethyl butane	Fresh water	0,004 mg/l
Assessment Factors		
	Marine water	0,0003 mg/l
Assessment Factors		
	Intermittent use/release	0.0254 mg/l
Assessment Factors		
	Fresh water sediment	0.294 mg/kg
Equilibrium method		
	Marine sediment	0.0294 mg/kg
Equilibrium method		
	Soil	0.237 mg/kg
Equilibrium method		
	Sewage treatment plant	10 mg/l
Assessment Factors		

#### 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

Material: Ethyl Vinyl Alcohol Laminate (EVAL)

Break through time: > 8 h

Material: Nitrile rubber

Material: Neoprene

Break through time: 10–480 min

##### Remarks:

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

Take note of the information given by the producer concerning permeability and break through times, and of special workplace conditions (mechanical strain, duration of contact).

##### 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:

Use respiratory protection unless adequate local exhaust ventilation is provided or exposure assessment demonstrates that exposures are within recommended exposure guidelines.

Filter type:

Combined particulates and organic vapour type (A-P)

## 9. Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

Appearance:	liquid
Colour:	yellow
Odour:	light
Odour Threshold:	No data is available on the product itself.
pH:	No data is available on the product itself.

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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: estimated, 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	< 0.1 hPa (20 °C)
Relative vapour density	No data is available on the product itself.
Relative density	No data is available on the product itself.
Density	1,16 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	
Viscosity, dynamic	500–700 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.

### 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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**11. Toxicological information****11.1 Information on toxicological effects****Acute toxicity****Components:**

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

Acute oral toxicity :

LD50 (Rat, male and female): &gt; 5,000 mg/kg

Method: OECD Test Guideline 401

Reaction mass of 1-(2,3-epoxypropoxy)-2,2-bis ((2,3-epoxypropoxy)methyl) butane and 1-(2,3- epoxypropoxy)-2-((2,3-epoxypropoxy)methyl)-2-hydroxymethyl butane:

Acute oral toxicity :

LD50 (Rat): &gt; 2,000 mg/kg

LD50 (Rat, male and female): 3,398 mg/kg

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

Acute oral toxicity:

LD50 (Rat, female): &gt; 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:**

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

Acute dermal toxicity:

LD50 (Rat, male and female): &gt; 2,000 mg/kg

Method: OECD Test Guideline 402

Assessment: The substance or mixture has no acute dermal toxicity

Reaction mass of 1-(2,3-epoxypropoxy)-2,2-bis ((2,3-epoxypropoxy)methyl) butane and 1-(2,3- epoxypropoxy)-2-((2,3-epoxypropoxy)methyl)-2-hydroxymethyl butane:

Acute dermal toxicity:

LD50 (Rat, male and female): &gt; 3,170 mg/kg

Assessment: The substance or mixture has no acute dermal toxicity

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

Acute dermal toxicity:

LD50 (Rat, male and female): &gt; 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:**

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

Species: Rabbit

Method: OECD Test Guideline 404

Result: Irritating to skin.

Reaction mass of 1-(2,3-epoxypropoxy)-2,2-bis ((2,3-epoxypropoxy)methyl) butane and 1-(2,3- epoxypropoxy)-2-((2,3-epoxypropoxy)methyl)-2-hydroxymethyl butane:

Species: Rabbit

Result: Corrosive, category 1C - where responses occur after exposures between 1 hour and 4 hours and observations up to 14 days.

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

Species: Rabbit

Assessment: Mild skin irritant

Method: OECD Test Guideline 404

Result: Irritating to skin.



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**Serious eye damage/eye irritation****Components:**

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

Species: Rabbit

Method: OECD Test Guideline 405

Result: No eye irritation

**Components**

Reaction mass of 1-(2,3-epoxypropoxy)-2,2-bis ((2,3-epoxypropoxy)methyl) butane and 1-(2,3- epoxypropoxy)-2-((2,3-epoxypropoxy)methyl)-2-hydroxymethyl butane:

Species: Rabbit

Result: Irreversible effects on the eye

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

Species: Rabbit

Assessment: Mild eye irritant

Method: OECD Test Guideline 405

Result: Irritating to eyes.

Respiratory or skin sensitisation

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

Exposure routes: Skin

Species: Mouse

Method: OECD Test Guideline 429

Result: May cause sensitisation by skin contact.

Reaction mass of 1-(2,3-epoxypropoxy)-2,2-bis ((2,3-epoxypropoxy)methyl) butane and 1-(2,3- epoxypropoxy)-2-((2,3-epoxypropoxy)methyl)-2-hydroxymethyl butane:

Exposure routes: Skin

Species: Guinea pig

Result: The product is a skin sensitiser, sub-category 1B.

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.

Assessment: No data available

**Germ cell mutagenicity****Components:**

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

Genotoxicity in vitro

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 471

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

Reaction mass of 1-(2,3-epoxypropoxy)-2,2-bis ((2,3-epoxypropoxy)methyl) butane and 1-(2,3- epoxypropoxy)-2-((2,3-epoxypropoxy)methyl)-2-hydroxymethyl butane:

Genotoxicity in vitro:

Test Type: Chromosome aberration test in vitro

Test system: Chinese hamster ovary cells

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Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 473

Result: positive

Test Type: Ames test

Test system: Salmonella typhimurium

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 471

Result: positive

Test Type: In vitro mammalian cell gene mutation test

Test system: Chinese hamster ovary cells

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 476

Result: positive

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

#### Components:

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

Genotoxicity in vivo:

Cell type: Somatic

Application Route: Oral

Exposure time: 48 h

Dose: 2000 mg/kg

Method: OECD Test Guideline 474

Result: negative

Cell type: Somatic

Application Route: Oral

Dose: 2000 mg/kg

Method: OECD Test Guideline 486

Result: negative

Reaction mass of 1-(2,3-epoxypropoxy)-2,2-bis ((2,3-epoxypropoxy)methyl) butane and 1-(2,3- epoxypropoxy)-2-((2,3-epoxypropoxy)methyl)-2-hydroxymethyl butane:

Genotoxicity in vivo:

Test Type: comet assay

Test species: Rat

Application Route: Oral

Dose: 500, 1000, 2000

Result: positive

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:

Reaction mass of 1-(2,3-epoxypropoxy)-2,2-bis ((2,3-epoxypropoxy)methyl) butane and 1-(2,3- epoxypropoxy)-2-((2,3-epoxypropoxy)methyl)-2-hydroxymethyl butane:

Germ cell mutagenicity- Assessment: In vitro tests showed 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

Carcinogenicity – Assessment: No data available

#### Reproductive toxicity

##### Components:

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

Effects on fertility:

Species: Rat, male and female

Application Route: Oral

Method: OECD Test Guideline 416

Result: No effects on fertility and early embryonic development were detected.

Reaction mass of 1-(2,3-epoxypropoxy)-2,2-bis ((2,3-epoxypropoxy)methyl) butane and 1-(2,3- epoxypropoxy)-2-((2,3-epoxypropoxy)methyl)-2-hydroxymethyl butane:

Species: Rat, male and female

Application Route: Oral

Dose: 0, 30, 100, 300 milligram per kilogram

Frequency of Treatment: 7 days/week

General Toxicity - Parent: No observed adverse effect level:

100 mg/kg body weight

Method: OECD Test Guideline 422

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

Test Type: Two-generation study

Species: Rat, male and female

Application Route: Oral

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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.

#### Components:

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

Effects on foetal development:

Species: Rabbit, female

Application Route: Dermal

General Toxicity Maternal: No observed adverse effect level:

30 mg/kg body weight

Result: No teratogenic effects

Reaction mass of 1-(2,3-epoxypropoxy)-2,2-bis ((2,3-epoxypropoxy)methyl) butane and 1-(2,3- epoxypropoxy)-2-((2,3-epoxypropoxy)methyl)-2-hydroxymethyl butane:

Species: Rat, male and female

Application Route: Oral

Dose: 0,30,100,300 milligram per kilogram

Frequency of Treatment: 7 days/week

Developmental Toxicity: No observed adverse effect level:

100 mg/kg body weight

Method: OECD Test Guideline 422

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

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

#### Components:

Reaction mass of 1-(2,3-epoxypropoxy)-2,2-bis ((2,3-epoxypropoxy)methyl) butane and 1-(2,3- epoxypropoxy)-2-((2,3-epoxypropoxy)methyl)-2-hydroxymethyl butane:

Reproductive toxicity – Assessment:

Clear evidence of adverse effects on sexual function and fertility, based on animal experiments.

#### STOT - single exposure

No data available

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**STOT - repeated exposure****Components:**

Reaction mass of 1-(2,3-epoxypropoxy)-2,2-bis ((2,3-epoxypropoxy)methyl) butane and 1-(2,3- epoxypropoxy)-2-((2,3-epoxypropoxy)methyl)-2-hydroxymethyl butane:

Exposure routes: Ingestion

Assessment: The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

**Repeated dose toxicity****Components:**

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

Species: Rat, male and female

NOAEL: 250 mg/kg

Application Route: Ingestion

Exposure time: 13 Weeks

Number of exposures: 7 d

Method: Subchronic toxicity

Reaction mass of 1-(2,3-epoxypropoxy)-2,2-bis ((2,3-epoxypropoxy)methyl) butane and 1-(2,3- epoxypropoxy)-2-((2,3-epoxypropoxy)methyl)-2-hydroxymethyl butane:

Species: Rat, male and female

NOAEL: 300 mg/kg

Application Route: Oral

Exposure time: 56 d

Number of exposures: Daily

Dose: 0, 30, 100, 300 mg/kg bw/day

Group: yes

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

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

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**Neurological effects**

No data available

**Further information**

Ingestion: No data available

**12. Ecological information****12.1 Toxicity****Components:**

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

Toxicity to fish:

LC50 (Fish): 2.54 mg/l

Exposure time: 96 h

Method: Calculation method

Toxicity to daphnia and other aquatic invertebrates:

EC50 (Daphnia magna (Water flea)): 2.55 mg/l

Exposure time: 48 h

Method: Calculation method

Toxicity to algae/aquatic plants:

EC50 (Selenastrum capricornutum (green algae)): 1.8 mg/l

Exposure time: 72 h

Test Type: static test

Test substance: Fresh water

Method: OECD Test Guideline 201

Toxicity to microorganisms:

IC50 (activated sludge): &gt; 100 mg/l

Exposure time: 3 h

Test Type: static test

Test substance: Fresh water

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity):

NOEC: 0.3 mg/l

Exposure time: 21 d

Species: Daphnia magna (Water flea)

Test Type: semi-static test

Test substance: Fresh water

Method: OECD Test Guideline 211

Remarks: Information given is based on data obtained from similar substances.

Reaction mass of 1-(2,3-epoxypropoxy)-2,2-bis((2,3-epoxypropoxy)methyl) butane and 1-(2,3- epoxypropoxy)-2-((2,3-epoxypropoxy)methyl)-2-hydroxymethyl butane:

Toxicity to fish:

LC50:75mg/l

Exposure time: 96 h

Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates:

EC50 (Daphnia magna (Water flea)): 3.7 mg/l Exposure time: 48h

Test Type: static test

Test substance: Fresh water

Method: OECD Test Guideline 202

Toxicity to algae/aquatic plants:

ErC50 (Pseudokirchneriella subcapitata (green algae)): 9 mg/l

Exposure time: 72 h

Test Type: static test

Test substance: Fresh water

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**Toxicity to microorganisms:**EC10 (*Pseudomonas putida*): 6,310 mg/l

End point: Growth rate

Exposure time: 18 h

EC50 (*Pseudomonas putida*): > 10 mg/l

End point: Growth rate

Exposure time: 18 h

**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/aquatic plants:**EC50 (*Selenastrum capricornutum* (green algae)): 9.4 mg/l

Exposure time: 72 h

Test Type: static test

Test substance: Fresh water

Method: EPA-660/3-75-009

**Toxicity to microorganisms:**

IC50 (activated sludge): &gt; 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

**12.2 Persistence and degradability****Components:**

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

**Biodegradability:**

Inoculum: activated sludge

Concentration: 3 mg/l

Result: Not biodegradable

Biodegradation: ca. 0 %

Exposure time: 28 d

Method: Directive 67/548/EEC Annex V, C.4.E.

Reaction mass of 1-(2,3-epoxypropoxy)-2,2-bis((2,3-epoxypropoxy)methyl) butane and 1-(2,3-epoxypropoxy)-2-((2,3-epoxypropoxy)methyl)-2-hydroxymethyl butane:

**Biodegradability:**

Inoculum: Sewage (STP effluent)

Concentration: 100 mg/l

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Result: Not readily biodegradable.

Biodegradation: 8 %

Exposure time: 28 d

Method: OECD Test Guideline 301F

Inoculum: activated sludge

Concentration: 100 mg/l

Result: Inherently biodegradable.

Biodegradation: 25 %

Exposure time: 28 d

Method: OECD Test Guideline 302B

Stability in water:

Degradation half life: ca. 1 yr (25 °C)

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

Biodegradability:

Inoculum: Sewage (STP effluent)

Concentration: 20 mg/l

Result: Not readily biodegradable.

Biodegradation: 5 %

Exposure time: 28 d

Method: OECD Test Guideline 301F

Stability in water:

Degradation half life (DT50): 4.83 d (25 °C)

pH: 4

Method: OECD Test Guideline 111

Remarks: Fresh water

Degradation half life (DT50): 7.1 d (25 °C)

pH: 9

Method: OECD Test Guideline 111

Remarks: Fresh water

Degradation half life (DT50): 3.58 d (25 °C)

pH: 7

Method: OECD Test Guideline 111

Remarks: Fresh water

### 12.3 Bioaccumulative potential

#### Components:

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

Bioaccumulation:

Species: Fish

Bioconcentration factor (BCF): 150

Remarks: Does not bioaccumulate.

Partition coefficient: n-octanol/water:

log Pow: 2.7 - 3.6

Method: OECD Test Guideline 117

Reaction mass of 1-(2,3-epoxypropoxy)-2,2-bis((2,3-epoxypropoxy)methyl) butane and 1-(2,3- epoxypropoxy)-2-((2,3-epoxypropoxy)methyl)-2-hydroxymethyl butane:

Partition coefficient: n-octanol/water:

log Pow: 0.467 (20 °C)

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

Bioaccumulation:

Bioconcentration factor (BCF): 31

Remarks: Does not bioaccumulate.



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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:

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

Distribution among environmental compartments: Koc: 4460

Method: OECD Test Guideline 121

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

Distribution among environmental compartments: Koc: 445

#### 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.

### 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.

### 14. Transport information

#### IATA

**14.1 UN number** UN 1760

**14.2 UN proper shipping name** Corrosive liquid, n.o.s.

(TRIMETHYLOLPROPANE TRIGLYCIDYLETHER,  
BISPHENOL F EPOXY RESIN)

**14.3 Transport hazard class(es)** 8

**14.4 Packing group** III

Labels Corrosive

Packing instructions (cargo aircraft) 856

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Packing instructions  
(passenger aircraft) 852**IMDG****14.1 UN number** UN 1760**14.2 UN proper shipping name** CORROSIVE LIQUID, N.O.S.(TRIMETHYLOLPROPANE TRIGLYCIDYLETHER,  
BISPHENOL F EPOXY RESIN)**14.3 Transport hazard class(es)** 8**14.4 Packing group** III

Labels 8

EmS Code F-A, S-B

**14.5 Environmental hazards**

Marine pollutant yes

**ADR****14.1 UN number** UN 1760**14.2 UN proper shipping name** CORROSIVE LIQUID, N.O.S.(TRIMETHYLOLPROPANE TRIGLYCIDYLETHER,  
BISPHENOL F EPOXY RESIN)**14.3 Transport hazard class(es)** 8**14.4 Packing group** III

Labels 8

**14.5 Environmental hazards**

Environmental hazardous yes

**RID****14.1 UN number** UN 1760**14.2 UN proper shipping name** CORROSIVE LIQUID, N.O.S.(TRIMETHYLOLPROPANE TRIGLYCIDYLETHER,  
BISPHENOL F EPOXY RESIN)**14.3 Transport hazard class(es)** 8**14.4 Packing group** III

Labels 8

**14.5 Environmental hazards**

Environmental hazardous yes

**14.7 Transport in bulk according to Annex II of Marpol and the IBC Code**

Not applicable for product as supplied.

**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

Other regulations:

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

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

#### 16. Other information

**Full text of H-Statements**

H314: Causes severe skin burns and eye damage.  
 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.  
 H360F: May damage fertility.  
 H411: Toxic to aquatic life with long lasting effects.

**Full text of other abbreviations**

Aquatic Chronic	Long-term (chronic) aquatic hazard
Eye Dam.	Serious eye damage
Eye Irrit.	Eye irritation
Muta.	Germ cell mutagenicity
Repr.	Reproductive toxicity
Skin Corr.	Skin corrosion
Skin Irrit.	Skin irritation
Skin Sens.	Skin sensitisation

**Further information**

**Classification of the mixture:**

Skin Corr. 1C	H314
Eye Dam. 1	H318
Skin Sens. 1	H317
Muta. 2	H341
Repr. 1B	H360F
Aquatic Chronic 2	H411

**Classification procedure:**

Calculation method
Calculation method
Calculation method
Calculation method
Calculation method
Calculation method

The information of this MSDS is based on the present state of our knowledge and meets the requirements of EU and national laws. The user's working conditions however, are beyond our knowledge and control. The product is not to be used for purposes other than those specified under Section 1 without a written permission. It remains the responsibility of the user to ensure that the necessary steps are taken to meet the laws and regulations. Handling of the product may only be done by people above 18 years of age, who are satisfactorily informed of how to do the work, the hazardous properties and necessary safety precautions. The information given in this SDS is to describe the product only in terms of health and safety requirements and should not, therefore, be construed as guaranteeing specific properties.