

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

HUNTSMAN

Enriching lives through innovation

ARALDITE® METAL RESIN

Version 1.2 Revision Date: 13.08.2019 SDS Number: 400001021213 Date of last issue: 08.10.2018
Date of first issue: 05.10.2018

Print Date 20.10.2021

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

1.1 Product identifier

Trade name : ARALDITE® METAL RESIN

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.
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)

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Hazard pictograms :



Signal word : Warning

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

Precautionary statements : **Prevention:**
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.
Response:
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

2-Propenoic acid, reaction products with dipentaerythritol

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

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; H411	>= 25 - < 30
2-Propenoic acid, reaction products with dipentaerythritol	1384855-91-7 - 01-2119980666-22	Eye Irrit. 2; H319 Skin Sens. 1A; H317 Aquatic Chronic 3;	>= 10 - < 20

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		H412	
Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol (BFDGE)	Not Assigned - 01-2119454392-40	Skin Irrit. 2; H315 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

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 : Keep respiratory tract clear.
Never give anything by mouth to an unconscious person.
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.

Unsuitable extinguishing media : High volume water jet

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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 Metal 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.
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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.
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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.
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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.

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

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
aluminium	7429-90-5	TWA (inhalable dust)	10 mg/m ³	GB EH40
Further information	For the purposes of these limits, respirable dust and inhalable dust are those fractions of airborne dust which will be collected when sampling is undertaken in accordance with the methods described in MDHS14/4 General methods for sampling and gravimetric analysis or respirable, thoracic and inhalable aerosols, The COSHH definition of a substance hazardous to health includes dust of any kind when present at a concentration in air equal to or greater than 10 mg.m ⁻³ 8-hour TWA of inhalable dust or 4 mg.m ⁻³ 8-hour TWA of respirable dust. This means that any dust will be subject to COSHH if people are exposed to dust above these levels. Some dusts have been assigned specific WELs and exposure to these must comply with the appropriate limits.,			

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	<p>Most industrial dusts contain particles of a wide range of sizes. The behaviour, deposition and fate of any particular particle after entry into the human respiratory system, and the body response that it elicits, depend on the nature and size of the particle. HSE distinguishes two size fractions for limit-setting purposes termed 'inhalable' and 'respirable'. Inhalable dust approximates to the fraction of airborne material that enters the nose and mouth during breathing and is therefore available for deposition in the respiratory tract. Respirable dust approximates to the fraction that penetrates to the gas exchange region of the lung. Fuller definitions and explanatory material are given in MDHS14/4. Where dusts contain components that have their own assigned WEL, all the relevant limits should be complied with. Where no specific short-term exposure limit is listed, a figure three times the long-term exposure limit should be used.</p>			
		TWA (Respirable dust)	4 mg/m ³	GB EH40
Further information	<p>For the purposes of these limits, respirable dust and inhalable dust are those fractions of airborne dust which will be collected when sampling is undertaken in accordance with the methods described in MDHS14/4 General methods for sampling and gravimetric analysis or respirable, thoracic and inhalable aerosols, The COSHH definition of a substance hazardous to health includes dust of any kind when present at a concentration in air equal to or greater than 10 mg.m⁻³ 8-hour TWA of inhalable dust or 4 mg.m⁻³ 8-hour TWA of respirable dust. This means that any dust will be subject to COSHH if people are exposed to dust above these levels. Some dusts have been assigned specific WELs and exposure to these must comply with the appropriate limits. Most industrial dusts contain particles of a wide range of sizes. The behaviour, deposition and fate of any particular particle after entry into the human respiratory system, and the body response that it elicits, depend on the nature and size of the particle. HSE distinguishes two size fractions for limit-setting purposes termed 'inhalable' and 'respirable'. Inhalable dust approximates to the fraction of airborne material that enters the nose and mouth during breathing and is therefore available for deposition in the respiratory tract. Respirable dust approximates to the fraction that penetrates to the gas exchange region of the lung. Fuller definitions and explanatory material are given in MDHS14/4. Where dusts contain components that have their own assigned WEL, all the relevant limits should be complied with. Where no specific short-term exposure limit is listed, a figure three times the long-term exposure limit should be used.</p>			
Barium sulfate	7727-43-7	TWA (inhalable dust)	10 mg/m ³	GB EH40
Further information	<p>For the purposes of these limits, respirable dust and inhalable dust are those fractions of airborne dust which will be collected when sampling is undertaken in accordance with the methods described in MDHS14/4 General methods for sampling and gravimetric analysis or respirable, thoracic and inhalable aerosols, The COSHH definition of a substance hazardous to health includes dust of any kind when present at a concentration in air equal to or greater than 10 mg.m⁻³ 8-hour TWA of inhalable dust or 4 mg.m⁻³ 8-hour TWA of respirable dust. This means that any dust will be subject to COSHH if people are exposed to dust above these levels. Some dusts have been assigned specific WELs and exposure to these must comply with the appropriate limits. Most industrial dusts contain particles of a wide range of sizes. The behaviour, deposition and fate of any particular particle after entry into the human respiratory system, and the body response that it elicits, depend on the nature and size of the particle. HSE distinguishes two size fractions for limit-setting purposes termed 'inhalable' and 'respirable'. Inhalable dust approximates to</p>			

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	the fraction of airborne material that enters the nose and mouth during breathing and is therefore available for deposition in the respiratory tract. Respirable dust approximates to the fraction that penetrates to the gas exchange region of the lung. Fuller definitions and explanatory material are given in MDHS14/4., Where dusts contain components that have their own assigned WEL, all the relevant limits should be complied with., Where no specific short-term exposure limit is listed, a figure three times the long-term exposure limit should be used.			
		TWA (Respirable dust)	4 mg/m ³	GB EH40
Further information	For the purposes of these limits, respirable dust and inhalable dust are those fractions of airborne dust which will be collected when sampling is undertaken in accordance with the methods described in MDHS14/4 General methods for sampling and gravimetric analysis or respirable, thoracic and inhalable aerosols, The COSHH definition of a substance hazardous to health includes dust of any kind when present at a concentration in air equal to or greater than 10 mg.m ⁻³ 8-hour TWA of inhalable dust or 4 mg.m ⁻³ 8-hour TWA of respirable dust. This means that any dust will be subject to COSHH if people are exposed to dust above these levels. Some dusts have been assigned specific WELs and exposure to these must comply with the appropriate limits., Most industrial dusts contain particles of a wide range of sizes. The behaviour, deposition and fate of any particular particle after entry into the human respiratory system, and the body response that it elicits, depend on the nature and size of the particle. HSE distinguishes two size fractions for limit-setting purposes termed 'inhalable' and 'respirable'. Inhalable dust approximates to the fraction of airborne material that enters the nose and mouth during breathing and is therefore available for deposition in the respiratory tract. Respirable dust approximates to the fraction that penetrates to the gas exchange region of the lung. Fuller definitions and explanatory material are given in MDHS14/4., Where dusts contain components that have their own assigned WEL, all the relevant limits should be complied with., Where no specific short-term exposure limit is listed, a figure three times the long-term exposure limit should be used.			
Silicon dioxide	7631-86-9	TWA (inhalable dust)	6 mg/m ³ (Silica)	GB EH40
Further information	For the purposes of these limits, respirable dust and inhalable dust are those fractions of airborne dust which will be collected when sampling is undertaken in accordance with the methods described in MDHS14/4 General methods for sampling and gravimetric analysis or respirable, thoracic and inhalable aerosols, The COSHH definition of a substance hazardous to health includes dust of any kind when present at a concentration in air equal to or greater than 10 mg.m ⁻³ 8-hour TWA of inhalable dust or 4 mg.m ⁻³ 8-hour TWA of respirable dust. This means that any dust will be subject to COSHH if people are exposed to dust above these levels. Some dusts have been assigned specific WELs and exposure to these must comply with the appropriate limits., Most industrial dusts contain particles of a wide range of sizes. The behaviour, deposition and fate of any particular particle after entry into the human respiratory system, and the body response that it elicits, depend on the nature and size of the particle. HSE distinguishes two size fractions for limit-setting purposes termed 'inhalable' and 'respirable'. Inhalable dust approximates to the fraction of airborne material that enters the nose and mouth during breathing and is therefore available for deposition in the respiratory tract. Respirable dust approximates to the fraction that penetrates to the gas exchange region of the lung. Fuller definitions and explanatory material are given in MDHS14/4., Where dusts contain components that have their own			

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	assigned WEL, all the relevant limits should be complied with., Where no specific short-term exposure limit is listed, a figure three times the long-term exposure limit should be used.		
	TWA (Respirable dust)	2.4 mg/m ³ (Silica)	GB EH40
Further information	<p>For the purposes of these limits, respirable dust and inhalable dust are those fractions of airborne dust which will be collected when sampling is undertaken in accordance with the methods described in MDHS14/4 General methods for sampling and gravimetric analysis or respirable, thoracic and inhalable aerosols, The COSHH definition of a substance hazardous to health includes dust of any kind when present at a concentration in air equal to or greater than 10 mg.m⁻³ 8-hour TWA of inhalable dust or 4 mg.m⁻³ 8-hour TWA of respirable dust. This means that any dust will be subject to COSHH if people are exposed to dust above these levels. Some dusts have been assigned specific WELs and exposure to these must comply with the appropriate limits., Most industrial dusts contain particles of a wide range of sizes. The behaviour, deposition and fate of any particular particle after entry into the human respiratory system, and the body response that it elicits, depend on the nature and size of the particle. HSE distinguishes two size fractions for limit-setting purposes termed 'inhalable' and 'respirable'. Inhalable dust approximates to the fraction of airborne material that enters the nose and mouth during breathing and is therefore available for deposition in the respiratory tract. Respirable dust approximates to the fraction that penetrates to the gas exchange region of the lung. Fuller definitions and explanatory material are given in MDHS14/4., Where dusts contain components that have their own assigned WEL, all the relevant limits should be complied with., Where no specific short-term exposure limit is listed, a figure three times the long-term exposure limit should be used.</p>		
	TWA (Respirable dust)	0.1 mg/m ³	2004/37/EC
Further information	Carcinogens or mutagens		

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/m ³
	Workers	Dermal	Systemic effects, Long-term exposure	8.33 mg/kg bw/day
	Workers	Inhalation	Systemic effects, Long-term exposure	12.25 mg/m ³
	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

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	Consumers	Oral	Systemic effects, Long-term exposure	0.75 mg/kg bw/day
Barium sulfate	Workers	Inhalation	Long-term systemic effects	10 mg/m3
	Workers	Inhalation	Long-term local effects	10 mg/m3
	Consumer use	Inhalation	Long-term systemic effects	10 mg/m3
	Consumer use	Oral	Long-term systemic effects	13000 mg/kg
Bis(2-ethylhexyl) adipate	Workers	Inhalation	Long-term systemic effects	17.8 mg/m3
	Workers	Dermal	Long-term systemic effects	25.5 mg/kg bw/day
	Consumers	Inhalation	Long-term systemic effects	4.4 mg/m3
	Consumers	Dermal	Long-term systemic effects	13 mg/kg bw/day
	Consumers	Oral	Long-term systemic effects	1.7 mg/kg bw/day
Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol (BFDGE)	Workers	Dermal	Acute local effects	0.0083 mg/cm2
	Workers	Dermal	Long-term systemic effects	104.15 mg/kg
	Workers	Inhalation	Long-term systemic effects	29.39 mg/m3
	Consumers	Dermal	Long-term systemic effects	62.5 mg/kg
	Consumers	Inhalation	Long-term systemic effects	8.7 mg/m3
	Consumers	Oral	Long-term systemic effects	6.25 mg/kg
Silicon dioxide	Workers	Inhalation	Long-term systemic effects	4 mg/m3

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	

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	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
Barium sulfate	Fresh water	115 µg/l
	Sewage treatment plant	62.2 mg/l
	Assessment Factors	
	Fresh water sediment	600.4 mg/kg
	Assessment Factors	
	Soil	207.7 mg/kg
	Assessment Factors	
Bis(2-ethylhexyl) adipate	Soil	0.865 mg/kg dry weight (d.w.)
Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol (BFDGE)	Fresh water	0.003 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

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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)

Material : Nitrile rubber
Break through time : 10 - 480 min

Material : Neoprene gloves

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 : 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)

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance : liquid

Colour : grey

Odour : No data is available on the product itself.

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 : 100 °C
Method: Pensky-Martens closed cup

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

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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 : No data is available on the product itself.

Relative vapour density : No data is available on the product itself.

Relative density : 1.55 (25 °C)

Density : 1.55 g/cm³ (25 °C)

Solubility(ies)

 Water solubility : No data is available on the product itself.

 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 : No data is available on the product itself.

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.

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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
Halogenated compounds
aluminium oxide

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

2-Propenoic acid, reaction products with dipentaerythritol:

Acute oral toxicity : LD50 (Rat, female): > 2,000 mg/kg
Method: OECD Test Guideline 423
Assessment: The substance or mixture has no acute oral toxicity

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

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

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

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

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

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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.

2-Propenoic acid, reaction products with dipentaerythritol:

Species: Rabbit

Method: OECD Test Guideline 404

Result: No skin irritation

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

Species: Rabbit

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.

2-Propenoic acid, reaction products with dipentaerythritol:

Species: Rabbit

Method: OECD Test Guideline 405

Result: Eye irritation

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

Species: Rabbit

Method: OECD Test Guideline 405

Result: No eye irritation

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

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Result: Causes sensitisation.

2-Propenoic acid, reaction products with dipentaerythritol:

Test Type: Local lymph node assay (LLNA)

Exposure routes: Skin

Species: Mouse

Method: OECD Test Guideline 429

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

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

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

2-Propenoic acid, reaction products with dipentaerythritol:

Genotoxicity in vitro : Test Type: Ames test
Test system: Salmonella tryphimurium and E. coli
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative

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

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

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Method: OECD Test Guideline 476

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

2-Propenoic acid, reaction products with dipentaerythritol:

Genotoxicity in vivo

: Test Type: Micronucleus test

Test species: Mouse (male and female)

Method: OECD Test Guideline 474

Result: negative

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

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

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

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

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

2-Propenoic acid, reaction products with dipentaerythritol:
Species: Rat, male and female
Application Route: inhalation (vapour)
Dose: 0, 12.8, 32 or 80 ppm
12.8 ppm
Method: OECD Test Guideline 451

Carcinogenicity - Assessment : No data available

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.

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

Species: Rat, male and female
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:

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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

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

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

Reproductive toxicity - Assessment : No data available

STOT - single exposure

No data available

STOT - repeated exposure

No data available

Repeated dose toxicity

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

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

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

Species: Rat, male and female
NOAEL: 250 mg/kg
Application Route: Ingestion
Exposure time: 13 Weeks Number of exposures: 7 d
Method: Subchronic toxicity

Repeated dose toxicity - Assessment : No data available

Aspiration toxicity

No data available

Experience with human exposure

General Information: No data available

Inhalation: No data available

Skin contact: No data available

Eye contact: No data available

Ingestion: No data available

Toxicology, Metabolism, Distribution

No data available

Neurological effects

No data available

Further information

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/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): > 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

2-Propenoic acid, reaction products with dipentaerythritol:

Toxicity to fish : LL50 (Cyprinus carpio (Carp)): 13 mg/l
Exposure time: 96 h
Test Type: static test
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 18 mg/l
Exposure time: 48 h
Test Type: static test
Method: OECD Test Guideline 202

Toxicity to algae/aquatic plants : EL50 (Pseudokirchneriella subcapitata (green algae)): > 100 mg/l
Exposure time: 72 h
Test Type: static test
Method: OECD Test Guideline 201
GLP: yes

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

- 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): > 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.

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

2-Propenoic acid, reaction products with dipentaerythritol:

Biodegradability : Test Type: aerobic
Inoculum: activated sludge
Concentration: 18 mg/l
Result: Not biodegradable
Biodegradation: 0 %
Exposure time: 28 d
Method: OECD Test Guideline 301B

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

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.

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

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

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

12.4 Mobility in soil

Components:

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

Distribution among environmental compartments : Koc: 445

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

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

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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.
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, BISPHENOL F EPOXY RESIN)
14.3 Transport hazard class(es) : 9
14.4 Packing group : III
Labels : Class 9 - Miscellaneous dangerous substances and articles
Packing instruction (cargo aircraft) : 964
Packing instruction (passenger aircraft) : 964
IATA (Passenger)
Environmentally hazardous : yes

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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, BISPHENOL F EPOXY RESIN)
14.3 Transport hazard class(es) : 9
14.4 Packing group : III
Labels : 9
EmS Code : F-A, S-F
14.5 Environmental hazards
Marine pollutant : yes

ADR

14.1 UN number : UN 3082
14.2 UN proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (BISPHENOL A EPOXY RESIN, BISPHENOL F EPOXY 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
14.2 UN proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (BISPHENOL A EPOXY RESIN, BISPHENOL F EPOXY 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 - List of substances subject to authorisation (Annex XIV) : Not applicable

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

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).

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

E2 ENVIRONMENTAL HAZARDS

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 : Not in compliance with the inventory

KECI : Not 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 : 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), NZIOIC (New Zealand), PICCS (Philippines), TCSI (Taiwan), TSCA (United States of America (USA))

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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.
H412	: Harmful to aquatic life with long lasting effects.

Full text of other abbreviations

Aquatic Chronic	: Long-term (chronic) aquatic hazard
Eye Irrit.	: Eye irritation
Skin Irrit.	: Skin irritation
Skin Sens.	: Skin sensitisation
2004/37/EC	: Europe. Directive 2004/37/EC on the protection of workers from the risks related to exposure to carcinogens or mutagens at work
GB EH40	: UK. EH40 WEL - Workplace Exposure Limits
2004/37/EC / TWA	: Long term exposure limit
GB EH40 / TWA	: Long-term exposure limit (8-hour TWA reference period)

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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IN ALL CASES, IT IS THE RESPONSIBILITY OF THE USER TO DETERMINE THE APPLICABILITY OF SUCH INFORMATION AND RECOMMENDATIONS AND THE SUITABILITY OF ANY PRODUCT FOR ITS OWN PARTICULAR PURPOSE.

THE PRODUCT MAY PRESENT HAZARDS AND SHOULD BE USED WITH CAUTION. WHILE CERTAIN HAZARDS ARE DESCRIBED IN THIS PUBLICATION, NO GUARANTEE IS MADE THAT THESE ARE THE ONLY HAZARDS THAT EXIST.

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

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

1.1 Product identifier

Trade name : ARALDITE® METAL HARDENER

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

Use of the Substance/Mixture : Hardener

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)

Serious eye damage, Category 1 H318: Causes serious eye damage.

Skin sensitisation, Category 1 H317: May cause an allergic skin reaction.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms :



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Signal word : Danger

Hazard statements : H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.

Precautionary statements : **Prevention:**
P261 Avoid breathing mist or vapours.
P280 Wear protective gloves/ eye protection/ face protection.

Response:
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.
P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.
P362 + P364 Take off contaminated clothing and wash it before reuse.

Disposal:
P501 Dispose of contents/container to an approved facility in accordance with local, regional, national and international regulations.

Hazardous components which must be listed on the label:

2,4,6-Tris(dimethylaminomethyl)phenol

Amines, polyethylenepoly-, triethylenetetramine fraction

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)
Benzyl alcohol	100-51-6 202-859-9 01-2119492630-38	Acute Tox. 4; H302 Acute Tox. 4; H332 Eye Irrit. 2; H319	>= 10 - < 20
2,4,6-Tris(dimethylaminomethyl)phenol	90-72-2 202-013-9 01-2119560597-27	Acute Tox. 4; H302 Skin Corr. 1C; H314 Eye Dam. 1; H318	>= 5 - < 10
Amines, polyethylenepoly-, triethylenetetramine fraction	90640-67-8 292-588-2 01-2119487919-13	Acute Tox. 4; H302 Acute Tox. 4; H312 Skin Corr. 1B; H314	>= 3 - < 5

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		Eye Dam. 1; H318 Skin Sens. 1; H317 Aquatic Chronic 3; H412	
--	--	--	--

For explanation of abbreviations see section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

- General advice : Move out of dangerous area.
Consult a physician.
Show this 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 : 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.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media : Use extinguishing measures that are appropriate to local

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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
Nitrogen oxides (NOx)

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/dust.

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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. 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

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
Limestone	1317-65-3	TWA (inhalable dust)	10 mg/m ³	GB EH40
Further information	For the purposes of these limits, respirable dust and inhalable dust are those fractions of airborne dust which will be collected when sampling is undertaken in accordance with the methods described in MDHS14/4 General methods for sampling and gravimetric analysis or respirable, thoracic and inhalable aerosols, The COSHH definition of a substance hazardous to health includes			

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	<p>dust of any kind when present at a concentration in air equal to or greater than 10 mg.m⁻³ 8-hour TWA of inhalable dust or 4 mg.m⁻³ 8-hour TWA of respirable dust. This means that any dust will be subject to COSHH if people are exposed to dust above these levels. Some dusts have been assigned specific WELs and exposure to these must comply with the appropriate limits., Most industrial dusts contain particles of a wide range of sizes. The behaviour, deposition and fate of any particular particle after entry into the human respiratory system, and the body response that it elicits, depend on the nature and size of the particle. HSE distinguishes two size fractions for limit-setting purposes termed 'inhalable' and 'respirable'. Inhalable dust approximates to the fraction of airborne material that enters the nose and mouth during breathing and is therefore available for deposition in the respiratory tract. Respirable dust approximates to the fraction that penetrates to the gas exchange region of the lung. Fuller definitions and explanatory material are given in MDHS14/4., Where dusts contain components that have their own assigned WEL, all the relevant limits should be complied with., Where no specific short-term exposure limit is listed, a figure three times the long-term exposure limit should be used.</p>			
	<table border="1"><tr><td>TWA (Respirable dust)</td><td>4 mg/m³</td><td>GB EH40</td></tr></table>	TWA (Respirable dust)	4 mg/m ³	GB EH40
TWA (Respirable dust)	4 mg/m ³	GB EH40		
Further information	<p>For the purposes of these limits, respirable dust and inhalable dust are those fractions of airborne dust which will be collected when sampling is undertaken in accordance with the methods described in MDHS14/4 General methods for sampling and gravimetric analysis or respirable, thoracic and inhalable aerosols, The COSHH definition of a substance hazardous to health includes dust of any kind when present at a concentration in air equal to or greater than 10 mg.m⁻³ 8-hour TWA of inhalable dust or 4 mg.m⁻³ 8-hour TWA of respirable dust. This means that any dust will be subject to COSHH if people are exposed to dust above these levels. Some dusts have been assigned specific WELs and exposure to these must comply with the appropriate limits., Most industrial dusts contain particles of a wide range of sizes. The behaviour, deposition and fate of any particular particle after entry into the human respiratory system, and the body response that it elicits, depend on the nature and size of the particle. HSE distinguishes two size fractions for limit-setting purposes termed 'inhalable' and 'respirable'. Inhalable dust approximates to the fraction of airborne material that enters the nose and mouth during breathing and is therefore available for deposition in the respiratory tract. Respirable dust approximates to the fraction that penetrates to the gas exchange region of the lung. Fuller definitions and explanatory material are given in MDHS14/4., Where dusts contain components that have their own assigned WEL, all the relevant limits should be complied with., Where no specific short-term exposure limit is listed, a figure three times the long-term exposure limit should be used.</p>			

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

Substance name	End Use	Exposure routes	Potential health effects	Value
Benzyl alcohol	Workers	Dermal	Acute systemic effects	47 mg/kg
	Workers	Inhalation	Acute systemic effects	450 mg/m ³
	Workers	Dermal	Long-term systemic effects	9.5 mg/kg
	Workers	Inhalation	Long-term systemic	90 mg/m ³

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			effects	
	Consumers	Dermal	Acute systemic effects	28.5 mg/kg
	Consumers	Inhalation	Acute systemic effects	40.55 mg/m3
	Consumers	Oral	Acute systemic effects	25 mg/kg
	Consumers	Dermal	Long-term systemic effects	5.7 mg/kg
	Consumers	Inhalation	Long-term systemic effects	8.11 mg/m3
	Consumers	Oral	Long-term systemic effects	5 mg/kg
Amines, polyethylenepoly-, triethylenetetramine fraction	Workers	Inhalation	Long-term systemic effects	1 mg/m3
	Workers	Inhalation	Acute systemic effects	5380 mg/m3
	Workers	Dermal	Long-term systemic effects	0.57 mg/kg bw/day
	Workers	Dermal	Long-term local effects	0.028 mg/cm2
	Consumers	Inhalation	Long-term systemic effects	0.29 mg/m3
	Consumers	Inhalation	Acute systemic effects	1600 mg/m3
	Consumers	Dermal	Long-term systemic effects	0.25 mg/kg bw/day
	Consumers	Dermal	Acute systemic effects	8 mg/kg bw/day
	Consumers	Dermal	Long-term local effects	0.43 mg/cm2
	Consumers	Dermal	Acute local effects	1 mg/cm2
	Consumers	Oral	Long-term systemic effects	0.41 mg/kg bw/day
	Consumers	Oral	Acute systemic effects	20 mg/kg bw/day

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

Substance name	Environmental Compartment	Value
2,4,6-Tris(dimethylaminomethyl)phenol	Fresh water	0.084 mg/l
Remarks:	Assessment Factors	
	Marine water	0.0084 mg/l
	Assessment Factors	
	Sewage treatment plant	0.2 mg/l
	Assessment Factors	

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Benzyl alcohol	Fresh water	1 mg/l
Assessment Factors		
	Marine water	0.1 mg/l
Assessment Factors		
	Freshwater - intermittent	2.3 mg/l
Assessment Factors		
	Sewage treatment plant	39 mg/l
Assessment Factors		
	Fresh water sediment	5.27 mg/kg
Assessment Factors		
	Marine sediment	0.527 mg/kg
Assessment Factors		
	Soil	0.456 mg/kg
Assessment Factors		
	Secondary Poisoning	
Assessment Factors		
Amines, polyethylenepoly-, triethylenetetramine fraction	Fresh water	190 µg/l
	Marine water	38 µg/l
	Freshwater - intermittent	200 µg/l
	Sewage treatment plant	4.25 mg/l
	Fresh water sediment	95.5 mg/kg dry weight (d.w.)
	Marine sediment	19.2 mg/kg dry weight (d.w.)
	Soil	19.1 mg/kg dry weight (d.w.)
	Secondary Poisoning	0.18 mg/kg dry weight (d.w.)

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

Material : Neoprene gloves

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

Filter type : Combined inorganic and acidic gas/vapour, ammonia/amines and organic vapour type (ABEK)

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance : paste

Colour : beige

Odour : amine-like

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 : 200 °C
Method: 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.

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Vapour pressure : No data is available on the product itself.

Relative vapour density : No data is available on the product itself.

Relative density : 1.55 (25 °C)

Density : 1.55 g/cm³ (25 °C)

Solubility(ies)

 Water solubility : No data is available on the product itself.

 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 : No data is available on the product itself.

Viscosity

 Viscosity, dynamic : 200,000 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.

10.5 Incompatible materials

Materials to avoid : None known.

10.6 Hazardous decomposition products

Hazardous decomposition products : carbon dioxide
carbon monoxide
Nitrogen oxides

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SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Acute oral toxicity - Product : Acute toxicity estimate : > 2,000 mg/kg
Method: Calculation method

Acute inhalation toxicity - Product : Acute toxicity estimate : > 20 mg/l
Exposure time: 4 h
Test atmosphere: vapour
Method: Calculation method

Acute dermal toxicity - Product : Acute toxicity estimate : > 2,000 mg/kg
Method: Calculation method

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

Skin corrosion/irritation

Product:

Assessment: Mild skin irritant

Serious eye damage/eye irritation

Components:

Benzyl alcohol:
Species: Rabbit
Assessment: Irritant
Method: OECD Test Guideline 405
Result: Irritating to eyes.

2,4,6-Tris(dimethylaminomethyl)phenol:
Species: Rabbit
Assessment: Corrosive
Method: Other guidelines
Result: Corrosive

Amines, polyethylenepoly-, triethylenetetramine fraction:
Species: Rabbit
Assessment: Corrosive
Method: OECD Test Guideline 404
Result: Corrosive

Respiratory or skin sensitisation

Components:

Benzyl alcohol:
Exposure routes: Skin

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Species: Guinea pig
Result: Does not cause skin sensitisation.

2,4,6-Tris(dimethylaminomethyl)phenol:
Exposure routes: Skin
Species: Guinea pig
Method: OECD Test Guideline 406
Result: Does not cause skin sensitisation.

Amines, polyethylenepoly-, triethylenetetramine fraction:
Exposure routes: Skin
Species: Guinea pig
Method: OECD Test Guideline 406
Result: May cause sensitisation by skin contact.

Assessment: No data available

Germ cell mutagenicity

Components:

2,4,6-Tris(dimethylaminomethyl)phenol:

Genotoxicity in vitro : Concentration: 5000 ug/plate
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative

: Concentration: 2500 ug/plate
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 473
Result: negative

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

Amines, polyethylenepoly-, triethylenetetramine fraction:

Genotoxicity in vitro : Concentration: 0 - 200 µg/L
Metabolic activation: negative
Method: OECD Test Guideline 482
Result: negative

Components:

Benzyl alcohol:

Genotoxicity in vivo : Application Route: Intraperitoneal injection
Dose: 200 mg/kg
Method: OECD Test Guideline 474
Result: negative

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Amines, polyethylenepoly-, triethylenetetramine fraction:

Genotoxicity in vivo : Application Route: Intraperitoneal injection
Dose: 0 - 600 mg/kg
Method: OECD Test Guideline 474
Result: negative

Carcinogenicity

Components:

Benzyl alcohol:
Species: Rat, male and female
Application Route: Oral
Exposure time: 103 weeks
Dose: 400 mg/kg
Frequency of Treatment: 5 daily
Method: OECD Test Guideline 453
Result: negative

Amines, polyethylenepoly-, triethylenetetramine fraction:

Species: Mouse, male
Application Route: Dermal
Dose: 42 mg/kg
Frequency of Treatment: 3 daily
Method: OECD Test Guideline 451
Result: negative

Carcinogenicity - Assessment : No data available

Reproductive toxicity

Components:

2,4,6-Tris(dimethylaminomethyl)phenol:

Effects on fertility : Species: Rat, male and female
Application Route: Oral
Method: OECD Test Guideline 422
Remarks: No significant adverse effects were reported

Components:

Benzyl alcohol:
Effects on foetal development : Species: Mouse, female
Application Route: Oral
General Toxicity Maternal: Lowest observed adverse effect level: 550 mg/kg body weight
Result: No teratogenic effects

Amines, polyethylenepoly-, triethylenetetramine fraction:

Species: Rat
Application Route: Oral
General Toxicity Maternal: No observed adverse effect level:
> 750 mg/kg body weight
Method: OECD Test Guideline 414
Result: No teratogenic effects

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

Components:

Amines, polyethylenepoly-, triethylenetetramine fraction:

Reproductive toxicity - Assessment : The reprotoxic effects of Triethylenetetramine (TETA) are under further evaluation as part of the EU REACH program due in part to the aminoethyl ethanolamine (AEEA) content.

STOT - single exposure

No data available

STOT - repeated exposure

No data available

Repeated dose toxicity

Components:

Benzyl alcohol:

Species: Rat, male and female

NOEC: 400 mg/kg, 1072

Application Route: Inhalation

Test atmosphere: dust/mist

Exposure time: 4 Weeks Number of exposures: 6 h

Method: OECD Test Guideline 412

2,4,6-Tris(dimethylaminomethyl)phenol:

Species: Rat, male and female

NOEL: 15 mg/kg

Application Route: Ingestion

Exposure time: 1,032 h Number of exposures: 7 d

Method: Subacute toxicity

Amines, polyethylenepoly-, triethylenetetramine fraction:

Species: Rat, male and female

NOAEL: 50 mg/kg

Application Route: Ingestion

Exposure time: 26 Weeks Number of exposures: 7 d

Method: Subchronic toxicity

Repeated dose toxicity - Assessment : No data available

Aspiration toxicity

No data available

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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

SECTION 12: Ecological information

12.1 Toxicity

Components:

Benzyl alcohol:

- Toxicity to fish : LC50 : 460 mg/l
Exposure time: 96 h
Test Type: static test
Test substance: Fresh water
Method: OPPTS 850.1075
- Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 230 mg/l
Exposure time: 48 h
Test substance: Fresh water
Method: OECD Test Guideline 202
- Toxicity to algae/aquatic plants : EgC50 (Selenastrum capricornutum (green algae)): 770 mg/l
Exposure time: 72 h
Test Type: static test
Test substance: Fresh water
Method: OECD Test Guideline 201

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Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 51 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

2,4,6-Tris(dimethylaminomethyl)phenol:

Toxicity to fish : LC50 (Cyprinus carpio (Carp)): 175 mg/l
Exposure time: 96 h
Test Type: static test
Test substance: Fresh water

Toxicity to daphnia and other aquatic invertebrates : LC50 (Palaeomonetes vulgaris (Grass shrimp)): 718 mg/l
End point: mortality
Exposure time: 96 h
Test Type: static test
Analytical monitoring: no
Test substance: Marine water

Toxicity to algae/aquatic plants : ErC50 (Desmodesmus subspicatus (green algae)): 84 mg/l
Exposure time: 72 h
Test Type: static test
Analytical monitoring: yes
Test substance: Fresh water
Method: OECD Test Guideline 201

NOEC (Desmodesmus subspicatus (green algae)): 6.25 mg/l
Exposure time: 72 h
Test Type: static test
Analytical monitoring: yes
Test substance: Fresh water
Method: OECD Test Guideline 201

Amines, polyethylenepoly-, triethylenetetramine fraction:

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 330 mg/l
Exposure time: 96 h
Test Type: static test
Test substance: Fresh water
Method: EPA OTS 797.1400

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 31.1 mg/l
Exposure time: 48 h
Test Type: static test
Test substance: Fresh water
Method: Directive 67/548/EEC, Annex V, C.2.

Toxicity to algae/aquatic plants : ErC50 (Selenastrum capricornutum (green algae)): 20 mg/l
Exposure time: 72 h
Test Type: semi-static test
Test substance: Fresh water
Method: OECD Test Guideline 201

Toxicity to microorganisms : EC50 (activated sludge): 800 mg/l

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Exposure time: 0.5 h
Test Type: static test
Test substance: Fresh water

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : EC10: 1.9 mg/l
Exposure time: 21 d
Species: Daphnia magna (Water flea)
Test Type: semi-static test
Test substance: Fresh water
Method: OECD Test Guideline 202

Ecotoxicology Assessment
Acute aquatic toxicity : This product has no known ecotoxicological effects.

12.2 Persistence and degradability

Components:

Benzyl alcohol:

Biodegradability : Inoculum: Sewage (STP effluent)
Concentration: 20 mg/l
Result: Readily biodegradable.
Biodegradation: 95 - 97 %
Exposure time: 21 d
Method: OECD Test Guideline 301A

2,4,6-Tris(dimethylaminomethyl)phenol:

Biodegradability : Test Type: aerobic
Inoculum: activated sludge, non-adapted
Concentration: 2 mg/l
Result: Not biodegradable
Biodegradation: 4 %
Exposure time: 28 d
Method: OECD Test Guideline 301D

Amines, polyethylenepoly-, triethylenetetramine fraction:

Biodegradability : Inoculum: activated sludge
Result: Not readily biodegradable.
Biodegradation: 0 %
Exposure time: 162 d
Method: OECD Test Guideline 301D

Inoculum: activated sludge
Result: Not readily biodegradable.
Biodegradation: 20 %
Exposure time: 84 d
Method: OECD Test Guideline 302 A

Chemical Oxygen Demand (COD) : 1,940 mg/g

12.3 Bioaccumulative potential

Components:

Benzyl alcohol:

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Bioaccumulation : Bioconcentration factor (BCF): 1

Partition coefficient: n-octanol/water : log Pow: 1.1 (20 °C)

2,4,6-Tris(dimethylaminomethyl)phenol:

Partition coefficient: n-octanol/water : Pow: ≥ 0.219 (21.5 °C)
log Pow: -0.66 (21.5 °C)
Method: OPPTS 830.7550

Amines, polyethylenepoly-, triethylenetetramine fraction:

Partition coefficient: n-octanol/water : log Pow: -2.65 (20 °C)
Method: OECD Test Guideline 117

12.4 Mobility in soil

Components:

Benzyl alcohol:

Distribution among environmental compartments : Koc: 5 - 15

Amines, polyethylenepoly-, triethylenetetramine fraction:

Distribution among environmental compartments : Koc: 1584.9 - 5012
Method: OECD Test Guideline 106

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

No data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product : Do not dispose of waste into sewer.
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

Not regulated as dangerous goods

IMDG

Not regulated as dangerous goods

ADR

Not regulated as dangerous goods

RID

Not regulated as dangerous goods

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

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

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).

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.
Not applicable

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 : This product contains one or several components listed in the Canadian NDSL.

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

NZIoC : Not in compliance with the inventory

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ENCS : Not in compliance with the inventory

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

PICCS : Not 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

H302 : Harmful if swallowed.
H312 : Harmful in contact with skin.
H314 : Causes severe skin burns and eye damage.
H317 : May cause an allergic skin reaction.
H318 : Causes serious eye damage.
H319 : Causes serious eye irritation.
H332 : Harmful if inhaled.
H412 : Harmful to aquatic life with long lasting effects.

Full text of other abbreviations

Acute Tox. : Acute toxicity
Aquatic Chronic : Long-term (chronic) aquatic hazard
Eye Dam. : Serious eye damage
Eye Irrit. : Eye irritation
Skin Corr. : Skin corrosion
Skin Sens. : Skin sensitisation
GB EH40 : UK. EH40 WEL - Workplace Exposure Limits
GB EH40 / TWA : Long-term exposure limit (8-hour TWA reference period)

Further information

Classification of the mixture:

Eye Dam. 1 H318
Skin Sens. 1 H317

Classification procedure:

Calculation method
Calculation method

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