ARALDITE® METAL HARDENER

Version	Revision Date:	SDS Number:	Date of last issue: 08.10.2018
1.2	14.08.2019	400001021214	Date of first issue: 05.10.2018

Print Date 13.05.2022

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 :

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

		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

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.

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/m3	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.			
		TWA (Respirable dust)	4 mg/m3	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.			

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/m3
	Workers	Dermal	Long-term systemic effects	9.5 mg/kg
	Workers	Inhalation	Long-term systemic	90 mg/m3

			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	

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)

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.

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

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

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

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

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 WeeksNumber 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 hNumber 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 WeeksNumber 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

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

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

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**:**

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.

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

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:		**Classification procedure:**
Eye Dam. 1	H318	Calculation method
Skin Sens. 1	H317	Calculation method

While the information and recommendations in this publication are to the best of our knowledge, information and belief accurate at the date of publication, NOTHING HEREIN IS TO BE CONSTRUED AS A WARRANTY, EXPRESS OR OTHERWISE.

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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