

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

HUNTSMAN

Enriching lives through innovation

ARALDITE® 2012 RESIN

Version 1.2 Revision Date: 21.01.2020 SDS Number: 400001008017 Date of last issue: 18.11.2016
Date of first issue: 03.08.2015

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

1.1 Product identifier

Trade name : ARALDITE® 2012 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
1,4-Bis(2,3-epoxypropoxy)butane

Additional Labelling:

EUH205 Contains epoxy constituents. May produce an allergic reaction.

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	>= 70 - < 90
1,4-Bis(2,3-epoxypropoxy)butane	2425-79-8 219-371-7	Acute Tox. 4; H302 Acute Tox. 4; H332	>= 3 - < 10

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	01-2119494060-45	Acute Tox. 4; H312 Skin Irrit. 2; H315 Eye Dam. 1; H318 Eye Irrit. 2; H319 Skin Sens. 1; H317 Aquatic Chronic 3; H412	
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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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application area.
Dispose of rinse water in accordance with local and national regulations.
Persons susceptible to skin sensitisation problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used.

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

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

7.2 Conditions for safe storage, including any incompatibilities

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

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

Further information on storage stability : Stable under normal conditions.

Recommended storage temperature : 2 - 40 °C

7.3 Specific end use(s)

Specific use(s) : No data available

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Contains no substances with occupational exposure limit values.

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

Substance name	End Use	Exposure routes	Potential health effects	Value
2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane	Workers	Inhalation	Long-term systemic effects	4.93 mg/m3
	Workers	Dermal	Long-term systemic effects	0.75 mg/kg bw/day
	Consumers	Inhalation	Long-term systemic effects	0.87 mg/m3

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	Consumers	Dermal	Long-term systemic effects	0.0893 mg/kg bw/day
	Consumers	Oral	Long-term systemic effects	0.5 mg/kg bw/day

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

Substance name	Environmental Compartment	Value
2,2'-[[1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane	Fresh water	0.006 mg/l
Remarks:	Assessment Factors	
	Marine water	0.001 mg/l
	Assessment Factors	
	Fresh water sediment	0.341 mg/kg dry weight (d.w.)
	Equilibrium method	
	Marine sediment	0.034 mg/kg dry weight (d.w.)
	Equilibrium method	
	Soil	0.065 mg/kg dry weight (d.w.)
	Equilibrium method	
	Sewage treatment plant	10 mg/l
	Assessment Factors	
	Secondary Poisoning	11 mg/kg

8.2 Exposure controls

Personal protective equipment

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

Hand protection

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

Material : Solvent-resistant gloves (butyl-rubber)

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.

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- 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 : light yellow
- Odour : slight
- Odour Threshold : No data is available on the product itself.
- pH : 6 (20 °C)
Concentration: 500 g/l
- Freezing point : No data is available on the product itself.
- Melting point : No data is available on the product itself.
- Boiling point : > 200 °C
- Flash point : 204 °C
Method: Cleveland open cup
- Evaporation rate : No data is available on the product itself.
- Flammability (solid, gas) : No data is available on the product itself.
- Burning rate : No data is available on the product itself.
- Upper explosion limit / Upper flammability limit : No data is available on the product itself.
- Lower explosion limit / Lower flammability limit : No data is available on the product itself.
- Vapour pressure : < 0.002 hPa (20 °C)
- Relative vapour density : No data is available on the product itself.
- Relative density : No data is available on the product itself.
- Density : 1.17 g/cm³ (25 °C)

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Solubility(ies)
Water solubility : practically insoluble (20 °C)

Solubility in other solvents : No data is available on the product itself.

Partition coefficient: n-octanol/water : No data is available on the product itself.

Auto-ignition temperature : No data is available on the product itself.

Decomposition temperature : > 200 °C

Viscosity
Viscosity, dynamic : 25,000 - 45,000 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 : Strong acids and strong bases
Strong oxidizing agents

10.6 Hazardous decomposition products

Hazardous decomposition products : carbon dioxide
carbon monoxide
Halogenated compounds

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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 : > 5 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
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

Components:

2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane:
Species: Rabbit
Exposure time: 4 h
Assessment: Irritating to skin.
Method: OECD Test Guideline 404
Result: Irritating to skin.

1,4-Bis(2,3-epoxypropoxy)butane:
Species: Rabbit
Method: OECD Test Guideline 404
Result: Skin irritation

Serious eye damage/eye irritation

Product:

Assessment: Mild eye irritant

Respiratory or skin sensitisation

Components:

2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane:
Test Type: Local lymph node assay (LLNA)
Exposure routes: Skin
Species: Mouse
Assessment: May cause sensitisation by skin contact.
Method: OECD Test Guideline 429
Result: May cause sensitisation by skin contact.

1,4-Bis(2,3-epoxypropoxy)butane:
Exposure routes: Skin

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Cell type: Somatic
Application Route: Oral
Dose: 50,250,500,1000 mg/kg bw/day
Method: OECD Test Guideline 488
Result: negative

1,4-Bis(2,3-epoxypropoxy)butane:

Genotoxicity in vivo : Test Type: In vivo micronucleus test
Test species: Mouse
Cell type: Somatic
Application Route: Oral
Exposure time: 4 d
Dose: 187.5 - 750 mg/kg
Method: OECD Test Guideline 474
Result: negative

Test Type: unscheduled DNA synthesis assay
Test species: Rat
Cell type: Liver cells
Application Route: Oral
Method: OECD Test Guideline 486
Result: negative

Components:

1,4-Bis(2,3-epoxypropoxy)butane:

Germ cell mutagenicity- Assessment : Weight of evidence does not support classification as a germ cell mutagen.

Carcinogenicity

Components:

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

Species: Rat, male
Application Route: Oral
Exposure time: 24 month(s)
Dose: 0, 2, 15, or 100 mg/kg bw/day
Frequency of Treatment: 7 days/week
No observed adverse effect level: 15 mg/kg bw/day
Method: OECD Test Guideline 453
Result: negative
Target Organs: Digestive organs

Species: Mouse, male
Application Route: Dermal
Exposure time: 24 month(s)
Dose: 0, 0.1, 10, 100 mg/kg bw/day
Frequency of Treatment: 3 days/week
No-observed-effect level: 0.1 mg/kg body weight
Method: OECD Test Guideline 453
Result: negative

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Target Organs: Digestive organs

Species: Rat, female
Application Route: Dermal
Exposure time: 24 month(s)
Dose: 0.1, 100, 1000 mg/kg bw/day
Frequency of Treatment: 5 days/week
No-observed-effect level: 100 mg/kg body weight
Method: OECD Test Guideline 453
Result: negative

Species: Rat, female
Application Route: Oral
Exposure time: 24 month(s)
Dose: 0, 2, 15, or 100 mg/kg bw/day
Frequency of Treatment: 7 days/week
No observed adverse effect level: 100 mg/kg bw/day
Method: OECD Test Guideline 453
Result: negative
Target Organs: Digestive organs

Species: Rat, females
Application Route: Oral
Exposure time: 24 month(s)
Dose: 0, 2, 15, or 100 mg/kg bw/day
Frequency of Treatment: 7 days/week
No-observed-effect level: 2 mg/kg bw/day
Method: OECD Test Guideline 453
Result: negative
Target Organs: Digestive organs

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: 0, 50, 180, 540 or 750 milligram per kilogram
Duration of Single Treatment: 238 d
Frequency of Treatment: 1 daily
General Toxicity - Parent: No-observed-effect level: 540 mg/kg body weight
General Toxicity F1: No-observed-effect level: 750 mg/kg body weight
Symptoms: No adverse effects
Method: OECD Test Guideline 416
Result: No effects on fertility and early embryonic development were detected.

Components:

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

Effects on foetal development

: Species: Rabbit, female
Application Route: Dermal
Dose: 0, 30, 100 or 300 milligram per kilogram
Duration of Single Treatment: 28 d
Frequency of Treatment: 1 daily
General Toxicity Maternal: No observed adverse effect level: 30 mg/kg body weight
Developmental Toxicity: No observed adverse effect level: 300 mg/kg body weight
Method: Other guidelines
Result: No teratogenic effects

Test Type: Pre-natal
Species: Rabbit, female
Application Route: Oral
Dose: 0, 20, 60 or 180 milligram per kilogram
Duration of Single Treatment: 13 d
Frequency of Treatment: 1 daily
General Toxicity Maternal: No observed adverse effect level: 60 mg/kg body weight
Developmental Toxicity: No observed adverse effect level: 180 mg/kg body weight
Method: OECD Test Guideline 414
Result: No teratogenic effects

Test Type: Pre-natal
Species: Rat, female
Application Route: Oral
Dose: 0, 60, 180 and 540 milligram per kilogram
Duration of Single Treatment: 10 d
Frequency of Treatment: 1 daily
General Toxicity Maternal: No observed adverse effect level: 180 mg/kg body weight
Developmental Toxicity: No observed adverse effect level: > 540 mg/kg body weight
Method: OECD Test Guideline 414
Result: No teratogenic effects

Reproductive toxicity - Assessment : No data available

STOT - single exposure

No data available

STOT - repeated exposure

No data available

Repeated dose toxicity

Components:

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

Species: Rat, male and female

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NOAEL: 50 mg/kg
Application Route: oral (gavage)
Exposure time: 14 Weeks Number of exposures: 7 d
Dose: 0, 50, 250, 1000 mg/kg/day
Method: OECD Test Guideline 408

Species: Rat, male and female
NOAEL: \geq 10 mg/kg
Application Route: Skin contact
Exposure time: 13 Weeks Number of exposures: 5 d
Dose: 0, 10, 100, 1000 mg/kg/day
Method: OECD Test Guideline 411

Species: Mouse, male
NOAEL: 100 mg/kg
Application Route: Skin contact
Exposure time: 13 Weeks Number of exposures: 3 d
Dose: 0, 1, 10, 100 mg/kg/day
Method: OECD Test Guideline 411

1,4-Bis(2,3-epoxypropoxy)butane:
Species: Rat, male and female
NOAEL: 200 mg/kg
Application Route: Ingestion
Exposure time: 28 d Number of exposures: 7 d
Method: Subacute 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

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Toxicology, Metabolism, Distribution

No data available

Neurological effects

No data available

Further information

Ingestion: No data available

SECTION 12: Ecological information

12.1 Toxicity

Components:

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

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 2 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203

Toxicity to daphnia and other : EC50 (Daphnia magna (Water flea)): 1.8 mg/l
aquatic invertebrates : Exposure time: 48 h
Test Type: static test
Test substance: Fresh water
Method: OECD Test Guideline 202

Toxicity to algae/aquatic : EC50 : 11 mg/l
plants : Exposure time: 72 h
Test Type: static test
Test substance: Fresh water
Method: EPA-660/3-75-009

NOEC : 4.2 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 : NOEC: 0.3 mg/l
aquatic invertebrates : Exposure time: 21 d
(Chronic toxicity) : Species: Daphnia magna (Water flea)
Test Type: semi-static test
Test substance: Fresh water
Method: OECD Test Guideline 211

Ecotoxicology Assessment

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

Chronic aquatic toxicity : Toxic to aquatic life with long lasting effects.

1,4-Bis(2,3-epoxypropoxy)butane:

Toxicity to fish : LC50 (Brachydanio rerio (zebrafish)): 24 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)): 75 mg/l
Exposure time: 24 h
Test Type: static test
Test substance: Fresh water
Method: OECD Test Guideline 202

Toxicity to algae/aquatic plants : EL50 : > 160 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
Method: OECD Test Guideline 209

12.2 Persistence and degradability

Components:

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

Biodegradability : Test Type: aerobic
Inoculum: activated sludge, non-adapted
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

1,4-Bis(2,3-epoxypropoxy)butane:

Biodegradability : Inoculum: activated sludge
Concentration: 20 mg/l
Result: Not readily biodegradable.
Biodegradation: 43 %
Exposure time: 28 d
Method: OECD Test Guideline 301F

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

1,4-Bis(2,3-epoxypropoxy)butane:
Partition coefficient: n-octanol/water : log Pow: -0.269 (25 °C)
pH: 6.7
Method: OECD Test Guideline 117

12.4 Mobility in soil

Components:

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

1,4-Bis(2,3-epoxypropoxy)butane:
Distribution among environmental compartments : Koc: 12.59
Method: OECD Test Guideline 121

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.

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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)
- 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
- 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)
- 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

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ADR

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

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 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:

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

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

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

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

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

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

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

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

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

Inventories

AICS (Australia), DSL (Canada), IECSC (China), ENCS (Japan), KECI (Korea), NZIOIC (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.
H315 : Causes skin irritation.
H317 : May cause an allergic skin reaction.
H318 : Causes serious eye damage.
H319 : Causes serious eye irritation.
H332 : Harmful if inhaled.
H411 : Toxic to aquatic life with long lasting effects.
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

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Eye Irrit.	: Eye irritation
Skin Irrit.	: Skin irritation
Skin Sens.	: Skin sensitisation

Further information

Classification of the mixture:

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

Classification procedure:

Calculation method
Based on product data or assessment
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® 2012 HARDENER

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)

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 3 H412: Harmful 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 : H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H412 Harmful to aquatic life with long lasting effects.

Precautionary statements : **Prevention:**
P261 Avoid breathing mist or vapours.
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.
P337 + P313 If eye irritation persists: Get medical advice/ attention.
P362 + P364 Take off contaminated clothing and wash it before reuse.

Hazardous components which must be listed on the label:
N'-(3-aminopropyl)-N,N-dimethylpropane-1,3-diamine

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)
N'-(3-aminopropyl)-N,N-dimethylpropane-1,3-diamine	10563-29-8 234-148-4 01-2119970376-29	Acute Tox. 4; H302 Skin Corr. 1A; H314 Skin Sens. 1B; H317	>= 1 - < 3
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	>= 1 - < 3

For explanation of abbreviations see section 16.

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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 on skin, rinse well with water.
- 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

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.

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.

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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.
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 : Keep container tightly closed in a dry and well-ventilated

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areas and containers 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

Contains no substances with occupational exposure limit values.

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

Substance name	End Use	Exposure routes	Potential health effects	Value
N'-(3-aminopropyl)-N,N-dimethylpropane-1,3-diamine	Workers	Inhalation	Long-term systemic effects	3.7 mg/m3
	Workers	Inhalation	Acute systemic effects	7.5 mg/m3
	Workers	Inhalation	Long-term local effects	3.7 mg/m3
	Workers	Inhalation	Acute local effects	7.5 mg/m3
	Workers	Dermal	Long-term systemic effects	0.67 mg/kg
	Consumers	Inhalation	Long-term systemic effects	0.65 mg/m3
	Consumers	Inhalation	Long-term local effects	0.65 mg/m3
	Consumers	Oral	Long-term systemic effects	0.2 mg/kg

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
	Marine water	0.008 mg/l
Remarks:	Assessment Factors	
	Sewage treatment plant	0.2 mg/l

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	Assessment Factors	
	Freshwater - intermittent	0.84 mg/l
2,4,6-Tris(dimethylaminomethyl)phenol	Fresh water	0.084 mg/l
	Marine water	0.008 mg/l
	Assessment Factors	
	Sewage treatment plant	0.2 mg/l
	Assessment Factors	
	Freshwater - intermittent	0.84 mg/l
N'-(3-aminopropyl)-N,N-dimethylpropane-1,3-diamine	Fresh water	9.2 µg/l
	Assessment Factors	
	Marine water	0.92 µg/l
	Assessment Factors	
	Freshwater - intermittent	92 µg/l
	Assessment Factors	
	Sewage treatment plant	18.1 mg/l
	Assessment Factors	
	Fresh water sediment	0.0336 mg/kg
	Equilibrium method	
	Marine sediment	0.00336 mg/kg
	Equilibrium method	
	Soil	0.00132 mg/kg
	Equilibrium method	

8.2 Exposure controls**Personal protective equipment**

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

Hand protection

Material : butyl-rubber

Material : Ethyl Vinyl Alcohol Laminate (EVAL)

Break through time : > 8 h

Material : Nitrile rubber

Material : Neoprene gloves

Break through time : 10 - 480 min

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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 : Organic vapour type (A)

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance : liquid

Colour : light yellow

Odour : unpleasant

Odour Threshold : No data is available on the product itself.

pH : No data is available on the product itself.

Freezing point : No data is available on the product itself.

Melting point : No data is available on the product itself.

Boiling point : > 200 °C

Flash point : > 100 °C
Method: Pensky-Martens closed cup, closed cup
102 °C
Method: Cleveland open cup

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

Flammability (solid, gas) : No data is available on the product itself.

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

Upper explosion limit / Upper flammability limit : No data is available on the product itself.

Lower explosion limit / Lower flammability limit : No data is available on the product itself.

Vapour pressure : < 0.01 hPa (20 °C)

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

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

Density : 1.165 g/cm³ (25 °C)

Solubility(ies)
Water solubility : practically insoluble (20 °C)

Solubility in other solvents : No data is available on the product itself.

Partition coefficient: n-octanol/water : No data is available on the product itself.

Auto-ignition temperature : No data is available on the product itself.

Decomposition temperature : > 200 °C

Viscosity
Viscosity, dynamic : 20,000 - 40,000 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

Carbon oxides

Burning produces noxious and toxic fumes.

No hazardous decomposition products are known.

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SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Acute oral toxicity - Product : LD50 (Rat, male and female): 2,631 mg/kg
Method: OECD Test Guideline 401

Acute inhalation toxicity : No data available

Acute dermal toxicity - Product : LD50 (Rat, male and female): > 4,000 mg/kg
Method: OECD Test Guideline 402

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

Skin corrosion/irritation

Product:

Species: Rabbit

Result: No skin irritation

Remarks: Moderate skin irritation

Serious eye damage/eye irritation

Product:

Species: Rabbit

Result: Mild eye irritation

Remarks: Mild eye irritation

Respiratory or skin sensitisation

Components:

N'-(3-aminopropyl)-N,N-dimethylpropane-1,3-diamine:

Exposure routes: Skin

Species: Guinea pig

Method: OECD Test Guideline 406

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

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

Exposure routes: Skin

Species: Guinea pig

Method: OECD Test Guideline 406

Result: Does not cause skin sensitisation.

Assessment: No data available

Germ cell mutagenicity

Product:

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

Genotoxicity in vivo : No data available

Germ cell mutagenicity-
Assessment : No data available

Carcinogenicity

Components:

N'-(3-aminopropyl)-N,N-dimethylpropane-1,3-diamine:

Species: Mouse, male

Application Route: Dermal

Exposure time: 20 month(s)

Frequency of Treatment: 3 daily

Result: negative

Carcinogenicity -
Assessment : No data available

Reproductive toxicity

Components:

N'-(3-aminopropyl)-N,N-dimethylpropane-1,3-diamine:

Effects on fertility : Species: Rat, male and female

Application Route: Oral

Method: OECD Test Guideline 422

Result: Animal testing did not show any effects on fertility.

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

Species: Rat, male and female

Application Route: Oral

Method: OECD Test Guideline 422

Remarks: No significant adverse effects were reported

Components:

N'-(3-aminopropyl)-N,N-dimethylpropane-1,3-diamine:

Effects on foetal development : Species: Rat, male and female

Application Route: Oral

General Toxicity Maternal: No observed adverse effect level:
15 mg/kg body weight

Developmental Toxicity: No observed adverse effect level: 15
mg/kg body weight

Embryo-foetal toxicity: No observed adverse effect level: 15
mg/kg body weight

Method: OECD Test Guideline 422

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

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Components:

N'-(3-aminopropyl)-N,N-dimethylpropane-1,3-diamine:

Reproductive toxicity - Assessment : No evidence of adverse effects on sexual function and fertility, or on development, based on animal experiments.

STOT - single exposure

No data available

STOT - repeated exposure

No data available

Repeated dose toxicity

Components:

N'-(3-aminopropyl)-N,N-dimethylpropane-1,3-diamine:

Species: Rat, male and female

NOEC: 550

Application Route: Inhalation

Test atmosphere: vapour

Exposure time: 3 Weeks Number of exposures: 7 d

Method: Subchronic toxicity

Species: Mouse, male

NOAEL: >= 56.3

Application Route: Skin contact

Exposure time: 20 h Number of exposures: 3 d

Method: Chronic toxicity

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

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

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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

Product:

Ecotoxicology Assessment

Chronic aquatic toxicity : Harmful to aquatic life with long lasting effects.

Components:

N'-(3-aminopropyl)-N,N-dimethylpropane-1,3-diamine:

Toxicity to fish : LC50 (Brachydanio rerio (zebrafish)): > 100 mg/l
Exposure time: 96 h
Test Type: static test
Test substance: Fresh water
Method: OECD Test Guideline 203

Toxicity to daphnia and other : EC50 (Daphnia magna (Water flea)): 9.2 mg/l
aquatic invertebrates : Exposure time: 48 h
Test Type: static test
Test substance: Fresh water
Method: OECD Test Guideline 202

Toxicity to algae/aquatic : ErC50 (Selenastrum capricornutum (green algae)): 21 mg/l
plants : Exposure time: 72 h
Test Type: static test
Test substance: Fresh water
Method: OECD Test Guideline 201

Toxicity to microorganisms : EC50 (Pseudomonas putida): 181 mg/l
Exposure time: 16 h
Test Type: static test
Test substance: Fresh water

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Method: DIN 38 412 Part 8

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

12.2 Persistence and degradability

Components:

N'-(3-aminopropyl)-N,N-dimethylpropane-1,3-diamine:

Biodegradability : Result: Readily biodegradable.
Biodegradation: 100 %
Exposure time: 28 d
Method: ISO

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

12.3 Bioaccumulative potential

Components:

N'-(3-aminopropyl)-N,N-dimethylpropane-1,3-diamine:

Partition coefficient: n-octanol/water : log Pow: 0.5

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according to Regulation (EC) No. 1907/2006

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log Pow: -0.56 (25 °C)
pH: 11.6
Method: OECD Test Guideline 107

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

12.4 Mobility in soil

No data available

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.
Harmful 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

Not regulated as dangerous goods

IMDG

Not regulated as dangerous goods

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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 that are not on the Canadian DSL nor NDSL.

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

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

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

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

PICCS : Not in compliance with the inventory

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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

SECTION 16: Other information

Full text of H-Statements

H302 : Harmful if swallowed.
H314 : Causes severe skin burns and eye damage.
H317 : May cause an allergic skin reaction.
H318 : Causes serious eye damage.

Full text of other abbreviations

Acute Tox. : Acute toxicity
Eye Dam. : Serious eye damage
Skin Corr. : Skin corrosion
Skin Sens. : Skin sensitisation

Further information

Classification of the mixture:

Eye Irrit. 2 H319
Skin Sens. 1 H317
Aquatic Chronic 3 H412

Classification procedure:

Based on product data or assessment
Calculation method
Based on product data or assessment

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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.

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