according to Regulation (EC) No. 1907/2006, as amended



# **ARALDITE® 2014-2 HARDENER**

 Version
 Revision Date:
 SDS Number:
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# SECTION 1: Identification of the substance/mixture and of the company/undertaking

#### 1.1 Product identifier

Trade name : ARALDITE® 2014-2 HARDENER

Unique Formula Identifier

(UFI)

: WPF2-30WM-3008-JC7X

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

Use of the : Adhesives

Substance/Mixture

#### 1.3 Details of the supplier of the safety data sheet

Company : Huntsman Advanced Materials (Europe) BV

Address : Grijpenlaan 18

3300 Tienen 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

Emergency telephone : Berlin: 0049 30 19 24 0 & 0049 30 30 68 6 7 11

Bonn: 0049 228 19 27 0 & 0049 228 28 7 3 32 11

Erfurt: 0049 361 73 07 30 Freiburg: 0049 761 16 24 0

Göttingen: 0049 51 19 24 0 & 0049 551 38 31 80

Homburg: 0049 6841 19 24 0

Mainz: 0049 6131 19 24 0 & 0049 6131 23 24 66

München: 0049 89 19 24 0 Nürnberg: 0049 911 39 8 2 45 1 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.

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

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

# Labeling (REGULATION (EC) No 1272/2008)

Hazard pictograms







Signal Word : Danger

Hazard Statements : H315 Causes skin irritation.

H317 May cause an allergic skin reaction.

H318 Causes serious eye damage.

H411 Toxic to aquatic life with long lasting effects.

Precautionary Statements : **Prevention:** 

P261 Avoid breathing mist or vapors.
P264 Wash skin thoroughly after handling.
P273 Avoid release to the environment.

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.

P391 Collect spillage.

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

Reaction products of fatty acid dimers and trimers, C18 (unsaturated) alkyl and fatty acids, C18 (unsaturated) alkyl with amines, polyethylenepoly-, triethylenetetramine fraction 2,2,4(or 2,4,4)-trimethylhexane-1,6-diamine

Fatty acids, C18-unsatd., dimers, polymers with oleic acid and triethylenetetramine 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.

Ecological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher

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Toxicological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher

# **SECTION 3: Composition/information on ingredients**

#### 3.2 Mixtures

#### **Hazardous ingredients**

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concent ration (% w/w)
Reaction products of fatty acid dimers and trimers, C18 (unsaturated) alkyl and fatty acids, C18 (unsaturated) alkyl with amines, polyethylenepoly-, triethylenetetramine fraction	-	Skin Irrit. 2; H315 Eye Dam. 1; H318 Skin Sens. 1A; H317 Aquatic Chronic 2; H411	>= 30 - < 50
2,2,4(or 2,4,4)-trimethylhexane- 1,6-diamine	25513-64-8 247-063-2 01-2119560598-25	Acute Tox. 4; H302 Skin Corr. 1A; H314 Eye Dam. 1; H318 Skin Sens. 1A; H317 Acute toxicity estimate Acute oral toxicity: 910 mg/kg	>= 5 - < 10
Fatty acids, C18-unsatd., dimers, polymers with oleic acid and triethylenetetramine	68154-62-1 Polymer	Skin Irrit. 2; H315 Eye Irrit. 2; H319 Skin Sens. 1; H317 Aquatic Chronic 3; H412	>= 2,5 - < 10
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 Eye Dam. 1; H318 Skin Sens. 1B; H317 specific concentration limit Skin Corr. 1A; H314 >= 29,85 % Skin Corr. 1B; H314 9,65 - < 29,85 % Skin Corr. 1C; H314 5 - < 9,65 %	>= 3 - < 5

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.

Consult a physician.

Show this material safety data sheet to the doctor in

attendance.

Treat symptomatically.

Get medical attention if symptoms occur.

Protection of first-aiders : First Aid responders should pay attention to self-protection

and use the recommended protective clothing

If potential for exposure exists refer to Section 8 for specific

personal protective equipment.

Avoid inhalation, ingestion and contact with skin and eyes. No action shall be taken involving any personal risk or without

suitable training.

It may be dangerous to the person providing aid to give

mouth-to-mouth resuscitation.

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 : 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.

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

Risks : Causes skin irritation.

May cause an allergic skin reaction. Causes serious eye damage.

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

Treatment : Treat symptomatically.

according to Regulation (EC) No. 1907/2006, as amended



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### **SECTION 5: Firefighting measures**

# 5.1 Extinguishing media

Suitable extinguishing media : Water spray

Alcohol-resistant foam Carbon dioxide (CO2)

Dry chemical

Unsuitable extinguishing

media

Exercise caution when using a high volume water jet as it may

scatter and spread fire

#### 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

Sulfur oxides Carbon oxides

Nitrogen oxides (NOx)

#### 5.3 Advice for firefighters

Special protective equipment:

for fire-fighters

Wear self-contained breathing apparatus for firefighting if

necessary.

Specific extinguishing

methods

Use extinguishing measures that are appropriate to local

circumstances and the surrounding environment.

Further information : Collect contaminated fire extinguishing water separately. This

must not be discharged into drains.

Fire residues and contaminated fire extinguishing water must

be disposed of in accordance with local regulations.

# **SECTION 6: Accidental release measures**

# 6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Use personal protective equipment.

Refer to protective measures listed in sections 7 and 8.

# 6.2 Environmental precautions

Environmental precautions : Prevent product from entering drains.

Prevent further leakage or spillage if safe to do so.

If the product contaminates rivers and lakes or drains inform

respective authorities.

# 6.3 Methods and material for containment and cleaning up

Methods for cleaning up : Soak up with inert absorbent material (e.g. sand, silica gel,

acid binder, universal binder, sawdust).

Keep in suitable, closed containers for disposal.

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#### 6.4 Reference to other sections

For disposal considerations see section 13., See Section 1 for emergency contact information., For personal protection see section 8.

# **SECTION 7: Handling and storage**

#### 7.1 Precautions for safe handling

Technical measures : Ensure that eyewash stations and safety showers are close to

the workstation location.

Local/Total ventilation : Ensure adequate ventilation.

Advice on safe handling : Repeated or prolonged skin contact may cause skin irritation

and/or dermatitis and sensitization of susceptible persons. Persons suffering from asthma, eczema or skin problems should avoid contact, including dermal contact, with this

product.

Do not breathe vapors/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.

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

labeled containers.

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

SDS.

Storage class (TRGS 510) : 10

Recommended storage

temperature

2 - 40 °C

Further information on

storage stability

: Stable under normal conditions.

### 7.3 Specific end use(s)

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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
barium sulfate	7727-43-7	AGW (Inhalable	10 mg/m3	DE TRGS
		fraction)		900
	Peak-limit category: 2;(II)			
	Further information: When there is compliance with the OEL and biological			
	tolerance values, there is no risk of harming the unborn child			
		AGW (Alveolate	1,25 mg/m3	DE TRGS
		fraction)	_	900
	Peak-limit category: 2;(II)			
	Further information: When there is compliance with the OEL and biological			
	tolerance values, there is no risk of harming the unborn child			
		BM (Alveolar	0,5 mg/m3	DE TRGS
		dust fraction)	_	527
		MAK (measured	0,3 mg/m3	DE DFG MAK
		as the alveolate		
		fraction)		
	Peak-limit category: 8; II			
	Further information: Substances that cause cancer in humans or animals or that are considered to be carcinogenic for humans and for which a MAK value can be derived., Damage to the embryo or foetus is unlikely when the MAK			
	value or the BAT value is observed			
		MAK (inhalable	4 mg/m3	DE DFG MAK
		fraction)		
	Peak-limit category: 8; II			
	Further information: Substances that cause cancer in humans or animals or that are considered to be carcinogenic for humans and for which a MAK value			
	can be derived., Damage to the embryo or foetus is unlikely when the MAK			
	value or the BAT value is observed			

# 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	0,65 mg/m3

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			effects	
	Consumers	Inhalation	Long-term local effects	0,65 mg/m3
	Consumers	Oral	Long-term systemic effects	0,2 mg/kg
2,2,4(or 2,4,4)- trimethylhexane-1,6- diamine	Consumers	Oral	Long-term systemic effects	0,05 mg/kg
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

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

Substance name	Environmental Compartment	Value	
N'-(3-aminopropyl)-N,N-	Fresh water	9,2 µg/l	
dimethylpropane-1,3-diamine			
1	Remarks: Assessment Factors	·	
	Sea water	0,92 µg/l	
	Remarks: Assessment Factors		
	Freshwater - intermittent	92 μg/l	
	Remarks: Assessment Factors		
	Sewage treatment plant	18,1 mg/l	
	Remarks:Assessment Factors		
	Fresh water sediment	0,0336 mg/kg dry weight (d.w.)	
	Sea sediment	0,0034 mg/kg dry	
		weight (d.w.)	
	Soil	0,0013 mg/kg dry	
		weight (d.w.)	
Siloxanes and silicones, di-Me,	Fresh water sediment	> 100 mg/kg	
reaction products with silica			
	Remarks: Assessment Factors		
	Soil	23 mg/kg	
	Remarks: Assessment Factors		
2,2,4(or 2,4,4)-trimethylhexane- 1,6-diamine	Fresh water	0,102 mg/l	
	Remarks: Assessment Factors	·	
	Sea water	0,01 mg/l	
	Remarks: Assessment Factors		
	Sewage treatment plant	72 mg/l	
	Remarks: Assessment Factors		
	Fresh water sediment	0,662 mg/kg	
	Sea sediment	0,062 mg/kg	
barium sulfate	Fresh water	115 µg/l	
	Sewage treatment plant	62,2 mg/l	
	Remarks: Assessment Factors		
	Fresh water sediment	600,4 mg/kg	
	Remarks: Assessment Factors		
	Soil	207,7 mg/kg	

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Remarks: Assessment Factors

#### 8.2 Exposure controls

#### Personal protective equipment

Eye/face 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 : Nitrile rubber Break through time : 10 - 480 min

Material : Ethyl Vinyl Alcohol Laminate (EVAL)

Break through time : > 8 h

Remarks : Gloves should be discarded and replaced if there is any

indication of degradation or chemical breakthrough. Take note of the information given by the producer concerning permeability and break through times, and of special

workplace conditions (mechanical strain, duration of contact).

The selected protective gloves have to satisfy the

specifications of Regulation (EU) 2016/425 and the standard

EN 374 derived from it.

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

Equipment should conform to EN 14387

Filter type : Combined particulates, inorganic and acidic gas/vapor,

ammonia/amines and organic vapor type (ABEK-P)

#### **SECTION 9: Physical and chemical properties**

### 9.1 Information on basic physical and chemical properties

Physical state : paste

Color : black

Odor : amine-like

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

Melting point/freezing point : No data available

Boiling point : > 200 °C

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

Lower explosion limit / Lower

flammability limit

: No data is available on the product itself.

Upper explosion limit / Upper

flammability limit

: No data is available on the product itself.

Flash point :  $> 100 \, ^{\circ}\text{C}$ 

Method: closed cup

Autoignition temperature : > 200 °C

Decomposition temperature : > 200 °C

pH : substance/mixture is non-soluble (in water)

Viscosity

Viscosity, dynamic : 75 - 150 Pas (20 °C)

Method: DIN Method, other

Solubility(ies)

Water solubility : 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.

Vapor pressure : 0,001 hPa

Density : ca. 1,6 g/cm3

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

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

Particle characteristics : No data is available on the product itself.

9.2 Other information

Miscibility with water : immiscible

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Molecular weight : 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

No hazardous decomposition products are known.

#### **SECTION 11: Toxicological information**

### 11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

### **Acute toxicity**

Not classified due to lack of data.

#### **Product:**

Acute oral toxicity : Acute toxicity estimate: > 2 000 mg/kg

Method: Calculation method

#### **Components:**

Reaction products of fatty acid dimers and trimers, C18 (unsaturated) alkyl and fatty acids, C18 (unsaturated) alkyl with amines, polyethylenepoly-, triethylenetetramine fraction:

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

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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2,2,4(or 2,4,4)-trimethylhexane-1,6-diamine:

Acute oral toxicity : LD50 (Rat): 910 mg/kg

Method: OECD Test Guideline 401

Acute toxicity estimate: 910 mg/kg Method: Calculation method

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

Acute oral toxicity : LD50 (Rat, male and female): 1 669 mg/kg

Method: OECD Test Guideline 401

GLP: no

Assessment: The component/mixture is moderately toxic after

single ingestion.

Skin corrosion/irritation

Causes skin irritation.

Product:

Species : reconstructed human epidermis (RhE)

Method : OECD Test Guideline 435

Result : Irritating to skin.

**Components:** 

Reaction products of fatty acid dimers and trimers, C18 (unsaturated) alkyl and fatty acids, C18

(unsaturated) alkyl with amines, polyethylenepoly-, triethylenetetramine fraction:

Species : human skin

Assessment : May cause eye and skin irritation.

Method : OECD Test Guideline 431

Result : May cause eye and skin irritation.

Species : human skin Assessment : Irritant

Method : OECD Test Guideline 439

Result : Irritating to skin.

2,2,4(or 2,4,4)-trimethylhexane-1,6-diamine:

Species : Rabbit

Assessment : Causes severe burns.

Result : Corrosive after 3 minutes or less of exposure

Fatty acids, C18-unsatd., dimers, polymers with oleic acid and triethylenetetramine:

Assessment : Irritating to skin.

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

Species : Rabbit

Assessment : Causes severe burns.

Method : OECD Test Guideline 404

Result : Extremely corrosive and destructive to tissue.

GLP : yes

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### Serious eye damage/eye irritation

Causes serious eye damage.

#### **Components:**

Reaction products of fatty acid dimers and trimers, C18 (unsaturated) alkyl and fatty acids, C18 (unsaturated) alkyl with amines, polyethylenepoly-, triethylenetetramine fraction:

Species : Rabbit

Method : OECD Test Guideline 405

Result : Corrosive

### 2,2,4(or 2,4,4)-trimethylhexane-1,6-diamine:

Species : Rabbit

Method : OECD Test Guideline 405

Result : Corrosive

#### Fatty acids, C18-unsatd., dimers, polymers with oleic acid and triethylenetetramine:

Assessment : Irritating to eyes.

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

Assessment : Risk of serious damage to eyes. Result : Risk of serious damage to eyes.

GLP : no

#### Respiratory or skin sensitisation

#### Skin sensitisation

May cause an allergic skin reaction.

#### Respiratory sensitisation

Not classified due to lack of data.

### **Components:**

Reaction products of fatty acid dimers and trimers, C18 (unsaturated) alkyl and fatty acids, C18 (unsaturated) alkyl with amines, polyethylenepoly-, triethylenetetramine fraction:

Exposure routes : Skin Species : Mouse

Method : OECD Test Guideline 429

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

#### 2,2,4(or 2,4,4)-trimethylhexane-1,6-diamine:

Exposure routes : Skin Species : Guinea pig

Method : OECD Test Guideline 406

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

#### Fatty acids, C18-unsatd., dimers, polymers with oleic acid and triethylenetetramine:

Assessment : May cause sensitisation by skin contact.

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

Test Type : Maximisation Test

according to Regulation (EC) No. 1907/2006, as amended



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Exposure routes : Skin Species : Guinea pig

Assessment : Probability or evidence of low to moderate skin sensitisation

rate in humans

Method : OECD Test Guideline 406

Result : Probability or evidence of low to moderate skin sensitisation

rate in humans

GLP : yes

### Germ cell mutagenicity

Not classified due to lack of data.

#### Components:

Reaction products of fatty acid dimers and trimers, C18 (unsaturated) alkyl and fatty acids, C18 (unsaturated) alkyl with amines, polyethylenepoly-, triethylenetetramine fraction:

Genotoxicity in vitro : Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 471

Result: negative

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 476

Result: negative

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 487

Result: negative

#### 2,2,4(or 2,4,4)-trimethylhexane-1,6-diamine:

Genotoxicity in vitro : Test Type: Ames test

Test system: Salmonella typhimurium

Concentration: 5000 ug/plate

Metabolic activation: with and without metabolic activation

Method: Directive 67/548/EEC, Annex, B.13/14

Result: negative

Test Type: Chromosome aberration test in vitro

Test system: Chinese hamster ovary cells

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 473

Result: negative

Test Type: In vitro mammalian cell gene mutation test

Test system: Chinese hamster ovary cells

Concentration: 2 mg/ml

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 476

Result: negative

Genotoxicity in vivo : Species: Chinese hamster (male and female)

Cell type: Bone marrow Application Route: Oral Dose: 825 - 1000 mg/kg

according to Regulation (EC) No. 1907/2006, as amended



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Method: OECD Test Guideline 474

Result: negative

Test Type: In vivo micronucleus test Species: Mouse (male and female)

Application Route: Oral Dose: 850 - 1000 mg/kg

Method: OECD Test Guideline 474

Result: negative

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

Genotoxicity in vitro : Test Type: Chromosome aberration test in vitro

Test system: Human lymphocytes

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 487

Result: negative

GLP: yes

Test Type: reverse mutation assay Test system: Salmonella typhimurium

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 471

Result: negative

Test Type: In vitro mammalian cell gene mutation test

Test system: mouse lymphoma cells

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 476

Result: negative GLP: yes

Test Type: reverse mutation assay

Test system: Salmonella tryphimurium and E. coli

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 471

Result: negative

# Carcinogenicity

Not classified due to lack of data.

#### Components:

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

Species : Mouse, male
Application Route : Dermal
Exposure time : 20 month(s)

Dose : 1.25/56.3 mg/animal

Frequency of Treatment : 3 daily

NOAEL : >= 56,3 mg/kg body weight

Result : negative

Remarks : Information given is based on data obtained from similar

substances.

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### Reproductive toxicity

Not classified due to lack of data.

#### Components:

Reaction products of fatty acid dimers and trimers, C18 (unsaturated) alkyl and fatty acids, C18

(unsaturated) alkyl with amines, polyethylenepoly-, triethylenetetramine fraction:

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.

#### 2,2,4(or 2,4,4)-trimethylhexane-1,6-diamine:

Effects on fertility Species: Rat. male and female

Application Route: Oral

Dose: 10, 60, 120 mg/kg bw/day Method: OECD Test Guideline 416

Result: No effects on fertility and early embryonic

development were detected.

Effects on fetal development Species: Rabbit, female

**Application Route: Oral** 

General Toxicity Maternal: NOAEL: 50 000 ppm

Result: No teratogenic effects

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

Effects on fertility Test Type: Combined Repeated Dose Toxicity Study with the

Reproduction / Developmental Toxicity Screening Test

Species: Rat, male and female

Application Route: Oral

Dose: 5, 15 and 50 mg/kg bw/d

General Toxicity Parent: NOAEL: 15 mg/kg body weight General Toxicity F1: NOAEL: 15 mg/kg body weight

Method: OECD Test Guideline 422

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

GLP: yes

Effects on fetal development : Test Type: reproductive and developmental toxicity study

Species: Rat, male and female

Application Route: Oral

Dose: 5, 15 and 50 mg/kg bw/d

General Toxicity Maternal: NOAEL: 15 mg/kg body weight Developmental Toxicity: NOAEL: 15 mg/kg body weight

Method: OECD Test Guideline 422

Result: Not classified

GLP: yes

Remarks: Information given is based on data obtained from

similar substances.

Reproductive toxicity -

: No evidence of adverse effects on sexual function and fertility,

Assessment or on development, based on animal experiments.

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### STOT-single exposure

Not classified due to lack of data.

#### STOT-repeated exposure

Not classified due to lack of data.

### Repeated dose toxicity

#### Components:

Reaction products of fatty acid dimers and trimers, C18 (unsaturated) alkyl and fatty acids, C18 (unsaturated) alkyl with amines, polyethylenepoly-, triethylenetetramine fraction:

Species : Rat, male and female

NOAEL : 1000 mg/kg
Application Route : Ingestion
Exposure time : 6 Weeks
Number of exposures : 7 d

Method : Subacute toxicity

# 2,2,4(or 2,4,4)-trimethylhexane-1,6-diamine:

Species : Rat, male and female NOAEL : 10 mg/kg bw/day

Application Route : Ingestion
Exposure time : 13 Weeks
Number of exposures : Daily

Dose : 10, 60, 180mg/kg bw

Target Organs : Liver

Species : Rat, male and female LOAEL : 60 mg/kg bw/day

Application Route : Ingestion Exposure time : 13 Weeks Number of exposures : Daily

Dose : 10, 60, 180mg/kg bw

Target Organs : Liver

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

Species : Rat, male and female

500 mg/m3

Application Route : Inhalation
Test atmosphere : vapor
Exposure time : 21 d 6 h
Number of exposures : 5 days/week
Dose : 550 mg/m3

Method : Subchronic toxicity

Remarks : Based on data from similar materials

Species : Mouse, male

NOAEL : >= 56,3 mg/kg/d

Application Route : Skin contact

Number of exposures : 3 d

Method : Chronic toxicity

Remarks : Based on data from similar materials

Species : Rat, male and female

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NOAEL : 41 mg/kg
NOAEL : 1 000 mg/l, ppm
Application Route : oral (feed)
Exposure time : 20 months
Number of exposures : 3 times/week

Dose : 1000/7500/15000 ppm

Method : OECD Test Guideline 408

#### **Aspiration toxicity**

Not classified due to lack of data.

#### 11.2 Information on other hazards

### **Endocrine disrupting properties**

#### **Product:**

Assessment : The substance/mixture does not contain components

considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at

levels of 0.1% or higher

# Experience with human exposure

No data available

# Toxicology, Metabolism, Distribution

No data available

#### **Neurological effects**

No data available

#### **Further information**

No data available

# **SECTION 12: Ecological information**

### 12.1 Toxicity

#### **Components:**

Reaction products of fatty acid dimers and trimers, C18 (unsaturated) alkyl and fatty acids, C18 (unsaturated) alkyl with amines, polyethylenepoly-, triethylenetetramine fraction:

Toxicity to fish : LC50 (Brachydanio rerio (zebrafish)): 7,07 mg/l

Exposure time: 96 h
Test Type: semi-static test
Test substance: Fresh water
Method: OECD Test Guideline 203

Toxicity to daphnia and other :

aquatic invertebrates

EC50 (Daphnia magna (Water flea)): 5,18 mg/l

Exposure time: 48 h
Test Type: static test
Test substance: Fresh water
Method: OECD Test Guideline 202

Toxicity to algae/aquatic

plants

EC50 (Selenastrum capricornutum (green algae)): 2,43 mg/l

Exposure time: 72 h

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Test Type: static test

Test substance: Fresh water Method: OECD Test Guideline 201

Toxicity to microorganisms : EC50 (activated sludge): 421 mg/l

Exposure time: 3 h
Test Type: static test

Test substance: Fresh water Method: OECD Test Guideline 209

2,2,4(or 2,4,4)-trimethylhexane-1,6-diamine:

Toxicity to fish : LC50 (Leuciscus idus (Golden orfe)): 174 mg/l

Exposure time: 48 h Method: DIN 38412

Toxicity to daphnia and other :

aquatic invertebrates

EC50 (Daphnia magna (Water flea)): 31,5 mg/l

Exposure time: 24 h Method: DIN 38412

Toxicity to algae/aquatic

plants

ErC50 (Pseudokirchneriella subcapitata (algae)): 43,5 mg/l

Exposure time: 72 h

Method: OECD Test Guideline 201

EC50 (Pseudokirchneriella subcapitata (algae)): 37,1 mg/l

Exposure time: 72 h

Method: OECD Test Guideline 201

NOEC (Pseudokirchneriella subcapitata (algae)): 16 mg/l

Exposure time: 72 h

Method: OECD Test Guideline 201

Toxicity to microorganisms : IC50 (Pseudomonas putida): 89 mg/l

Exposure time: 17 h

Toxicity to fish (Chronic

toxicity)

NOEC: 10,9 mg/l

Exposure time: 30 d

Species: Brachydanio rerio (zebrafish) Method: OECD Test Guideline 210

Lowest Observed Effect Concentration: 10,9 mg/l

Exposure time: 30 d

Species: Brachydanio rerio (zebrafish) Method: OECD Test Guideline 210

Toxicity to daphnia and other :

aquatic invertebrates (Chronic toxicity)

NOEC: 1,02 mg/l Exposure time: 21 d

Species: Daphnia magna (Water flea) Method: OECD Test Guideline 211

Lowest Observed Effect Concentration: 1,02 mg/l

Exposure time: 21 d

Species: Daphnia magna (Water flea) Method: OECD Test Guideline 211

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Toxicity to soil dwelling

organisms

: NOEC: >= 1 000 mg/kg Exposure time: 56 d

Species: Eisenia fetida (earthworms) Method: OECD Test Guideline 222

EC50: >= 1 000 mg/kg Exposure time: 56 d

Species: Eisenia fetida (earthworms) Method: OECD Test Guideline 222

#### Fatty acids, C18-unsatd., dimers, polymers with oleic acid and triethylenetetramine:

### **Ecotoxicology Assessment**

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

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

Toxicity to fish : LC50 (Brachydanio rerio (zebrafish)): > 100 mg/l

End point: mortality
Exposure time: 96 h
Test Type: static test
Analytical monitoring: yes
Test substance: Fresh water
Method: OECD Test Guideline 203

GLP: yes

Toxicity to daphnia and other :

aquatic invertebrates

EC50 (Daphnia magna (Water flea)): 9,2 mg/l

End point: Immobilization
Exposure time: 48 h
Test Type: static test
Analytical monitoring: no
Test substance: Fresh water
Method: OECD Test Guideline 202

GLP: yes

Toxicity to algae/aquatic

plants

ErC50 (Selenastrum capricornutum (green algae)): 21 mg/l

Exposure time: 72 h
Test Type: static test
Analytical monitoring: yes
Test substance: Fresh water
Method: OECD Test Guideline 201

GLP: yes

NOEC (Selenastrum capricornutum (green algae)): 5,7 mg/l

Exposure time: 72 h
Test Type: static test
Analytical monitoring: yes
Test substance: Fresh water
Method: OECD Test Guideline 201

GLP: yes

Toxicity to microorganisms : EC50 (Pseudomonas putida): 181 mg/l

Exposure time: 16 h
Test Type: static test
Analytical monitoring: no

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Test substance: Fresh water Method: DIN 38 412 Part 8

GLP: no

### 12.2 Persistence and degradability

#### **Components:**

# 2,2,4(or 2,4,4)-trimethylhexane-1,6-diamine:

Biodegradability : Inoculum: activated sludge

Concentration: 11,4 mg/l

Result: Not readily biodegradable.

Biodegradation: 7 % Exposure time: 28 d

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

Biodegradability : Test Type: aerobic

Result: Readily biodegradable.

Biodegradation: 100 %

Related to: Dissolved organic carbon (DOC)

Exposure time: 28 d

Method: OECD Test Guideline 301A

Test substance: Fresh water

GLP: yes

### 12.3 Bioaccumulative potential

#### **Components:**

# 2,2,4(or 2,4,4)-trimethylhexane-1,6-diamine:

Partition coefficient: n- : log Pow: -0,3 (25 °C)

octanol/water Method: OECD Test Guideline 117

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

Partition coefficient: n- : log Pow: -0,56 (25 °C)

octanol/water pH: 11,6

Method: OECD Test Guideline 107

# 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 Endocrine disrupting properties

### **Product:**

Assessment : The substance/mixture does not contain components

considered to have endocrine disrupting properties according

according to Regulation (EC) No. 1907/2006, as amended



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to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at

levels of 0.1% or higher

### 12.7 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 : Dispose of contents and container in accordance with all local,

regional, national and international regulations.

Do not dispose of waste into sewer.

Do not contaminate ponds, waterways or ditches with

chemical or used container.

Contaminated packaging : Empty remaining contents.

Dispose of as unused product. Do not re-use empty containers.

#### **SECTION 14: Transport information**

#### 14.1 UN number or ID number

ADN : UN 3082
ADR : UN 3082
RID : UN 3082
IMDG : UN 3082
IATA : UN 3082

14.2 UN proper shipping name

**ADN** : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,

N.O.S.

(POLYAMIDE RESIN)

ADR : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,

N.O.S.

(POLYAMIDE RESIN)

RID : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,

N.O.S.

(POLYAMIDE RESIN)

IMDG : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,

N.O.S.

(POLYAMIDE RESIN)

**IATA** : Environmentally hazardous substance, liquid, n.o.s.

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### (POLYAMIDE RESIN)

#### 14.3 Transport hazard class(es)

Class Subsidiary risks

ADN : 9

ADR : 9

RID : 9

IMDG : 9

IATA : 9

### 14.4 Packing group

#### ADN

Packing group : III
Classification Code : M6
Hazard Identification Number : 90
Labels : 9

#### **ADR**

Packing group : III
Classification Code : M6
Hazard Identification Number : 90
Labels : 9
Tunnel restriction code : (-)

#### **RID**

Packing group : III
Classification Code : M6
Hazard Identification Number : 90
Labels : 9

# IMDG

Packing group : III
Labels : 9
EmS Code : F-A, S-F

#### IATA (Cargo)

Packing instruction (cargo : 964

aircraft)

Packing instruction (LQ) : Y964
Packing group : III

Labels : Miscellaneous

#### IATA (Passenger)

Packing instruction : 964

(passenger aircraft)

Packing instruction (LQ) : Y964
Packing group : III

Labels : Miscellaneous

# 14.5 Environmental hazards

#### **ADN**

Environmentally hazardous : yes

**ADR** 

Environmentally hazardous : yes

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**RID** 

Environmentally hazardous : yes

**IMDG** 

Marine pollutant : yes

IATA (Passenger)

Environmentally hazardous : yes

IATA (Cargo)

Environmentally hazardous : yes

#### 14.6 Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

### 14.7 Maritime transport in bulk according to IMO instruments

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)

REACH - Candidate List of Substances of Very High

Concern for Authorization (Article 59).

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances,

mixtures and articles (Annex XVII)

: Not applicable

: This product does not contain substances of very high concern.

Conditions of restriction for the

following entries should be considered:

Number on list 3

Number on list 75: If you intend to use this product as tattoo ink, please

use triis product as tattoo irik, pit

contact your vendor.

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

**ENVIRONMENTAL HAZARDS** 

Water hazard class : WGK 2 obviously hazardous to water

(Germany) Classification according to AwSV, Annex 1 (5.2)

#### Other regulations:

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

E2

according to Regulation (EC) No. 1907/2006, as amended



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

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

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

NZIoC : 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

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

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

TSCA : All substances listed as active on the TSCA inventory

#### **Inventories**

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

### 15.2 Chemical Safety Assessment

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

#### **SECTION 16: Other information**

#### **Full text of H-Statements**

H302 : Harmful if swallowed.

H314 : Causes severe skin burns and eye damage.

H315 : Causes skin irritation.

H317 : May cause an allergic skin reaction.
H318 : Causes serious eye damage.
H319 : Causes serious eye irritation.

H411 : Toxic to aquatic life with long lasting effects.
H412 : Harmful to aquatic life with long lasting effects.

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#### 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 Irrit. : Skin irritation
Skin Sens. : Skin sensitisation

DE DFG MAK : Germany. MAK BAT Annex IIa

DE TRGS 527 : Germany. TRGS 527 - Activities with nanomaterials
DE TRGS 900 : Germany. TRGS 900 - Occupational exposure limit values.

DE DFG MAK / MAK : MAK value

DE TRGS 527 / BM : Assessment scale
DE TRGS 900 / AGW : Time Weighted Average

#### **Further information**

#### Classification of the mixture: Classification procedure:

Skin Irrit. 2 H315 Based on product data or assessment

Eye Dam. 1 H318 Calculation method Skin Sens. 1 H317 Calculation method Aquatic Chronic 2 H411 Calculation method

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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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