

# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

**HUNTSMAN**

Enriching lives through innovation

## ARALDITE® 2013-1 HARDENER

Version 1.6      Revision Date: 06.10.2023      SDS Number: 400001016024      Date of last issue: 11.09.2023  
Date of first issue: 12.01.2016

Print Date 04.04.2024

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

#### 1.1 Product identifier

Trade name : ARALDITE® 2013-1 HARDENER

Unique Formula Identifier (UFI) : KMS5-Y0GK-A00M-NNX9

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

Use of the Substance/Mixture : Hardener

Recommended restrictions on use : For industrial use only.

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

Company : Huntsman Advanced Materials (Europe) BV  
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 : 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

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### 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.
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

##### Labelling (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 vapours.  
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 components 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  
Fatty acids, C18-unsatd., dimers, polymers with oleic acid and triethylenetetramine  
Amines, polyethylenepoly-, triethylenetetramine fraction

#### 2.3 Other hazards

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

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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

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 components

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)
Reaction products of fatty acid dimers and trimers, C18 (unsaturated) alkyl and fatty acids, C18 (unsaturated) alkyl with amines, polyethylenepoly-, triethylenetetramine fraction	Not Assigned - 01-2119972322-40	Skin Irrit. 2; H315 Eye Dam. 1; H318 Skin Sens. 1A; H317 Aquatic Chronic 2; H411	>= 30 - < 50
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	>= 10 - < 20
Amines, polyethylenepoly-, triethylenetetramine fraction	90640-67-8 292-588-2 01-2119487919-13	Acute Tox. 4; H302 Acute Tox. 4; H312 Skin Corr. 1B; H314 Eye Dam. 1; H318 Skin Sens. 1; H317 Aquatic Chronic 3; H412	>= 5 - < 10

For explanation of abbreviations see section 16.

### SECTION 4: First aid measures

#### 4.1 Description of first aid measures

General advice : Move out of dangerous area.  
Consult a physician.  
Show this safety data sheet to the doctor in attendance.  
Treat symptomatically.  
Get medical attention if symptoms occur.

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

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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.

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## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

- Suitable extinguishing media : Water spray  
Alcohol-resistant foam  
Carbon dioxide (CO<sub>2</sub>)  
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 : Ammonia

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products      Carbon oxides  
Nitrogen oxides (NO<sub>x</sub>)

### 5.3 Advice for firefighters

- Special protective equipment for firefighters : 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 : Neutralise with acid.  
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 : Repeated or prolonged skin contact may cause skin irritation and/or dermatitis and sensitisation of susceptible persons.  
Persons suffering from asthma, eczema or skin problems should avoid contact, including dermal contact, with this product.  
Do not breathe vapours/dust.  
Avoid exposure - obtain special instructions before use.  
Avoid contact with skin and eyes.

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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 labelled containers.

Advice on common storage : Do not store near acids.

Storage class (TRGS 510) : 10

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

#### Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
Polyethylene	9002-88-4	AGW (Inhalable fraction)	10 mg/m <sup>3</sup>	DE TRGS 900
		Peak-limit: excursion factor (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 fraction)	1,25 mg/m <sup>3</sup>	DE TRGS 900
		Peak-limit: excursion factor (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		
Silicon, amorphous	112945-52-	AGW (Inhalable)	4 mg/m <sup>3</sup>	DE TRGS

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5	fraction)	(Silica)	900
Further information: When there is compliance with the OEL and biological tolerance values, there is no risk of harming the unborn child			

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

Substance name	End Use	Exposure routes	Potential health effects	Value
Silicon, amorphous	Workers	Inhalation	Long-term systemic effects	4 mg/m <sup>3</sup>
Amines, polyethylenepoly-, triethylenetetramine fraction	Workers	Inhalation	Long-term systemic effects	0,54 mg/m <sup>3</sup>
	Consumers	Inhalation	Long-term systemic effects	0,096 mg/m <sup>3</sup>
	Consumers	Oral	Long-term systemic effects	14 mg/kg bw/day

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

Substance name	Environmental Compartment	Value
Amines, polyethylenepoly-, triethylenetetramine fraction	Fresh water	0,027 mg/l
	Marine water	0,003 mg/l
	Sewage treatment plant	0,13 mg/l
	Fresh water sediment	8,572 mg/kg dry weight (d.w.)
	Marine sediment	0,857 mg/kg dry weight (d.w.)
	Soil	1,25 mg/kg dry weight (d.w.)

## 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

Remarks : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. 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  
Equipment should conform to EN 14387

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Filter type : Combined particulates and ammonia/amines type (K-P)

**SECTION 9: Physical and chemical properties**

**9.1 Information on basic physical and chemical properties**

Physical state : paste

Colour : beige

Odour : amine-like

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

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

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

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 °C  
Method: Pensky-Martens closed cup

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

Decomposition temperature : No data is available on the product itself.

pH : ca. 12 (20 °C)  
Concentration: 500 g/l

Viscosity  
Viscosity, dynamic : thixotropic

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.

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



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Density : 0,88 g/cm<sup>3</sup> (20 °C)  
Relative density : 0,88 (20 °C)  
Relative vapour density : No data is available on the product itself.  
Particle characteristics : No data is available on the product itself.

### 9.2 Other information

No data is available on the product itself.

## 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

No decomposition if stored and applied as directed.

Hazardous decomposition products : ammonia, anhydrous  
Aldehydes  
Nitrogen oxides (NO<sub>x</sub>)  
carbon monoxide  
carbon dioxide  
Ketones

## 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

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

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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

### **Amines, polyethylenepoly-, triethylenetetramine fraction:**

Acute oral toxicity : LD50 (Rat, male and female): 1 716,2 mg/kg  
Method: OECD Test Guideline 401  
Assessment: The component/mixture is moderately toxic after single ingestion.

Acute dermal toxicity : LD50 (Rabbit, male and female): 1 465,4 mg/kg  
Method: OECD Test Guideline 402  
Assessment: The component/mixture is moderately toxic after single contact with skin.

### **Skin corrosion/irritation**

Causes skin irritation.

### Product:

Method : OECD Test Guideline 404  
Result : Severe skin irritation

### 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.

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

Assessment : Irritating to skin.

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### **Amines, polyethylenepoly-, triethylenetetramine fraction:**

Species : reconstructed human epidermis (RhE)  
Assessment : Causes burns.  
Method : OECD Test Guideline 435  
Result : Corrosive after 3 minutes to 1 hour of exposure

Species : Rabbit  
Assessment : Causes burns.  
Method : OECD Test Guideline 404  
Result : Corrosive after 3 minutes to 1 hour of exposure

### **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

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

Assessment : Irritating to eyes.

### **Amines, polyethylenepoly-, triethylenetetramine fraction:**

Species : Rabbit  
Assessment : Risk of serious damage to eyes.  
Method : OECD Test Guideline 405  
Result : Irreversible effects on the eye

### **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.

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

Assessment : May cause sensitisation by skin contact.

### **Amines, polyethylenepoly-, triethylenetetramine fraction:**

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Exposure routes : Skin  
Species : Guinea pig  
Assessment : Probability or evidence of skin sensitisation in humans  
Method : OECD Test Guideline 406  
Result : Probability or evidence of skin sensitisation in humans

### 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

### Amines, polyethylenepoly-, triethylenetetramine fraction:

Genotoxicity in vitro : 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: positive  
GLP: yes

Test Type: Micronucleus test  
Test system: Human lymphocytes  
Metabolic activation: with and without metabolic activation  
Method: OECD Test Guideline 487  
Result: negative

Genotoxicity in vivo : Test Type: In vivo micronucleus test  
Species: Mouse (male and female)  
Cell type: Bone marrow  
Application Route: Intraperitoneal injection  
Dose: 0 - 600 mg/kg  
Method: OECD Test Guideline 474  
Result: negative

### Carcinogenicity

Not classified due to lack of data.

### Components:

### Amines, polyethylenepoly-, triethylenetetramine fraction:

Species : Mouse, male

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Application Route : Dermal  
NOAEL :  $\geq 50$  mg/kg bw/day  
Method : OECD Test Guideline 451  
Result : negative

Species : Mouse, male  
Application Route : Dermal  
Exposure time : 104 weeks  
NOAEL :  $\geq 20$  mg/kg bw/day  
Method : OECD Test Guideline 451  
Result : negative

### 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.

### Amines, polyethylenepoly-, triethylenetetramine fraction:

Effects on foetal development : Test Type: Pre-natal  
Species: Rat  
Application Route: Oral  
Dose: 75/325/750 mg/kg bw/day  
Duration of Single Treatment: 10 d  
General Toxicity Maternal: NOAEL:  $\geq 750$  mg/kg body weight  
Developmental Toxicity: NOAEL:  $\geq 750$  mg/kg body weight  
Method: OECD Test Guideline 414  
Result: No teratogenic effects

Test Type: Pre-natal  
Species: Rabbit  
Application Route: Dermal  
Dose: 5/50/125 mg/kg bw/day  
Duration of Single Treatment: 13 d  
General Toxicity Maternal: NOAEL: 50 mg/kg body weight  
Developmental Toxicity: NOAEL:  $\geq 125$  mg/kg body weight  
Method: OECD Test Guideline 414  
Result: No teratogenic effects

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

### STOT - single exposure

Not classified due to lack of data.

### STOT - repeated exposure

Not classified due to lack of data.

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### 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

#### **Amines, polyethylenepoly-, triethylenetetramine fraction:**

Species : Rat, male and female  
NOAEL : 350 mg/kg  
Application Route : Oral  
Exposure time : 28 d  
Number of exposures : 7 d  
Dose : 100/350/1000 mg/kg bw/day  
Method : OECD Test Guideline 407  
Target Organs : Lungs  
Remarks : Information given is based on data obtained from similar substances.

Species : Dog, male and female  
NOAEL : 125 mg/kg  
Application Route : Oral  
Target Organs : Lungs  
Remarks : Information given is based on data obtained from similar substances.

Species : Dog, male and female  
NOAEL : 50 mg/kg  
Application Route : Oral  
Method : Subchronic toxicity  
Remarks : Information given is based on data obtained from similar substances.

Species : Rat, male and female  
NOAEL : 50 mg/kg  
Application Route : Oral  
Exposure time : 26 weeks  
Dose : 50/175/600 mg/kg bw/day  
Method : OECD Test Guideline 408  
Target Organs : Lungs  
Remarks : Information given is based on data obtained from similar substances.

Species : Mouse, male and female  
NOAEL : 92 mg/kg, 600 ppm  
Application Route : Oral  
Exposure time : 120/600/3000 ppm  
Method : OECD Test Guideline 408  
Remarks : Information given is based on data obtained from similar substances.

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substances.

### 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  
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

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Test Type: static test  
Test substance: Fresh water  
Method: OECD Test Guideline 209

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

#### Ecotoxicology Assessment

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

### Amines, polyethylenepoly-, triethylenetetramine fraction:

Toxicity to fish : LC50 (Poecilia reticulata (guppy)): 570 mg/l  
Exposure time: 96 h  
Test Type: semi-static test  
Test substance: Fresh water  
Method: Directive 67/548/EEC, Annex V, C.1.

LC50 (Leuciscus idus (Golden orfe)): 200 - 500 mg/l  
Exposure time: 96 h

LC50 (Pimephales promelas (fathead minnow)): 330 mg/l  
End point: mortality  
Exposure time: 96 h  
Test Type: static test  
Test substance: Fresh water  
Method: Fish Acute Toxicity Test

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 31,1 mg/l  
End point: Immobilization  
Exposure time: 48 h  
Test Type: static test  
Test substance: Fresh water  
Method: Directive 67/548/EEC, Annex V, C.2.

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

EC10 (Selenastrum capricornutum (green algae)): 1,34 mg/l  
Exposure time: 72 h  
Test Type: semi-static test  
Test substance: Fresh water  
Method: OECD Test Guideline 201

Toxicity to microorganisms : NOEC (Bacteria):  $\geq$  100 mg/l  
Exposure time: 28 d  
Method: OECD Test Guideline 216

EC50 (Bacteria):  $>$  100 mg/l  
Exposure time: 28 h  
Method: OECD Test Guideline 216

EC50 (Bacteria): 15,7 mg/l



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Exposure time: 2 h  
Test Type: static test  
Test substance: Fresh water

NOEC (Bacteria): 1,3 mg/l  
Exposure time: 2 h  
Test Type: static test  
Test substance: Fresh water

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : EC10: 1,9 mg/l  
Exposure time: 21 d  
Species: Daphnia magna (Water flea)  
Test Type: semi-static test  
Test substance: Fresh water  
Method: OECD Test Guideline 202

Toxicity to soil dwelling organisms : NOEC: ca. 62,5 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

### Ecotoxicology Assessment

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

## 12.2 Persistence and degradability

### Components:

#### **Amines, polyethylenepoly-, triethylenetetramine fraction:**

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

Test Type: aerobic  
Inoculum: activated sludge  
Result: Not inherently biodegradable.  
Biodegradation: 20 %  
Related to: Dissolved organic carbon (DOC)  
Exposure time: 84 d  
Method: OECD Test Guideline 302A  
Test substance: Fresh water

## 12.3 Bioaccumulative potential

### Components:

#### **Amines, polyethylenepoly-, triethylenetetramine fraction:**

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Partition coefficient: n-octanol/water : log Pow: -2,08 - 2,90 (20 °C)  
Method: QSAR

### 12.4 Mobility in soil

#### Components:

#### **Amines, polyethylenepoly-, triethylenetetramine fraction:**

Distribution among environmental compartments : Koc: 3162,28, log Koc: 3,5  
Method: OECD Test Guideline 106

### 12.5 Results of PBT and vPvB assessment

#### Product:

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

### 12.6 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

### 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

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**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.  
(Polyamide resin)

### 14.3 Transport hazard class(es)

	Class	Subsidiary risks
<b>ADN</b>	: 9	
<b>ADR</b>	: 9	
<b>RID</b>	: 9	
<b>IMDG</b>	: 9	
<b>IATA</b>	: 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

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Labels : 9

### IMDG

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

### IATA (Cargo)

Packing instruction (cargo aircraft) : 964  
Packing instruction (LQ) : Y964  
Packing group : III  
Labels : Miscellaneous

### IATA (Passenger)

Packing instruction (passenger aircraft) : 964  
Packing instruction (LQ) : Y964  
Packing group : III  
Labels : Miscellaneous

## 14.5 Environmental hazards

### ADN

Environmentally hazardous : yes

### ADR

Environmentally hazardous : yes

### 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) : 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.

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REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles (Annex XVII) : Conditions of restriction for the following entries should be considered:

Number on list 75, 3

If you intend to use this product as tattoo ink, please 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. E2 ENVIRONMENTAL HAZARDS

Water hazard class (Germany) : WGK 2 obviously hazardous to water  
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.

### The components 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

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 : On or in compliance with the active portion of the TSCA inventory

### Inventories

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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.
H312	: Harmful in contact with skin.
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.

### 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 TRGS 900	: Germany. TRGS 900 - Occupational exposure limit values.
DE TRGS 900 / AGW	: Time Weighted Average

### Further information

#### Classification of the mixture:

Skin Irrit. 2	H315
Eye Dam. 1	H318
Skin Sens. 1	H317
Aquatic Chronic 2	H411

#### Classification procedure:

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

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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.

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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