

# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

**HUNTSMAN**

Enriching lives through innovation

## ARALDITE® 2011 HARDENER

|         |                |              |                                 |
|---------|----------------|--------------|---------------------------------|
| Version | Revision Date: | SDS Number:  | Date of last issue: 24.01.2018  |
| 1.2     | 27.09.2021     | 400001015904 | Date of first issue: 23.01.2018 |

Print Date 16.01.2023

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

#### 1.1 Product identifier

Trade name : ARALDITE® 2011 HARDENER

Unique Formula Identifier (UFI) : ETE2-200N-1009-XXE9

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

Use of the Substance/Mixture : Hardener

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

Company : Huntsman Advanced Materials (Europe)BVBA  
Address : Everslaan 45  
3078 Everberg  
Belgium  
Telephone : +41 61 299 20 41  
Telefax : +41 61 299 20 40

E-mail address of person responsible for the SDS : Global\_Product\_EHS\_AdMat@huntsman.com

#### 1.4 Emergency telephone number

Emergency telephone number : 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 corrosion, Sub-category 1C H314: Causes severe skin burns and eye damage.

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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.

### 2.2 Label elements

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

Hazard pictograms

:



Signal word

: Danger

Hazard statements

: H314  
H317

Causes severe skin burns and eye damage.  
May cause an allergic skin reaction.

Precautionary statements

: **Prevention:**

P261  
P280

Avoid breathing mist or vapours.  
Wear protective gloves/ protective clothing/  
eye protection/ face protection/ hearing  
protection.

#### **Response:**

P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do  
NOT induce vomiting.

P303 + P361 + P353 IF ON SKIN (or hair): Take off  
immediately all contaminated clothing.  
Rinse skin with water.

P304 + P340 + P310 IF INHALED: Remove person to fresh  
air and keep comfortable for breathing.  
Immediately call a POISON CENTER/  
doctor.

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.

Hazardous components which must be listed on the label:

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

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.

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

Chemical nature : Polyamines

#### Hazardous components

| Chemical name  | CAS-No.<br>EC-No.<br>Index-No.<br>Registration number | Classification   | Concentration<br>(% w/w) |
|--|---|--|--------------------------|
| N'-(3-aminopropyl)-N,N-dimethylpropane-1,3-diamine       | 10563-29-8<br>234-148-4<br>01-2119970376-29           | Acute Tox. 4; H302<br>Skin Corr. 1A; H314<br>Eye Dam. 1; H318<br>Skin Sens. 1B; H317   | >= 5 - < 9,65            |
| Amines, polyethylenepoly-, triethylenetetramine fraction | 90640-67-8<br>292-588-2<br>01-2119487919-13           | Acute Tox. 4; H302<br>Acute Tox. 4; H312<br>Skin Corr. 1B; H314<br>Eye Dam. 1; H318<br>Skin Sens. 1; H317<br>Aquatic Chronic 3; H412<br>EUH071 | >= 3 - < 5               |

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 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.

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- In case of skin contact : Immediate medical treatment is necessary as untreated wounds from corrosion of the skin heal slowly and with difficulty.  
If on skin, rinse well with water.  
If on clothes, remove clothes.
- In case of eye contact : Small amounts splashed into eyes can cause irreversible tissue damage and blindness.  
In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.  
Continue rinsing eyes during transport to hospital.  
Remove contact lenses.  
Keep eye wide open while rinsing.  
If eye irritation persists, consult a specialist.
- If swallowed : Keep respiratory tract clear.  
Do NOT induce vomiting.  
Never give anything by mouth to an unconscious person.  
If symptoms persist, call a physician.  
Take victim immediately to hospital.

### 4.2 Most important symptoms and effects, both acute and delayed

None known.

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

Treatment : Treat symptomatically.

## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

Suitable extinguishing media : 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 products : No hazardous combustion products are known

### 5.3 Advice for firefighters

Special protective equipment for firefighters : Wear self-contained breathing apparatus for firefighting if necessary.

Specific extinguishing : Use extinguishing measures that are appropriate to local

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methods

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.  
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.

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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. Observe label precautions. Keep in properly labelled containers.

Advice on common storage : Do not store near acids.

Storage class (TRGS 510) : 8A, Combustible, corrosive hazardous materials

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      |
|--|-----------|-----------------|----------------------------|------------|
| 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  |
| Amines, polyethylenepoly-,                         | Workers   | Inhalation      | Long-term systemic effects | 0,54 mg/m3 |

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|                               |           |            |                            |                 |
|-------------------------------|-----------|------------|----------------------------|-----------------|
| triethylenetetramine fraction |           |            |                            |                 |
|                               | Consumers | Inhalation | Long-term systemic effects | 0,096 mg/m3     |
|                               | 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                          |
|--|---------------------------|--------------------------------|
| N'-(3-aminopropyl)-N,N-dimethylpropane-1,3-diamine       | Marine water              | 0,92 µg/l                      |
|  | Freshwater - intermittent | 92 µg/l                        |
|  | Sewage treatment plant    | 18,1 mg/l                      |
|  | Fresh water sediment      | 0,0336 mg/kg dry weight (d.w.) |
|  | Marine sediment           | 0,0034 mg/kg dry weight (d.w.) |
|  | Soil                      | 0,0013 mg/kg dry weight (d.w.) |
| 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 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

Remarks : Chemical-resistant, impervious gloves complying with an

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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<br>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<br>Equipment should conform to EN 14387 |
| Filter type              | : | Organic vapour type (A)  |

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

|  |   |   |
|--|---|---|
| Physical state                                   | : | liquid                                      |
| Colour   | : | light yellow                                |
| Odour  | : | slight                                      |
| Odour Threshold                                  | : | No data is available on the product itself. |
| pH   | : | 11<br>Concentration: 50 %                   |
| Melting point                                    | : | No data available                           |
| Boiling point                                    | : | > 200 °C                                    |
| Flash point                                      | : | 110 °C<br>Method: Pensky-Martens closed cup |
| Flammability (solid, gas)                        | : | 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                                  | : | 0,04 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  | : | 0,95 g/cm <sup>3</sup> (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 : 20 000 - 35 000 mPa.s (25 °C)

### 9.2 Other information

Explosive properties : No data is available on the product itself.

Oxidizing properties : No data is available on the product itself.

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

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

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 : None known.

### 10.6 Hazardous decomposition products

No decomposition if stored and applied as directed.

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### SECTION 11: Toxicological information

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

##### Acute toxicity

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

##### Components:

Amines, polyethylenepoly-, triethylenetetramine fraction:

Acute inhalation toxicity : (Rat, male and female): Exposure time: 8 h  
Test atmosphere: vapour  
Method: OECD Test Guideline 403

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

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

##### Skin corrosion/irritation

##### Product:

Result: Corrosive after 1 to 4 hours of exposure

##### Serious eye damage/eye irritation

##### Product:

Species: Rabbit  
Assessment: Corrosive  
Result: Corrosive

##### Respiratory or skin sensitisation

##### Components:

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

Test Type: Maximisation Test

Exposure routes: Skin

Species: Guinea pig

Method: OECD Test Guideline 406

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

GLP: yes

Amines, polyethylenepoly-, triethylenetetramine fraction:

Exposure routes: Skin

Species: Humans

Assessment: Probability or evidence of skin sensitisation in humans

Result: Probability or evidence of skin sensitisation in humans

Assessment: No data available

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### Germ cell mutagenicity

#### Components:

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

Genotoxicity in vitro : Test Type: in vitro assay  
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 typhimurium and E. coli  
Metabolic activation: with and without metabolic activation  
Method: OECD Test Guideline 471  
Result: negative

Amines, polyethylenepoly-, triethylenetetramine fraction:

Genotoxicity in vitro : Test Type: In vitro mammalian cell gene mutation test  
Test system: Chinese hamster ovary cells  
Metabolic activation: with and without metabolic activation  
Method: OECD Test Guideline 476  
Result: positive

#### Components:

Amines, polyethylenepoly-, triethylenetetramine fraction:

Genotoxicity in vivo : Test Type: In vivo micronucleus test  
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

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Germ cell mutagenicity- : No data available  
Assessment

### Carcinogenicity

#### 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

No observed adverse effect level:  $\geq 56,3$  mg/kg body weight

Result: negative

Remarks: Information given is based on data obtained from similar substances.

Amines, polyethylenepoly-, triethylenetetramine fraction:

Species: Mouse, male

Dose: 42 mg/kg

Frequency of Treatment: 3 daily

No observed adverse effect level:  $\geq 50$  mg/kg bw/day

Method: OECD Test Guideline 451

Result: negative

Species: Mouse, male

Application Route: Dermal

Exposure time: 104 weeks

Dose: 16.8 mg/kg

Frequency of Treatment: 3 daily

No observed adverse effect level:  $\geq 20$  mg/kg bw/day

Method: OECD Test Guideline 451

Carcinogenicity - : No data available  
Assessment

### Reproductive toxicity

#### Components:

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: No observed adverse effect level: 15 mg/kg body weight  
General Toxicity F1: No observed adverse effect level: 15 mg/kg body weight  
Method: OECD Test Guideline 422  
Result: Animal testing did not show any effects on fertility.  
GLP: yes

#### Components:

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

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Effects on foetal development : Species: Rat, male and female  
Application Route: Oral  
Dose: 5, 15 and 50 mg/kg bw/d  
General Toxicity Maternal: No observed adverse effect level:  
15 mg/kg body weight  
Method: OECD Test Guideline 422  
Result: Not classified  
GLP: yes

Amines, polyethylenepoly-, triethylenetetramine fraction:  
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: No observed adverse effect level:  
>= 750 mg/kg body weight  
Developmental Toxicity: No observed adverse effect level: >=  
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: No observed adverse effect level:  
50 mg/kg body weight  
Developmental Toxicity: No observed adverse effect level: >=  
125 mg/kg body weight  
Method: OECD Test Guideline 414  
Result: No teratogenic effects

### Components:

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

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

Amines, polyethylenepoly-, triethylenetetramine fraction:

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

### **STOT - single exposure**

No data available

### **STOT - repeated exposure**

No data available

### **Repeated dose toxicity**

### Components:

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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 w 6 h Number of exposures: 5 d/w

Dose: 550 mg/m<sup>3</sup>

Method: Subchronic toxicity

Remarks: Based on data from similar materials

Species: Mouse, male

NOAEL:  $\geq$  56,3

Application Route: Skin contact

Number of exposures: 3 d

Method: Chronic toxicity

Remarks: Based on data from similar materials

Species: Rat, male and female

NOAEL: 1000

Application Route: Oral

Exposure time: 90 d Method: OECD Test Guideline 408

Remarks: Based on data from similar materials

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

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

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Exposure time: 120/600/3000 ppm Method: OECD Test Guideline 408

Remarks: Information given is based on data obtained from similar substances.

Repeated dose toxicity - : No data available  
Assessment

### Aspiration toxicity

No data available

## 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

General Information: No data available

Inhalation: No data available

Skin contact: No data available

Eye contact: No data available

Ingestion: No data available

### Toxicology, Metabolism, Distribution

No data available

### Neurological effects

No data available

### Further information

Ingestion: No data available

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### SECTION 12: Ecological information

#### 12.1 Toxicity

##### Components:

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  
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  
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  
Test substance: Fresh water  
Method: DIN 38 412 Part 8  
GLP: no

Amines, polyethylenepoly-, triethylenetetramine fraction:

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

Toxicity to daphnia and other : EC50 (Daphnia magna (Water flea)): 31,1 mg/l

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|  |  |
|--|--|
| aquatic invertebrates  | Exposure time: 48 h<br>Test Type: static test<br>Test substance: Fresh water<br>Method: Directive 67/548/EEC, Annex V, C.2.  |
| Toxicity to algae/aquatic plants                                       | : ErC50 (Selenastrum capricornutum (green algae)): 20 mg/l<br>Exposure time: 72 h<br>Test Type: semi-static test<br>Test substance: Fresh water<br>Method: OECD Test Guideline 201<br><br>EC10 (Selenastrum capricornutum (green algae)): 1,34 mg/l<br>Exposure time: 72 h<br>Test Type: semi-static test<br>Test substance: Fresh water<br>Method: OECD Test Guideline 201  |
| Toxicity to microorganisms   | : NOEC (Bacteria): $\geq$ 100 mg/l<br>Exposure time: 28 d<br>Method: OECD Test Guideline 216<br><br>EC50 (Bacteria): $>$ 100 mg/l<br>Exposure time: 28 h<br>Method: OECD Test Guideline 216<br><br>EC50 (Bacteria): 15,7 mg/l<br>Exposure time: 2 h<br>Test Type: static test<br>Test substance: Fresh water<br><br>NOEC (Bacteria): 1,3 mg/l<br>Exposure time: 2 h<br>Test Type: static test<br>Test substance: Fresh water |
| Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) | : EC10: 1,9 mg/l<br>Exposure time: 21 d<br>Species: Daphnia magna (Water flea)<br>Test Type: semi-static test<br>Test substance: Fresh water<br>Method: OECD Test Guideline 202  |
| Toxicity to soil dwelling organisms                                    | : NOEC: ca. 1 000 mg/kg<br>Exposure time: 56 d<br>Species: Eisenia fetida (earthworms)<br>Method: OECD Test Guideline 222<br><br>EC50: $>$ 1 000 mg/kg<br>Exposure time: 56 d<br>Species: Eisenia fetida (earthworms)<br>Method: OECD Test Guideline 222   |
| Ecotoxicology Assessment<br>Acute aquatic toxicity                     | : This product has no known ecotoxicological effects.  |

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

### 12.2 Persistence and degradability

#### Components:

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  
GLP: yes

Amines, polyethylenepoly-, triethylenetetramine fraction:

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

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

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

### 12.3 Bioaccumulative potential

#### Components:

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

Partition coefficient: n-octanol/water : log Pow: -0,56 (25 °C)  
pH: 11,6  
Method: OECD Test Guideline 107

Amines, polyethylenepoly-, triethylenetetramine fraction:

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: 1584,9 - 5012  
Method: OECD Test Guideline 106

### 12.5 Results of PBT and vPvB assessment

#### Product:

Assessment : This substance/mixture contains no components considered

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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.  
Harmful to aquatic life.

## 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 2735 |
| ADR  | : UN 2735 |
| RID  | : UN 2735 |
| IMDG | : UN 2735 |
| IATA | : UN 2735 |

### 14.2 UN proper shipping name

|     |  |
|-----|--|
| ADN | : POLYAMINES, LIQUID, CORROSIVE, N.O.S.<br>(DIMETHYL DIPROPYL TRIAMINE, TRIETHYLENE TETRAMINE) |
| ADR | : POLYAMINES, LIQUID, CORROSIVE, N.O.S.<br>(DIMETHYL DIPROPYL TRIAMINE, TRIETHYLENE            |

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**RID** : TETRAMINE)  
POLYAMINES, LIQUID, CORROSIVE, N.O.S.  
(DIMETHYL DIPROPYL TRIAMINE, TRIETHYLENE  
TETRAMINE)

**IMDG** : POLYAMINES, LIQUID, CORROSIVE, N.O.S.  
(DIMETHYL DIPROPYL TRIAMINE, TRIETHYLENE  
TETRAMINE)

**IATA** : Polyamines, liquid, corrosive, n.o.s.  
(DIMETHYL DIPROPYL TRIAMINE, TRIETHYLENE  
TETRAMINE)

### 14.3 Transport hazard class(es)

**ADN** : 8

**ADR** : 8

**RID** : 8

**IMDG** : 8

**IATA** : 8

### 14.4 Packing group

**ADN**

Packing group : III

Classification Code : C7

Hazard Identification Number : 80

Labels : 8

**ADR**

Packing group : III

Classification Code : C7

Hazard Identification Number : 80

Labels : 8

Tunnel restriction code : (E)

**RID**

Packing group : III

Classification Code : C7

Hazard Identification Number : 80

Labels : 8

**IMDG**

Packing group : III

Labels : 8

EmS Code : F-A, S-B

**IATA (Cargo)**

Packing instruction (cargo aircraft) : 856

Packing instruction (LQ) : Y841

Packing group : III

Labels : Corrosive

**IATA (Passenger)**

Packing instruction (passenger aircraft) : 852

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Packing instruction (LQ) : Y841  
Packing group : III  
Labels : Corrosive

### 14.5 Environmental hazards

#### ADN

Environmentally hazardous : no

#### ADR

Environmentally hazardous : no

#### RID

Environmentally hazardous : no

#### IMDG

Marine pollutant : no

### 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 (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

Water hazard class (Germany) : WGK 1 slightly 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 : This product contains one or several components listed in the Canadian NDSL.

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

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

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

KECI : Not 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), AIIIC (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.                      |
| H314   | : Causes severe skin burns and eye damage.           |
| H317   | : May cause an allergic skin reaction.               |
| H318   | : Causes serious eye damage.                         |
| H412   | : Harmful to aquatic life with long lasting effects. |
| EUH071 | : Corrosive to the respiratory tract.                |

### Full text of other abbreviations

|                 |                            |
|-----------------|----------------------------|
| Acute Tox.      | : Acute toxicity           |
| Aquatic Chronic | : Chronic aquatic toxicity |
| Eye Dam.        | : Serious eye damage       |
| Skin Corr.      | : Skin corrosion           |
| Skin Sens.      | : Skin sensitisation       |

### Further information

Classification of the mixture:

Classification procedure:

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|               |      |                                     |
|---------------|------|-------------------------------------|
| Skin Corr. 1C | H314 | Based on product data or assessment |
| Eye Dam. 1    | H318 | Based on product data or assessment |
| Skin Sens. 1  | H317 | Calculation method                  |

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