

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

HUNTSMAN

Enriching lives through innovation

ARALDITE® 2011 HARDENER

Version	Revised on:	SDS number:	Date of the last issue: 24.01.2018
1.1	27.09.2021	400001015904	Date of the first issue: 24.01.2018

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

1.1 Product identifier

Trade name : ARALDITE® 2011 HARDENER

Clearer : ETE2-200N-1009-XXE9

Recipe identifier (UFI)

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

Use of the substance/substance Mixture : Harde ner

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

Fax : +41 61 299 20 40

E-mail address of the person responsible for SDB responsible person : Global_Product_EHS_AdMat@huntsman.com

1.4 Emergency number

Emergency 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
Munich: 0049 89 19 24 0
Nuremberg: 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: Potential hazards

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No

Skin corrosion, subcategory
1C

H314: Causes severe skin burns
and severe eye damage.

Serious eye damage, category 1

H318: Causes serious eye damage.

Sensitization through skin contact,
Category 1

H317: May cause an allergic skin
reaction
cause.

2.2 Labeling elements

Labeling (REGULATION (EC) No 1272/2008)

Hazard pictograms

:



Signal word

: Danger

Hazard warnings

:

H314 Causes severe skin burns and eye
damage.
H317 May cause an allergic skin
reaction.

Safety instructions

: **Prevention:**

P261 Avoid breathing mist or vapor.

P280 Wear protective gloves/ protective clothing/ eye
protection/ face protection/ hearing
protection.

Reaction:

P301 + P330 +

P331 If SWALLOWED: Mouth
Rinse out. DO NOT induce vomiting.

P303 + P361 +

P353 IN CONTACT WITH THE SKIN
(or the hair): Remove all contaminated
clothing immediately. Wash skin with water.
Remove the person to the nearest

P304 + P340 +

P310 IF INHALED:

Move to fresh air and ensure unobstructed
breathing. Immediately call a POISON
CENTER/doctor
call.

P305 + P351 + P338 + P310 IN CONTACT WITH THE
EYES:

Rinse cautiously with water for several
minutes. Remove any contact lenses if
possible. Continue rinsing. Immediately
POISON CENTER/doctor
call.

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Hazard-determining component(s) for labeling:

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

Amine, polyethylene poly-, triethylenetetramine portion

2.3 Other dangers

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.

Environmental information: The substance/mixture does not contain components with endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated Regulation (EU) 2017/2100 or Commission Delegated Regulation (EU) 2018/605 in quantities of 0.1% or more.

Toxicological information: The substance/mixture does not contain components with endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated Regulation (EU) 2017/2100 or Commission Delegated Regulation (EU) 2018/605 in quantities of 0.1% or more.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Chemical : Polyamins
Characterization

Hazardous ingredients

Chemical name	CAS No. EC No. INDEX- No. Registration number	Classification	Concentration (% w/w)
N'-(3-aminopropyl)-n,n-dimethylpropane-1,3-diamine	10563-29-8 234-148-4 01-2119970376-29	Acute Tox. 4; H302 Skin Corr. 1A; H314 Eye Dam. 1; H318 Skin Sens. 1B; H317	>= 5 - < 9,65
Amine, polyethylene poly-, triethylenetetramine content	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 EUH071	>= 3 - < 5

An explanation of the abbreviations can be found in section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General information : Remove affected persons from the danger zone.

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Consult a doctor.
Show this safety data sheet to the attending physician.
Symptomatic treatment.
If symptoms occur, seek medical attention.

Protection of first responders : First aiders should pay attention to self-protection and wear the recommended protective clothing
If there is a risk of exposure, see section 8 regarding personal protective equipment.
Avoid inhalation, ingestion and contact with skin and eyes.
No measures should be taken that involve personal risk or that have not been sufficiently trained.
It can be dangerous for the person providing first aid to perform mouth-to-mouth resuscitation.

After inhalation : In case of inhalation, move to fresh air.
If symptoms occur, seek medical attention.

After skin contact : Immediate medical treatment is necessary, as untreated burns lead to wounds that are difficult to heal.
If on skin, rinse well with water. If on clothing, remove clothing.

After eye contact : Small splashes in the eyes can cause irreversible tissue damage and blindness.
In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Continue to rinse eyes during transportation to hospital.
Remove contact lenses.
Keep your eyes wide open when rinsing.
If eye irritation persists, consult a specialist.

After ingestion : Keep airways clear.
DO NOT induce vomiting.
Never give anything by mouth to an unconscious person.
If symptoms persist, consult a doctor. Take the patient to a hospital immediately.

4.2 Most important symptoms and effects, both acute and delayed

None known.

4.3 Information on immediate medical assistance or special treatment

Treatment : Symptomatic treatment.

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SECTION 5: Fire-fighting measures

5.1 Extinguishing agent

Suitable extinguishing agents : Water mist Alcohol-resistant foam Carbon dioxide (CO₂) Dry extinguishing agent

Unsuitable extinguishing agents : Care must be taken when using a water jet to prevent the fire from scattering and spreading.

5.2 Special hazards arising from the substance or mixture

Particular dangers during Fire fighting : Do not discharge water from firefighting into the waste water or into watercourses.

Dangerous Combustion products : No known hazardous combustion products

5.3 Instructions for firefighting

Special Protective equipment for firefighting : In the event of fire, wear self-contained breathing apparatus if necessary.

Specific deletion methods : Adapt extinguishing measures to the surroundings.

Further information : Collect contaminated extinguishing water separately and do not allow it to enter the sewage system.
Fire residues and contaminated 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 data : Use personal protective equipment.
Precautionary measures : See protective measures under points 7 and 8.

6.2 Environmental protection measures

Environmental protection measures : Take precautions to ensure that the product does not enter the sewage system.
Prevent further leakage or spillage if this is possible without risk.
In the event of contamination of water bodies or the sewage system, inform the responsible authorities.

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6.3 Methods and material for retention and cleaning

Cleaning process : Neutralize with acid.
Absorb with inert liquid-binding material (e.g. sand, silica gel, acid binder, universal binder, sawdust).
Place in suitable and sealed containers for disposal.

6.4 Reference to other sections

See section 13 for disposal instructions, see section 1 for emergency contact information, see section 8 for personal protective equipment.

SECTION 7: Handling and storage

7.1 Protective measures for safe handling

Notes on safe handling : Repeated or prolonged skin contact may cause skin irritation and/or dermatitis, or sensitization in sensitive individuals.
In case of asthma, eczematous skin diseases or skin problems, avoid contact, including skin contact, with the product.
Do not inhale vapors/dust.
Avoid exposure - obtain special instructions before use.
Avoid contact with eyes and skin. For personal protective equipment see section 8.
Do not eat, drink or smoke in the application area. To protect against spillage, store the bottle on a metal tray during production.
Rinsing water must be disposed of in accordance with local and national regulations.

Notes on fire and explosion protection : Standard fire prevention measures.

Hygiene measures : Do not eat or drink at work. Do not smoking. Wash hands before breaks and at the end of work.

7.2 Conditions for safe storage, taking into account incompatibilities

Requirements for storage rooms and containers : Keep containers tightly closed in a dry, well-ventilated place.
Carefully close opened containers and store upright to prevent any leakage. Follow the instructions on the label.
Store in correctly labeled containers.

Storage instructions : Do not store together with acids.

Storage class (TRGS 510) : 8A, Flammable corrosive hazardous substances

Further information on the Storage stability : Stable under normal conditions.

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Recommended : 2 - 40 °C
Storage temperature

7.3 Specific end uses

Specific use(s) : No data available

SECTION 8: Exposure controls/personal protective equipment

8.1 Parameters to be monitored

Contains no substances with occupational exposure limits.

Derived no-effect level (DNEL) according to Regulation (EC) No 1907/2006:

Substance name	Application area	Exposure path e	Possible damage to health	Value
N'-(3-aminopropyl)-n,n-dimethylpropane-1,3-diamine	Employees	Inhalation	Long-term systemic effects	3.7 mg/m3
	Employees	Inhalation	Acute - systemic effects	7.5 mg/m3
	Employees	Inhalation	Long-term - local effects	3.7 mg/m3
	Employees	Inhalation	Acute - local effects	7.5 mg/m3
	Employees	Skin	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
Amine, polyethylene poly , Triethylenetetraminant ei l	Consumers	Oral	Long-term systemic effects	0.2 mg/kg
	Employees	Inhalation	Long-term systemic effects	0.54 mg/m3
	Consumers	Inhalation	Long-term systemic effects	0.096 mg/m3
	Consumers	Oral	Long-term systemic effects	14 mg/kg body weight/day

Estimated 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	Seawater	0.92 µg/l
	Fresh water - intermittent	92 µg/l
	Sewage treatment plant	18.1 mg/l

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	Freshwater sediment	0.0336 mg/kg dry weight (TW)
	Marine sediment	0.0034 mg/kg dry weight (TW)
	Floor	0.0013 mg/kg dry weight (TW)
Amine, polyethylene poly-, triethylenetetramine content	Fresh water	0.027 mg/l
	Seawater	0.003 mg/l
	Sewage treatment plant	0.13 mg/l
	Freshwater sediment	8.572 mg/kg dry weight (TW)
	Marine sediment	0.857 mg/kg dry weight (TW)
	Floor	1.25 mg/kg dry weight (TW)

8.2 Exposure controls Personal protective

equipment

Eye protection : Eyewash bottle with pure water Tight-fitting safety goggles
Wear a face shield and protective suit in case of processing difficulties.

Hand protection

Material : Butyl rubber
Breakthrough time : > 8 h

Material : Solvent-resistant protective gloves (butyl rubber)

Material : Nitrile rubber
Breakthrough time : 10 - 480 min

Notes : When handling chemical products, chemical-resistant, impermeable gloves that comply with a recognized standard must always be worn if a risk assessment requires this. The Workplace-specific suitability should be clarified with the protective glove manufacturers.

Skin and body protection : Impermeable protective clothing
Select body protection according to the quantity and concentration of the hazardous substance at the workplace.

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Respiratory protection : Use respiratory protection unless suitable local exhaust ventilation is available or an exposure assessment shows that exposure is within the relevant guidelines.
The equipment should comply with EN 14387

Filter type : Type organic vapors (A)

SECTION 9: Physical and chemical properties

9.1 Information on the basic physical and chemical properties

Physical state	: liquid
Color	: light yellow
Odor	: light
Odor threshold	: No data is available for the product itself.
pH value	: 11 Concentration: 50 %
Melting point	: No data available
Boiling point	: > 200 °C
Flash point	: 110 °C Method: Pensky-Martens closed crucible
Flammability (solid, gaseous)	: No data is available for the product itself.
Upper explosion limit / Upper flammability limit	: No data is available for the product itself.
Lower explosion limit / Lower flammability limit	: No data is available for the product itself.
Vapor pressure	: 0.04 hPa (20 °C)
Relative vapor density	: No data is available for the product itself.
Relative density	: No data is available for the product itself.
Density	: 0.95 g/cm ³ (25 °C)
Solubility(ies) Water solubility	: practically insoluble (20 °C)
Solubility in other	: No data is available for the product itself.

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Solvents

Partition coefficient: n-Octanol/water : No data is available for the product itself.

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

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

Burning speed : No data is available for the product itself.

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

Molecular weight : No data available

SECTION 10: Stability and reactivity

10.1 Reactivity

No hazardous reactions known if handled as directed.

10.2 Chemical stability

Stable under normal conditions.

10.3 Possibility of hazardous reactions

Dangerous reactions : No dangers worth mentioning.

10.4 Conditions to avoid

Conditions to avoid : None known.

10.5 Incompatible materials

Substances to avoid : None known.

10.6 Hazardous decomposition products

No decomposition if stored and used as intended.

SECTION 11: Toxicological information

11.1 Information on hazard classes according to Regulation (EC) No 1272/2008

Acute toxicity

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

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Ingredients:

Amine, polyethylene poly-, triethylenetetramine content:

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

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

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

Corrosive/irritant effect on the

skin Product:

Result: Corrosive after 1-4 hours of exposure

Serious eye damage/irritation Product:

Species: Rabbit

Assessment:

Corrosive Result:

Corrosive

Sensitization of the respiratory tract/skin

Ingredients:

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

Type of test: Maximization test

Route of exposure: Skin

Species: Guinea pig Method: OECD

Test Guideline 406

Result: The product is a skin sensitizing substance, subcategory 1B. GLP: yes

Amine, polyethylene poly-, triethylenetetramine content:

Route of exposure:

Skin Species: Humans

Assessment: Human skin sensitization probable or proven Result: Human skin
sensitization probable or proven

Rating: No data available

Germ cell mutagenicity

Ingredients:

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

Genotoxicity in vitro : Type of test: in vitro test
Test system: human lymphocytes

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Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 487 Result:
negative
GLP: yes

: Type of test: Back mutation assay Test
system: Salmonella typhimurium
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471 Result:
negative

: Type of test: In vitro gene mutation test on mammalian cells
Test system: Lymphoma cells from mice Metabolic activation:
with and without metabolic activation
Method: OECD Test Guideline 476 Result:
negative
GLP: yes

: Type of test: Back mutation assay Test system:
Salmonella typhimurium and E. coli
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471 Result:
negative

Amine, polyethylene poly-, triethylenetetramine content:

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

Ingredients:

Amine, polyethylene poly-, triethylenetetramine content:

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

Germ cell mutagenicity-
Rating : No data available

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Carcinogenicity

Ingredients:

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

Species: Mouse, male Route
of administration: Skin

Exposure time: 20 month(s)

Dose: 1.25/56.3 mg/animal

Frequency of treatment: 3 daily

Dose at which no adverse health effects were observed: ≥ 56.3 mg/kg body weight

Result: negative

Remarks: The information given is based on data for similar substances. Amine,

polyethylene poly-, triethylenetetramine content:

Species: Mouse, male Dose:

42 mg/kg

Frequency of treatment: 3 daily

Dose at which no adverse health effects were observed: ≥ 50 mg/kg body weight/day

Method: OECD Test Guideline 451 Result:

negative

Species: Mouse, male

Application route: Skin

Exposure time: 104 weeks

Dose: 16.8 mg/kg

Frequency of treatment: 3 daily

Dose at which no adverse health effects were observed: ≥ 20 mg/kg body weight/day

Method: OECD Test Guideline 451

Carcinogenicity - Assessment : No data available

Reproductive toxicity

Ingredients:

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

Effect on fertility : Test Type: Combined Repeated Dose Toxicity Study with the
Reproduction / Developmental Toxicity Screening Test
Species: Rat, male and female
Route of application: Oral
Dose: 5, 15 and 50 mg/kg bw/d
General toxicity Parents: Dose at which no adverse health
effects were observed: 15 mg/kg body weight
General toxicity F1: Dose at which no adverse health effects
were observed: 15 mg/kg body weight
Method: OECD Test Guideline 422
Result: The animal tests showed no effects on fertility.
GLP: yes

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Ingredients:

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

Effects on fetal development : Species: Rat, male and female
Route of administration: Oral
Dose: 5, 15 and 50 mg/kg bw/d
General maternal toxicity: Dose at which no adverse health effects were observed: 15 mg/kg body weight
Method: OECD Test Guideline 422
Result: Not classified
GLP: yes

Amine, polyethylene poly-, triethylenetetramine content:

Type of test: Prenatal
Species: Rat
Route of administration: Oral
Dose: 75/325/750 mg/kg bw/day
Duration of individual treatment: 10 d
General maternal toxicity: Dose at which no adverse health effects were observed: ≥ 750 mg/kg body weight
Developmental harm: Dose at which no adverse health effects were observed: ≥ 750 mg/kg body weight
Method: OECD Test Guideline 414
Result: No mutagenic effects.

Type of test: Prenatal
Species: Rabbit
Route of administration: Skin
Dose: 5/50/125 mg/kg bw/day
Duration of the individual treatment: 13 d
General maternal toxicity: Dose at which no adverse health effects were observed: 50 mg/kg body weight
Developmental harm: Dose at which no adverse health effects were observed: ≥ 125 mg/kg body weight
Method: OECD Test Guideline 414
Result: No mutagenic effects.

Ingredients:

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

Reproductive toxicity - Assessment : No evidence of adverse effect on sexual function and fertility or on growth from animal experiments.

Amine, polyethylene poly-, triethylenetetramine content:

Reproductive toxicity - Assessment : The reproductive toxic effects of triethylenetetramine (TETA) are further characterized as part of the content of Aminoethylethanolamine (AEEA).

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Specific target organ toxicity at single exposure

No data available

Specific target organ toxicity with repeated exposure

No data available

Repeated dose toxicity

Ingredients:

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

Species: Rat, male and female NOEC: 550

Application route: Inhalation

Test atmosphere: Vapor

Exposure time: 3 w 6 h Number of exposures: 5 d/w

Dose: 550 mg/m³

Method: Subchronic toxicity

Notes: Based on test data from similar materials

Species: Mouse, male

NOAEL: >= 56.3

Application route: Skin contact

Number of exposures: 3 d Method:

Chronic toxicity

Notes: Based on test data from similar materials

Species: Rat, male and female NOAEL:

1000

Route of application: Oral

Exposure time: 90 d Method: OECD Test Guideline 408 Remarks:

Based on test data from similar materials

Amine, polyethylene poly-, triethylenetetramine content:

Species: Rat, male and female NOAEL: 350

mg/kg

Route of application: 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: The information given is based on data for similar substances.

Species: Dog, male and female NOAEL:

125 mg/kg

Route of application: Oral

Remarks: The information given is based on data for similar substances.

Species: Dog, male and female NOAEL: 50

mg/kg

Route of application: Oral

Method: Subchronic toxicity

Remarks: The information given is based on data for similar substances.

Species: Rat, male and female

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NOAEL: 50 mg/kg
Route of administration: Oral
Exposure time: 26 weeks Dose: 50/175/600 mg/kg bw/day Method: OECD Test Guideline 408
Target organs: Lungs
Remarks: The information given is based on data for similar substances.

Species: Mouse, male and female NOAEL: 92 mg/kg, 600 ppm Route of administration: Oral
Exposure time: 120/600/3000 ppm Method: OECD Test Guideline 408 Remarks: The information given is based on data for similar substances.

Repeated dose toxicity : No data available
Administration - Evaluation

Aspiration toxicity

No data available

11.2 Information on other hazards

Endocrine disrupting properties

Product:

Rating : The substance/mixture does not contain components that are subject to REACH Article 57(f) or Commission Delegated Regulation (EU) 2017/2100 or Commission Delegated Regulation (EU) 2018/605 in quantities of 0.1 % or more have endocrine-disrupting properties.

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

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Neurological effects

No data available

Further information

Ingestion: No data available

SECTION 12: Environmental information

12.1 Toxicity

Ingredients:

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

Toxicity to fish	: LC50 (Brachydanio rerio (zebrafish)): > 100 mg/l Exposure time: 96 h Type of test: static test Concomitant analysis: yes Test substance: fresh water Method: OECD Test Guideline 203 GLP: yes
Toxicity to daphnia and other aquatic invertebrates	: EC50 (Daphnia magna (Large water flea)): 9.2 mg/l Exposure time: 48 h Type of test: static test Concomitant analysis: 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 Type of test: static test Concomitant analysis: yes Test substance: fresh water Method: OECD Test Guideline 201 GLP: yes NOEC (Selenastrum capricornutum (green alga)): 5.7 mg/l Exposure time: 72 h Type of test: static test Concomitant analysis: yes Test substance: fresh water Method: OECD Test Guideline 201 GLP: yes
Toxicity with microorganisms	: EC50 (Pseudomonas putida): 181 mg/l Exposure time: 16 h Type of test: static test Concomitant analysis: no Test substance: fresh water Method: DIN 38 412 Part 8 GLP: no

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Amine, polyethylene poly-, triethylenetetramine content:

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

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Large water flea)): 31.1 mg/l
Exposure time: 48 h
Type of test: 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
Type of test: semistatic test Test
substance: fresh water Method:
OECD Test Guideline 201

EC10 (Selenastrum capricornutum (green alga)): 1.34 mg/l
Exposure time: 72 h
Type of test: semistatic test
Test substance: Freshwater
Method: OECD Test Guideline 201

Toxicity with microorganisms : NOEC (bacteria): ≥ 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
Exposure time: 2 h
Type of test: static test Test
substance: fresh water

NOEC (bacteria): 1.3 mg/l
Exposure time: 2 h
Type of test: 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 (large water flea)
Type of test: semistatic test Test substance:
fresh water
Method: OECD Test Guideline 202

Toxicity to soil organisms : NOEC: approx. 1 000 mg/kg
Exposure time: 56 d
Species: Eisenia fetida (earthworms)
Method: OECD Test Guideline 222

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EC50: > 1 000 mg/kg
Exposure time: 56 d
Species: Eisenia fetida (earthworms)
Method: OECD Test Guideline 222

Assessment of ecotoxicity
Acute aquatic toxicity : No ecotoxicological effects are known from this product.

Chronic aquatic toxicity : Harmful to aquatic organisms, with long lasting effects.

12.2 Persistence and

degradability Ingredients:

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

Biodegradability : Type of test: aerobic
Result: Easily biodegradable.
Biodegradation: 100 %
In relation to: Dissolved organic carbon (DOC)
Exposure time: 28 d
Method: OECD Test Guideline 301 A
GLP: yes

Amine, polyethylene poly-, triethylenetetramine content:

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

Type of test: aerobic
Inoculation culture:
activated sludge
Result: Not potentially biodegradable.
Biodegradation: 20 %
In relation to: Dissolved organic carbon (DOC)
Exposure time: 84 d
Method: OECD Test Guideline 302A

Chemical oxygen demand (CSB) : 1 940 mg/g

12.3 Bioaccumulative potential

Ingredients:

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

Partition coefficient: n-octanol/water : log Pow: -0.56 (25 °C)
pH value: 11.6
Method: OECD Test Guideline 107

Amine, polyethylene poly-, triethylenetetramine content:

Partition coefficient: n-Octanol/water : log Pow: -2.08 - 2.90 (20 °C)
Method: QSAR

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12.4 Mobility in soil

Ingredients:

Amine, polyethylene poly-, triethylenetetramine content:

Distribution between the	: Koc: 1584.9 - 5012
Environmental	Method: OECD Test Guideline
compartments	106

12.5 Results of PBT and vPvB assessment

Product:

Rating	: This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent, bioaccumulative and toxic (VBO) at levels of 0.1% or higher.
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12.6 Endocrine disrupting properties

Product:

Rating	: The substance/mixture does not contain components that are endocrine disruptors according to REACH Article 57(f) or Commission Delegated Regulation (EU) 2017/2100 or Commission Delegated Regulation (EU) 2018/605 in quantities of 0.1% or more. have.
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12.7 Other adverse effects

Product:

Other ecological information	: An environmental hazard cannot be ruled out in the event of improper handling or disposal. Harmful to aquatic organisms.
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SECTION 13: Disposal instructions

13.1 Waste treatment processes

Product	: Dispose of contents and container in accordance with all local, regional, national and international laws. Do not pour waste down the sink. Do not contaminate standing or flowing water with chemical or packaging material.
Contaminated packaging	: Empty leftovers. Dispose of as unused product. Do not reuse empty containers.

SECTION 14: Transport information

14.1 UN number or ID number

ADN	: UN 2735
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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. (DIMETHYL DIPROPYL TRIAMINE, TRIETHYLENE TETRAMINE)
ADR	:	POLYAMINES, LIQUID, CORROSIVE, N.O.S. (DIMETHYL DIPROPYL TRIAMINE, TRIETHYLENE TETRAMINE)
RID	:	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 classes

ADN	:	8
ADR	:	8
RID	:	8
IMDG	:	8
IATA	:	8

14.4 Packaging group

ADN		
Packaging group	:	III
Classification code	:	C7
Number for identification the danger	:	80
Hazard label	:	8
ADR		
Packaging group	:	III
Classification code	:	C7
Number for identification the danger	:	80
Hazard label	:	8
Tunnel restriction code	:	(E)
RID		
Packaging group	:	III
Classification code	:	C7
Number for identification	:	80

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the danger

Hazard label : 8

IMDG

Packaging group : III

Hazard label : 8

EmS code : F-A, S-B

IATA (freight)

Packaging instructions
(cargo plane) : 856

Packaging instructions (LQ) : Y841

Packaging group : III

Hazard label : Corrosive

IATA (Passenger)

Packing instructions
(passenger aircraft) : 852

Packaging instructions (LQ) : Y841

Packaging group : III

Hazard label : 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 the user

The transport classification(s) provided herein are for informational purposes only and are based solely on the properties of the unpackaged material as described in this safety data sheet. Transport classifications may vary with the means of transportation, package size and variations in regional or country regulations.

14.7 Transport of bulk goods by sea in accordance with IMO instruments

Not applicable to product as delivered.

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SECTION 15: Legislation

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

REACH - List of substances subject to authorization (Annex XIV) : Not applicable

REACH - List of substances of very high concern for authorization (Article 59). : This product does not contain any substances of very high concern. substances (REACH Regulation (EC) No. 1907/2006, 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.

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Not applicable

Water hazard class : WGK 1 slightly hazardous to water
Classification according to AwSV,
Annex 1 (5.2)

Other regulations:

Observe employment restrictions in accordance with Directive 94/33/EC on the protection of young people at work or stricter national provisions, where applicable.

The components of this product are listed in the following directories:

DSL	: This product contains one or more ingredients that are on the Canadian NDSL list.
AIIC	: Is on the list or fulfills its requirements
NZIoC	: Is on the list or fulfills its requirements
ENCS	: Is on the list or fulfills its requirements
KECI	: Does not meet the requirements of the list
PICCS	: Does not meet the requirements of the list
IECSC	: Is on the list or fulfills its requirements
TCSI	: Is on the list or fulfills its requirements
TSCA	: All substances are listed as active in the TSCA inventory. listed

Directories

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

The substance evaluations for all substances in this product have either been completed or do not apply.

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SECTION 16: Other information

Full text of the H-phrases

H302	: Harmful if swallowed.
H312	: Harmful in contact with skin.
H314	: Causes severe skin burns and severe skin irritation.
	Eye damage.
H317	: May cause allergic skin reactions.
H318	: Causes serious eye damage.
H412	: Harmful to aquatic organisms, with long lasting effects.
EUH071	: Has a corrosive effect on the respiratory tract.

Full text of other abbreviations

Acute Tox.	: Acute toxicity
Aquatic Chronic	: Long-term (chronic) water hazard
Eye Dam.	: Severe eye damage
Skin Corr.	: Corrosive effect on the skin
Skin Sens.	: Sensitization through skin contact

Further information

Classification of the mixture:

Skin Corr. 1C	H314
Eye Dam. 1	H318
Skin Sens. 1	H317

Classification procedure:

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

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The hazards, toxicity and behavior of the products may change when used with other materials and depend on the manufacturing process or other processes. Hazards, toxicity and behavior must be determined by the user and communicated to all those who transport, process or use the products as end users.

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