

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

HUNTSMAN

Enriching lives through innovation

ARADUR® 3474 BD

Version	Revision Date:	SDS Number:	Date of last issue: 24.07.2019
3.0	12.07.2023	400000000749	Date of first issue: 24.08.2015

Print Date 17.05.2024

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

1.1 Product identifier

Trade name : ARADUR® 3474 BD

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

Use of the : Hardener
Substance/Mixture

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 : Global_Product_EHS_AdMat@huntsman.com
responsible for the SDS

1.4 Emergency telephone number

Emergency telephone number : Centres Antipoison et de Toxicovigilance:
ANGERS: 02 41 48 21 21
BORDEAUX: 05 56 96 40 80
LILLE: 0 825 812 822
LYON: 04 72 11 69 11
MARSEILLE 04 91 75 25 25
NANCY: 03 83 32 36 36
PARIS: 01 40 05 48 48
RENNES: 02 99 59 22 22
STRASBOURG: 03 88 37 37 37
TOULOUSE: 05 61 77 74 47
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)

Acute toxicity, Category 4 H302: Harmful if swallowed.

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Skin corrosion, Sub-category 1B	H314: Causes severe skin burns and eye damage.
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	:	H302 Harmful if swallowed. H314 Causes severe skin burns and eye damage. H317 May cause an allergic skin reaction.
Precautionary statements	:	Prevention: P261 Avoid breathing mist or vapours. P280 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:

3-aminomethyl-3,5,5-trimethylcyclohexylamine
Reaction products of di-, tri- and tetra-propoxylated propane-1,2-diol with ammonia

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

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

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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)
3-aminomethyl-3,5,5-trimethylcyclohexylamine	2855-13-2 220-666-8 612-067-00-9 01-2119514687-32	Acute Tox. 4; H302 Skin Corr. 1B; H314 Eye Dam. 1; H318 Skin Sens. 1A; H317 specific concentration limit Skin Sens. 1A; H317 ≥ 0,001 % Acute toxicity estimate Acute oral toxicity: 1 030 mg/kg	≥ 70 - < 90
Reaction products of di-, tri- and tetra-propoxylated propane-1,2-diol with ammonia	- - 01-2119557899-12	Skin Corr. 1C; H314 Eye Dam. 1; H318 Aquatic Chronic 3; H412	≥ 10 - < 20

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 : Clean mouth with water and drink afterwards plenty of water.
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 (CO₂)
Dry chemical

Unsuitable extinguishing media : Exercise caution when using a high volume water jet as it may scatter and spread fire

5.2 Special hazards arising from the substance or mixture

Specific hazards during firefighting : Do not allow run-off from fire fighting to enter drains or water courses.

Hazardous combustion products : Carbon oxides
Nitrogen oxides (NO_x)

5.3 Advice for firefighters

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

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for firefighters

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.
For safety reasons in case of fire, cans should be stored separately in closed containments.
Use a water spray to cool fully closed containers.

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

: Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).
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

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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 : Do not spray on a naked flame or any incandescent material. Keep away from open flames, hot surfaces and sources of ignition.

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 : No smoking. Keep in a 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 : For incompatible materials please refer to Section 10 of this SDS.

Further information on storage stability : Stable under normal conditions.

Recommended storage temperature : 2 - 40 °C

7.3 Specific end use(s)

Specific use(s) : No data available

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Contains no substances with occupational exposure limit values.

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

Substance name	End Use	Exposure routes	Potential health effects	Value
Reaction products of di-, tri- and tetra-propoxylated propane-1,2-diol with ammonia	Workers	Inhalation	Long-term systemic effects	5,29 mg/m3
	Workers	Dermal	Long-term systemic effects	2,5 mg/kg bw/day
3-aminomethyl-3,5,5-trimethylcyclohexylamine	Workers	Inhalation	Long-term local effects	0,073 mg/m3
	Workers	Inhalation	Acute local effects	0,073 mg/m3
	Consumers	Oral	Long-term systemic	0,3 mg/kg

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			effects	bw/day
	Consumers	Oral	Acute systemic effects	0,3 mg/kg bw/day

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

Substance name	Environmental Compartment	Value
Reaction products of di-, tri- and tetra-propoxylated propane-1,2-diol with ammonia	Fresh water	0,015 mg/l
	Remarks:Assessment Factors	
	Marine water	0,014 mg/l
	Remarks:Assessment Factors	
	Fresh water sediment	0,132 mg/kg dry weight (d.w.)
	Remarks:Equilibrium method	
	Marine sediment	0,125 mg/kg dry weight (d.w.)
	Remarks:Equilibrium method	
	Sewage treatment plant	7,5 mg/l
	Remarks:Assessment Factors	
3-aminomethyl-3,5,5-trimethylcyclohexylamine	Secondary Poisoning	6,93 mg/kg
	Remarks:Assessment Factors	
	Freshwater - intermittent	0,15 mg/l
	Remarks:Assessment Factors	
	Soil	0,018 mg/kg dry weight (d.w.)
	Remarks:Equilibrium method	
	Fresh water	0,06 mg/l
	Remarks:Assessment Factors	
	Marine water	0,006 mg/l
	Remarks:Assessment Factors	
	Sewage treatment plant	3,18 mg/l
	Remarks:Assessment Factors	
	Fresh water sediment	5,784 mg/kg dry weight (d.w.)
	Remarks:Equilibrium method	
	Marine sediment	0,578 mg/kg dry weight (d.w.)
	Soil	1,121 mg/kg dry weight (d.w.)
	Freshwater - intermittent	0,23 mg/l
	Remarks:Assessment Factors	

8.2 Exposure controls

Personal protective equipment

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

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

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Material : Nitrile rubber
Break through time : 10 - 480 min

Material : Ethyl Vinyl Alcohol Laminate (EVAL)
Break through time : > 8 h

Remarks : The selected protective gloves have to satisfy the specifications of Regulation (EU) 2016/425 and the standard EN 374 derived from it. Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough. Take note of the information given by the producer concerning permeability and break through times, and of special workplace conditions (mechanical strain, duration of contact).

Skin and body protection : Impervious clothing
Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Respiratory protection : Use respiratory protection unless adequate local exhaust ventilation is provided or exposure assessment demonstrates that exposures are within recommended exposure guidelines
Equipment should conform to EN 14387

Filter type : Organic vapour type (A)

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	: liquid
Colour	: colourless
Odour	: ammoniacal
Odour Threshold	: No data is available on the product itself.
pH	: 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.
Flash point	: > 90 °C Method: estimated, 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	: No data is available on the product itself.

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flammability limit

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

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

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

Density : 0,93 g/cm³ (23 °C)
Method: estimated

Solubility(ies)
Water solubility : soluble

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 : No data is available on the product itself.

Viscosity
Viscosity, dynamic : 10 - 30 mPa.s (20 °C)
Method: estimated

9.2 Other information

No data available

SECTION 10: Stability and reactivity

10.1 Reactivity

No dangerous reaction known under conditions of normal use.

10.2 Chemical stability

Stable under normal conditions.

10.3 Possibility of hazardous reactions

Hazardous reactions : Vapours may form explosive mixture with air.

10.4 Conditions to avoid

Conditions to avoid : Heat, flames and sparks.

10.5 Incompatible materials

Materials to avoid : Strong acids and strong bases
Strong oxidizing agents

10.6 Hazardous decomposition products

Hazardous decomposition : carbon dioxide

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products

carbon monoxide
Nitrogen oxides (NOx)

SECTION 11: Toxicological information

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

Acute toxicity

Product:

Acute oral toxicity : Acute toxicity estimate: 1 304 mg/kg
Method: Calculation method

Components:

3-aminomethyl-3,5,5-trimethylcyclohexylamine:

Acute oral toxicity : LD50 (Rat, male): 1 030 mg/kg
Method: OECD Test Guideline 401
GLP: no
Assessment: The component/mixture is moderately toxic after single ingestion.

Acute toxicity estimate: 1 030 mg/kg
Assessment: The component/mixture is moderately toxic after single ingestion.

Acute inhalation toxicity : (Rat, male and female): > 5,01 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403
Symptoms: Breathing difficulties
GLP: yes

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

Reaction products of di-, tri- and tetra-propoxylated propane-1,2-diol with ammonia:

Acute oral toxicity : LD50 (Rat, male and female): 2 885 mg/kg
Method: OECD Test Guideline 401
Assessment: The component/mixture is low toxic after single ingestion.

Acute inhalation toxicity : LC50 (Rat, male and female): > 0,74 mg/l
Exposure time: 8 h
Test atmosphere: vapour
Method: OECD Test Guideline 403

Acute dermal toxicity : LD50 (Rabbit, male and female): 2 980 mg/kg
Method: OECD Test Guideline 402
Assessment: The component/mixture is low toxic after single contact with skin.

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Skin corrosion/irritation

Components:

3-aminomethyl-3,5,5-trimethylcyclohexylamine:

Species	: Rabbit
Assessment	: Causes burns.
Result	: Causes burns.

Reaction products of di-, tri- and tetra-propoxylated propane-1,2-diol with ammonia:

Species	: Rabbit
Assessment	: Corrosive, category 1C - where responses occur after exposures between 1 hour and 4 hours and observations up to 14 days.
Method	: OECD Test Guideline 404
Result	: Corrosive after 1 to 4 hours of exposure

Serious eye damage/eye irritation

Components:

3-aminomethyl-3,5,5-trimethylcyclohexylamine:

Species	: Rabbit
Assessment	: Corrosive
Method	: OECD Test Guideline 405
Result	: Irreversible effects on the eye
GLP	: no

Reaction products of di-, tri- and tetra-propoxylated propane-1,2-diol with ammonia:

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

Respiratory or skin sensitisation

Components:

3-aminomethyl-3,5,5-trimethylcyclohexylamine:

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

Germ cell mutagenicity

Components:

3-aminomethyl-3,5,5-trimethylcyclohexylamine:

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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: negative
GLP: yes

Test Type: Chromosome aberration test in vitro
Test system: Chinese hamster ovary cells
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 473
Result: negative
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
GLP: yes

Genotoxicity in vivo : Test Type: In vivo micronucleus test
Species: Mouse (male and female)
Cell type: Bone marrow
Application Route: Oral
Dose: 50, 150, or 500 mg/kg
Method: OECD Test Guideline 474
Result: negative
GLP: yes

Reaction products of di-, tri- and tetra-propoxylated propane-1,2-diol with ammonia:

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: 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

Test Type: gene mutation test
Result: negative
GLP: yes

Genotoxicity in vivo : Test Type: In vivo micronucleus test
Species: Mouse (male and female)
Cell type: Bone marrow
Application Route: Oral
Dose: 125/250/500 mg/kg bw/day
Method: OECD Test Guideline 474
Result: negative

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Carcinogenicity

No data available

Reproductive toxicity

Components:

3-aminomethyl-3,5,5-trimethylcyclohexylamine:

Effects on fertility : Species: Rat, male and female
Application Route: Oral
Dose: 0/25/80/240 mg/kg bw/day
Frequency of Treatment: 7 days/week
General Toxicity - Parent: NOAEL: 80 mg/kg body weight
General Toxicity F1: NOAEL: > 160 mg/kg body weight
Method: OECD Test Guideline 443
GLP: yes

Effects on foetal development : Test Type: Pre-natal
Species: Rat, female
Application Route: Oral
Dose: 10/50/250 milligram per kilogram
Duration of Single Treatment: 14 d
General Toxicity Maternal: NOEL: 50 mg/kg body weight
Method: OECD Test Guideline 414
Result: No teratogenic effects
GLP: yes

Test Type: Pre-natal
Species: Rabbit, female
Application Route: Oral
Dose: 0/10/25/75 mg/kg bw/d
Duration of Single Treatment: 23 d
General Toxicity Maternal: NOAEL: 25 mg/kg body weight
Teratogenicity: NOAEL: > 250 mg/kg body weight
Developmental Toxicity: NOAEL: > 75 mg/kg body weight
Method: OECD Test Guideline 414
GLP: yes

Reaction products of di-, tri- and tetra-propoxylated propane-1,2-diol with ammonia:

Effects on fertility : Test Type: Reproduction / Developmental Toxicity Screening Test
Species: Rat, male and female
Application Route: Dermal
Dose: 3/10/30 milligram per kilogram
General Toxicity - Parent: NOAEL: 30 mg/kg body weight
General Toxicity F1: NOAEL: 30 mg/kg body weight
Method: OECD Test Guideline 421
Result: Animal testing did not show any effects on fertility.

Species: Rat, male and female
Application Route: Oral
Dose: 0/50/150/450 milligram per kilogram
General Toxicity - Parent: NOAEL: 150 mg/kg body weight
General Toxicity F1: NOAEL: 150 mg/kg body weight

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Method: OECD Test Guideline 443

Test Type: Reproduction / Developmental Toxicity Screening Test

Species: Rat, male and female

Application Route: Oral

Dose: 0/75/150/300/600 mg/kg bw/d

General Toxicity - Parent: NOAEL: 150 mg/kg body weight

General Toxicity F1: NOAEL: 600 mg/kg body weight

Method: OECD Test Guideline 421

Effects on foetal development

: Test Type: Pre-natal

Species: Rabbit, female

Application Route: Oral

Dose: 15/50/115 milligram per kilogram

Duration of Single Treatment: 23 d

General Toxicity Maternal: NOAEL: 50 mg/kg body weight

Developmental Toxicity: NOAEL: 115 mg/kg body weight

Method: OECD Test Guideline 414

Test Type: Pre-natal

Species: Rat, female

Application Route: Oral

Dose: 0/40/125/350 milligram per kilogram

Duration of Single Treatment: 13 d

General Toxicity Maternal: NOAEL: 350 mg/kg body weight

Developmental Toxicity: NOAEL: 350 mg/kg body weight

Method: OECD Test Guideline 414

STOT - single exposure

No data available

STOT - repeated exposure

No data available

Repeated dose toxicity

Components:

3-aminomethyl-3,5,5-trimethylcyclohexylamine:

Species	: Rat, male and female
NOAEL	: 59 - 62 mg/kg
LOAEL	: 160 mg/kg
Application Route	: oral (drinking water)
Exposure time	: 90 d
Number of exposures	: daily
Dose	: 20, 60, 160 mg/kg
Method	: OECD Test Guideline 408
Target Organs	: Kidney

Species	: Rat, male and female
NOEC	: 200 mg/m3
Application Route	: Inhalation
Test atmosphere	: dust/mist
Exposure time	: 216 h
Number of exposures	: 6h

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Method : Subacute toxicity
Target Organs : respiratory tract irritation

Reaction products of di-, tri- and tetra-propoxylated propane-1,2-diol with ammonia:

Species : Rat, male and female
NOAEL : ≥ 250 mg/kg/d
Application Route : Dermal
Exposure time : 90 days 6 h
Number of exposures : 5 days/week
Dose : 0/50/80/250 mg/kg bw/day
Method : OECD Test Guideline 411

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

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:

3-aminomethyl-3,5,5-trimethylcyclohexylamine:

Toxicity to fish : LC50 (Leuciscus idus (Golden orfe)): 110 mg/l
End point: mortality
Exposure time: 96 h
Test Type: semi-static test
Analytical monitoring: yes
Test substance: Fresh water
Method: Directive 67/548/EEC, Annex V, C.1.
GLP: yes

Toxicity to daphnia and other : EC50 (Daphnia magna (Water flea)): 23 mg/l

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aquatic invertebrates

End point: mortality
Exposure time: 48 h
Test Type: static test
Analytical monitoring: yes
Test substance: Fresh water
Method: OECD Test Guideline 202
GLP: yes

Toxicity to algae/aquatic plants

: EC50 (*Desmodesmus subspicatus* (green algae)): > 50 mg/l
Exposure time: 72 h
Test Type: static test
Analytical monitoring: no
Test substance: Fresh water
Method: Directive 67/548/EEC, Annex V, C.3.
GLP: yes

EC10 (*Desmodesmus subspicatus* (green algae)): 11,2 mg/l
Exposure time: 72 h
Test Type: static test
Analytical monitoring: no
Test substance: Fresh water
Method: Directive 67/548/EEC, Annex V, C.3.
GLP: yes

Toxicity to microorganisms

: EC10 (*Pseudomonas putida*): 1 120 mg/l
Exposure time: 18 h
Test Type: static test
Method: Measured

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)

: NOEC: 3 mg/l
Exposure time: 21 d
Species: *Daphnia magna* (Water flea)
Test Type: semi-static test
Analytical monitoring: yes
Test substance: Fresh water
Method: OECD Test Guideline 202
Remarks: No-observed-effect level

Reaction products of di-, tri- and tetra-propoxylated propane-1,2-diol with ammonia:

Toxicity to fish

: EC50 (*Oncorhynchus mykiss* (rainbow trout)): > 15 mg/l
End point: mortality
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)): 80 mg/l
Exposure time: 48 h
Test Type: static test
Test substance: Fresh water
Method: OECD Test Guideline 202

EC50 (*Acartia tonsa*): 418,34 mg/l
Exposure time: 48 h

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Test Type: static test
Test substance: Marine water

Toxicity to algae/aquatic plants : ErC50 (Selenastrum capricornutum (green algae)): 15 mg/l
Exposure time: 72 h
Test Type: static test
Test substance: Fresh water
Method: OECD Test Guideline 201

NOECr (Selenastrum capricornutum (green algae)): 0,32 mg/l
Exposure time: 72 h
Test Type: static test
Test substance: Fresh water
Method: OECD Test Guideline 201

IC50 (Skeletonema costatum (marine diatom)): 141,72 mg/l
Exposure time: 72 h
Test Type: static test
Test substance: Marine water
Method: ISO 10253

ErC10 (Skeletonema costatum (marine diatom)): 33,34 mg/l
Exposure time: 72 h
Test Type: static test
Test substance: Marine water
Method: ISO 10253

Toxicity to microorganisms : EC50 (activated sludge): 750 mg/l
Exposure time: 3 h
Test Type: static test
Method: OECD Test Guideline 209

Ecotoxicology Assessment

Acute aquatic toxicity : Harmful to aquatic life.

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

12.2 Persistence and degradability

Components:

3-aminomethyl-3,5,5-trimethylcyclohexylamine:

Biodegradability : Test Type: aerobic
Inoculum: activated sludge
Concentration: 6,9 mg/l
Result: Not readily biodegradable.
Biodegradation: 8 %
Related to: Dissolved organic carbon (DOC)
Exposure time: 28 d
Method: Directive 67/548/EEC Annex V, C.4.A.
Test substance: Fresh water
GLP: yes

Reaction products of di-, tri- and tetra-propoxylated propane-1,2-diol with ammonia:

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Biodegradability : Test Type: aerobic
Inoculum: Mixture
Result: Not biodegradable
Biodegradation: 0 %
Exposure time: 28 d
Method: OECD Test Guideline 301B

Stability in water : Degradation half life (DT50): 12 Months (25 °C)
pH: 6,5
Method: No information available.
Remarks: Fresh water

12.3 Bioaccumulative potential

Components:

3-aminomethyl-3,5,5-trimethylcyclohexylamine:

Partition coefficient: n-octanol/water : log Pow: 0,99 (23 °C)
pH: 6,34
Method: OECD Test Guideline 107
GLP: yes

Reaction products of di-, tri- and tetra-propoxylated propane-1,2-diol with ammonia:

Partition coefficient: n-octanol/water : Pow: 22,09 (25 °C)
log Pow: 1,34 (25 °C)

12.4 Mobility in soil

Components:

3-aminomethyl-3,5,5-trimethylcyclohexylamine:

Distribution among environmental compartments : Koc: 928

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:

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Additional ecological information : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Harmful to aquatic life.
Harmful 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.
Do not burn, or use a cutting torch on, the empty drum.

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.
(ISOPHORONE DIAMINE, POLYOXYPROPYLENEDIAMINE)

ADR : POLYAMINES, LIQUID, CORROSIVE, N.O.S.
(ISOPHORONE DIAMINE, POLYOXYPROPYLENEDIAMINE)

RID : POLYAMINES, LIQUID, CORROSIVE, N.O.S.
(ISOPHORONE DIAMINE, POLYOXYPROPYLENEDIAMINE)

IMDG : POLYAMINES, LIQUID, CORROSIVE, N.O.S.
(ISOPHORONE DIAMINE, POLYOXYPROPYLENEDIAMINE)

IATA : Polyamines, liquid, corrosive, n.o.s.
(ISOPHORONE DIAMINE, POLYOXYPROPYLENEDIAMINE)

14.3 Transport hazard class(es)

	Class	Subsidiary risks
ADN	: 8	
ADR	: 8	
RID	: 8	

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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
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

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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).

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. Not applicable

Occupational Illnesses (R-461-3, France) : 49 bis, 84

Installations classified for the protection of the environment (Environment Code R511-9) : 1436, 4734

Other regulations:

Take note of Directive 92/85/EEC regarding maternity protection or stricter national regulations, where applicable.

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

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

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

PICCS : Not in compliance with the inventory

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

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

TSCA : All substances listed as active on the TSCA inventory

Inventories

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

15.2 Chemical safety assessment

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

SECTION 16: Other information

Full text of H-Statements

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

Further information

Classification of the mixture:

Acute Tox. 4	H302
Skin Corr. 1B	H314
Eye Dam. 1	H318

Classification procedure:

Calculation method
Calculation method
Calculation method

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Skin Sens. 1

H317

Calculation method

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