



Safety Data Sheet according to (EC) No 1907/2006 as amended

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LOCTITE EA 3471 Part B

SDS No. : 173478
V009.0

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

1.1. Product identifier

LOCTITE EA 3471 Part B

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

Intended use:
Epoxy Hardener

1.3. Details of the supplier of the safety data sheet

Henkel Ltd
Adhesives
Wood Lane End
HP2 4RQ Hemel Hempstead
Great Britain

Phone: +44 (1442) 278000

SDSinfo.Adhesive@henkel.com

For Safety Data Sheet updates please visit our website <https://mysds.henkel.com/index.html#/appSelection> or www.henkel-adhesives.com.

1.4. Emergency telephone number

24 Hours Emergency Tel: +44 (0)1442 278497

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (CLP):

Skin corrosion	Sub-category 1B
H314 Causes severe skin burns and eye damage.	
Serious eye damage	Category 1
H318 Causes serious eye damage.	
Skin sensitizer	Category 1
H317 May cause an allergic skin reaction.	
Chronic hazards to the aquatic environment	
H412 Harmful to aquatic life with long lasting effects.	Category 3

2.2. Label elements

Label elements (CLP):

**Hazard pictogram:****Contains**

Isophorone diamine

C18 Fatty acid dimer, tall oil fatty acid, triethylenetetramine polymer

Formaldehyde, polymer with benzenamine, hydrogenated
N-(3-(Trimethoxysilyl)propyl)ethylenediamine4,4'-Methylenebis(cyclohexylamine)
3,6-diazaoctanethylenediamine**Signal word:**

Danger

Hazard statement:

H314 Causes severe skin burns and eye damage.

H317 May cause an allergic skin reaction.

H412 Harmful to aquatic life with long lasting effects.

**Precautionary statement:
Prevention**

P273 Avoid release to the environment.

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

**Precautionary statement:
Response**P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing.
Rinse skin with water [or shower].P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove
contact lenses, if present and easy to do. Continue rinsing.

P310 Immediately call a POISON CENTER or doctor.

P333+P313 If skin irritation or rash occurs: Get medical advice/attention.

2.3. Other hazards

None if used properly.

Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.

Following substances are present in a concentration $\geq 0,1\%$ and fulfill the criteria for PBT/vPvB, or were identified as endocrine disruptor (ED):This mixture does not contain any substances in concentration \geq the concentration limit that are assessed to be a PBT, vPvB or ED.**SECTION 3: Composition/information on ingredients****3.2. Mixtures**

Declaration of the ingredients according to CLP (EC) No 1272/2008:

Hazardous components CAS-No. EC Number REACH-Reg No.	Concentration	Classification	Specific Conc. Limits, M- factors and ATEs	Add. Information
Isophorone diamine 2855-13-2 220-666-8 01-2119514687-32	>= 5- < 10 %	Skin Sens. 1A, H317 Eye Dam. 1, H318 Skin Corr. 1B, H314 Acute Tox. 4, Oral, H302	Skin Sens. 1A; H317; C >= 0,001 % ===== oral:ATE = 1.030 mg/kg inhalation:ATE = 5,011 mg/l;	
C18 Fatty acid dimer, tall oil fatty acid, triethylenetetramine polymer 68082-29-1 500-191-5 01-2119972320-44	>= 3- < 5 %	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1A, H317 Aquatic Chronic 2, H411		
benzyl alcohol 100-51-6 202-859-9 01-2119492630-38	>= 2,5- < 5 %	Acute Tox. 4, Oral, H302 Acute Tox. 4, Inhalation, H332 Eye Irrit. 2, H319	dermal:ATE = 2.500 mg/kg inhalation:ATE = 4,17 mg/l;dust/mist	
1,5-Pentanediamine, 2-methyl- 15520-10-2 239-556-6 01-2119976310-41	>= 1- < 2,5 %	Acute Tox. 4, Oral, H302 Acute Tox. 4, Dermal, H312 Acute Tox. 4, Inhalation, H332 Eye Dam. 1, H318 Skin Corr. 1A, H314 STOT SE 3, H335	inhalation:ATE = 1,225 mg/l;dust/mist	
Formaldehyde, polymer with benzenamine, hydrogenated 135108-88-2 603-894-6 01-2119983522-33	>= 1- < 2,5 %	Acute Tox. 3, Oral, H301 Skin Corr. 1C, H314 STOT RE 2, H373 Aquatic Chronic 3, H412 Eye Dam. 1, H318 Skin Sens. 1, H317	dermal:ATE = > 2.000 mg/kg	
Salicylic acid 69-72-7 200-712-3 01-2119486984-17	>= 1- < 2,5 %	Repr. 2, H361d Acute Tox. 4, Oral, H302 Eye Dam. 1, H318		
N-(3-(Trimethoxysilyl)propyl)ethylene diamine 1760-24-3 217-164-6 01-2119970215-39	< 1 %	Skin Sens. 1A, H317 Eye Dam. 1, H318 Acute Tox. 4, Inhalation, H332 STOT RE 2, Inhalation, H373	inhalation:ATE = 1,49 mg/l;dust/mist	
N,N'-Ethane-1,2-diylbis(12-hydroxyoctadecan-1-amide) 123-26-2 204-613-6 01-2119978265-26	>= 0,25- < 1 %	Aquatic Chronic 4, H413		
3,6-diazaoctanethylenediamine 112-24-3 203-950-6 01-2119487919-13	>= 0,025- < 0,25 %	Acute Tox. 4, Oral, H302 Acute Tox. 4, Dermal, H312 Skin Sens. 1, H317 Skin Corr. 1B, H314 Aquatic Chronic 3, H412		
4,4'-Methylenebis(cyclohexylamine) 1761-71-3 217-168-8 01-2119541673-38	< 1 %	Acute Tox. 4, Oral, H302 Skin Corr. 1B, H314 Skin Sens. 1, H317 STOT RE 2, Oral, H373 Eye Dam. 1, H318		

**For full text of the H - statements and other abbreviations see section 16 "Other information".
Substances without classification may have community workplace exposure limits available.**



SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation:

Move to fresh air. If symptoms persist, seek medical advice.

Skin contact:

Rinse with running water and soap.
Seek medical advice.

Eye contact:

Rinse immediately with plenty of running water (for 10 minutes), seek medical attention from a specialist.

Ingestion:

Rinse mouth, drink 1-2 glasses of water, do not induce vomiting, consult a doctor.

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

SKIN: Rash, Urticaria.

Causes burns.

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

See section: Description of first aid measures

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:

Carbon dioxide, foam, powder

Extinguishing media which must not be used for safety reasons:

None known

5.2. Special hazards arising from the substance or mixture

In the event of a fire, carbon monoxide (CO), carbon dioxide (CO₂) and nitrogen oxides (NO_x) can be released.

5.3. Advice for firefighters

Wear self-contained breathing apparatus and full protective clothing, such as turn-out gear.

Additional information:

In case of fire, keep containers cool with water spray.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation.
Wear protective equipment.
Avoid contact with skin and eyes.

6.2. Environmental precautions

Do not empty into drains / surface water / ground water.

6.3. Methods and material for containment and cleaning up

Scrape up as much material as possible.
Sweep up spilled material. Avoid creating dust.
Store in a partly filled, closed container until disposal.
Dispose of contaminated material as waste according to Section 13.

6.4. Reference to other sections

See advice in section 8

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Avoid skin and eye contact.
Use only in well-ventilated areas.
Gloves and safety glasses should be worn
Do not inhale vapors and fumes.
See advice in section 8

Hygiene measures:

Wash hands before work breaks and after finishing work.
Do not eat, drink or smoke while working.
Good industrial hygiene practices should be observed.

7.2. Conditions for safe storage, including any incompatibilities

Store in sealed original container.
Store in a cool, well-ventilated place.
Refer to Technical Data Sheet

7.3. Specific end use(s)

Epoxy Hardener

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational Exposure Limits

Valid for
Great Britain

None

Occupational Exposure Limits

Valid for
Ireland

None

Predicted No-Effect Concentration (PNEC):

Name on list	Environmental Compartment	Exposure period	Value				Remarks
			mg/l	ppm	mg/kg	others	
3-Aminomethyl-3,5,5-trimethylcyclohexylamine 2855-13-2	aqua (freshwater)		0,06 mg/l				
3-Aminomethyl-3,5,5-trimethylcyclohexylamine 2855-13-2	aqua (marine water)		0,006 mg/l				
3-Aminomethyl-3,5,5-trimethylcyclohexylamine 2855-13-2	aqua (intermittent releases)		0,23 mg/l				
3-Aminomethyl-3,5,5-trimethylcyclohexylamine 2855-13-2	sediment (freshwater)				5,784 mg/kg		
3-Aminomethyl-3,5,5-trimethylcyclohexylamine 2855-13-2	sediment (marine water)				0,578 mg/kg		
3-Aminomethyl-3,5,5-trimethylcyclohexylamine 2855-13-2	Soil				1,121 mg/kg		
3-Aminomethyl-3,5,5-trimethylcyclohexylamine 2855-13-2	sewage treatment plant (STP)		3,18 mg/l				
C18 Fatty acid dimer, tall oil fatty acid, triethylenetetramine polymer 68082-29-1	aqua (freshwater)		0,00434 mg/l				
C18 Fatty acid dimer, tall oil fatty acid, triethylenetetramine polymer 68082-29-1	aqua (marine water)		0,00043 mg/l				
C18 Fatty acid dimer, tall oil fatty acid, triethylenetetramine polymer 68082-29-1	aqua (intermittent releases)		0,0434 mg/l				
C18 Fatty acid dimer, tall oil fatty acid, triethylenetetramine polymer 68082-29-1	sewage treatment plant (STP)		3,84 mg/l				
C18 Fatty acid dimer, tall oil fatty acid, triethylenetetramine polymer 68082-29-1	sediment (freshwater)				434,02 mg/kg		
C18 Fatty acid dimer, tall oil fatty acid, triethylenetetramine polymer 68082-29-1	sediment (marine water)				43,4 mg/kg		
C18 Fatty acid dimer, tall oil fatty acid, triethylenetetramine polymer 68082-29-1	Soil				86,78 mg/kg		
Benzyl alcohol 100-51-6	Soil				0,456 mg/kg		
Benzyl alcohol 100-51-6	sewage treatment plant (STP)		39 mg/l				
Benzyl alcohol 100-51-6	sediment (freshwater)				5,27 mg/kg		
Benzyl alcohol 100-51-6	sediment (marine water)				0,527 mg/kg		
Benzyl alcohol 100-51-6	aqua (marine water)		0,1 mg/l				
Benzyl alcohol 100-51-6	aqua (intermittent releases)		2,3 mg/l				
Benzyl alcohol 100-51-6	aqua (freshwater)		1 mg/l				
Benzyl alcohol 100-51-6	Air						no hazard identified
Benzyl alcohol 100-51-6	Predator						no potential for bioaccumulation
2-Methylpentane-1,5-diamine 15520-10-2	aqua (freshwater)		0,42 mg/l				
2-Methylpentane-1,5-diamine 15520-10-2	aqua (marine water)		0,042 mg/l				
2-Methylpentane-1,5-diamine 15520-10-2	sewage treatment plant (STP)		1250 mg/l				

2-Methylpentane-1,5-diamine 15520-10-2	sediment (freshwater)				7,58 mg/kg		
2-Methylpentane-1,5-diamine 15520-10-2	sediment (marine water)				0,758 mg/kg		
2-Methylpentane-1,5-diamine 15520-10-2	Soil				1,27 mg/kg		
2-Methylpentane-1,5-diamine 15520-10-2	aqua (intermittent releases)		0,42 mg/l				
Formaldehyde, polymer with benzenamine, hydrogenated 135108-88-2	aqua (freshwater)		0,015 mg/l				
Formaldehyde, polymer with benzenamine, hydrogenated 135108-88-2	aqua (marine water)		0,002 mg/l				
Formaldehyde, polymer with benzenamine, hydrogenated 135108-88-2	aqua (intermittent releases)		0,15 mg/l				
Formaldehyde, polymer with benzenamine, hydrogenated 135108-88-2	sewage treatment plant (STP)		1,9 mg/l				
Formaldehyde, polymer with benzenamine, hydrogenated 135108-88-2	sediment (freshwater)				15 mg/kg		
Formaldehyde, polymer with benzenamine, hydrogenated 135108-88-2	sediment (marine water)				1,5 mg/kg		
Formaldehyde, polymer with benzenamine, hydrogenated 135108-88-2	Soil				1,8 mg/kg		
Salicylic acid 69-72-7	aqua (freshwater)		0,2 mg/l				
Salicylic acid 69-72-7	aqua (marine water)		0,02 mg/l				
Salicylic acid 69-72-7	aqua (intermittent releases)		1 mg/l				
Salicylic acid 69-72-7	sewage treatment plant (STP)		162 mg/l				
Salicylic acid 69-72-7	sediment (freshwater)				1,42 mg/kg		
Salicylic acid 69-72-7	sediment (marine water)				0,142 mg/kg		
Salicylic acid 69-72-7	Soil				0,166 mg/kg		
N-(3- (Trimethoxysilyl)propyl)ethylenediamine 1760-24-3	aqua (freshwater)		0,062 mg/l				
N-(3- (Trimethoxysilyl)propyl)ethylenediamine 1760-24-3	aqua (marine water)		0,0062 mg/l				
N-(3- (Trimethoxysilyl)propyl)ethylenediamine 1760-24-3	aqua (intermittent releases)		0,62 mg/l				
N-(3- (Trimethoxysilyl)propyl)ethylenediamine 1760-24-3	sediment (freshwater)				0,22 mg/kg		
N-(3- (Trimethoxysilyl)propyl)ethylenediamine 1760-24-3	sediment (marine water)				0,022 mg/kg		
N-(3- (Trimethoxysilyl)propyl)ethylenediamine 1760-24-3	Soil				0,0085 mg/kg		
N-(3- (Trimethoxysilyl)propyl)ethylenediamine 1760-24-3	sewage treatment plant (STP)		25 mg/l				
N,N'-Ethane-1,2-diylbis(12- hydroxyoctadecan-1-amide) 123-26-2	sewage treatment plant (STP)		0,1 mg/l				
3,6-diazaoctanethylenediamine 112-24-3	aqua (freshwater)		0,027 mg/l				
3,6-diazaoctanethylenediamine 112-24-3	aqua (marine water)		0,003 mg/l				
3,6-diazaoctanethylenediamine 112-24-3	Sewage treatment plant		0,13 mg/l				

3,6-diazaoctanethylenediamine 112-24-3	sediment (freshwater)			8,572 mg/kg		
3,6-diazaoctanethylenediamine 112-24-3	sediment (marine water)			0,857 mg/kg		
3,6-diazaoctanethylenediamine 112-24-3	Soil			1,25 mg/kg		
3,6-diazaoctanethylenediamine 112-24-3	Freshwater - intermittent		0,2 mg/l			
3,6-diazaoctanethylenediamine 112-24-3	Marine water - intermittent		0,02 mg/l			
4,4'-Methylenebis(cyclohexylamine) 1761-71-3	aqua (intermittent releases)		0,08 mg/l			
4,4'-Methylenebis(cyclohexylamine) 1761-71-3	sediment (freshwater)			14,6 mg/kg		
4,4'-Methylenebis(cyclohexylamine) 1761-71-3	aqua (marine water)		0,008 mg/l			
4,4'-Methylenebis(cyclohexylamine) 1761-71-3	sediment (marine water)			1,46 mg/kg		
4,4'-Methylenebis(cyclohexylamine) 1761-71-3	sewage treatment plant (STP)		3,2 mg/l			
4,4'-Methylenebis(cyclohexylamine) 1761-71-3	Soil			4,56 mg/kg		
4,4'-Methylenebis(cyclohexylamine) 1761-71-3	aqua (freshwater)		0,08 mg/l			
4,4'-Methylenebis(cyclohexylamine) 1761-71-3	oral			0,556 mg/kg		

Derived No-Effect Level (DNEL):

Name on list	Application Area	Route of Exposure	Health Effect	Exposure Time	Value	Remarks
3-Aminomethyl-3,5,5-trimethylcyclohexylamine 2855-13-2	Workers	inhalation	Long term exposure - local effects		0,073 mg/m ³	
3-Aminomethyl-3,5,5-trimethylcyclohexylamine 2855-13-2	Workers	inhalation	Acute/short term exposure - local effects		0,073 mg/m ³	
3-Aminomethyl-3,5,5-trimethylcyclohexylamine 2855-13-2	General population	oral	Long term exposure - systemic effects		0,526 mg/kg	
C18 Fatty acid dimer, tall oil fatty acid, triethylenetetramine polymer 68082-29-1	Workers	inhalation	Long term exposure - systemic effects		3,9 mg/m ³	
C18 Fatty acid dimer, tall oil fatty acid, triethylenetetramine polymer 68082-29-1	Workers	dermal	Long term exposure - systemic effects		1,1 mg/kg	
C18 Fatty acid dimer, tall oil fatty acid, triethylenetetramine polymer 68082-29-1	General population	inhalation	Long term exposure - systemic effects		0,97 mg/m ³	
C18 Fatty acid dimer, tall oil fatty acid, triethylenetetramine polymer 68082-29-1	General population	dermal	Long term exposure - systemic effects		0,56 mg/kg	
C18 Fatty acid dimer, tall oil fatty acid, triethylenetetramine polymer 68082-29-1	General population	oral	Long term exposure - systemic effects		0,56 mg/kg	
Benzyl alcohol 100-51-6	General population	oral	Acute/short term exposure - systemic effects		20 mg/kg	no hazard identified
Benzyl alcohol 100-51-6	General population	oral	Long term exposure - systemic effects		4 mg/kg	no hazard identified
Benzyl alcohol 100-51-6	Workers	inhalation	Acute/short term exposure - systemic effects		110 mg/m ³	no hazard identified
Benzyl alcohol 100-51-6	Workers	inhalation	Long term exposure - systemic effects		22 mg/m ³	no hazard identified
Benzyl alcohol 100-51-6	General population	inhalation	Acute/short term exposure - systemic effects		27 mg/m ³	no hazard identified
Benzyl alcohol 100-51-6	General population	inhalation	Long term exposure - systemic effects		5,4 mg/m ³	no hazard identified
Benzyl alcohol 100-51-6	Workers	dermal	Acute/short term exposure - systemic effects		40 mg/kg	no hazard identified
Benzyl alcohol 100-51-6	Workers	dermal	Long term exposure - systemic effects		8 mg/kg	no hazard identified
Benzyl alcohol 100-51-6	General population	dermal	Acute/short term exposure - systemic effects		20 mg/kg	no hazard identified
Benzyl alcohol 100-51-6	General population	dermal	Long term exposure - systemic effects		4 mg/kg	no hazard identified
2-Methylpentane-1,5-diamine 15520-10-2	Workers	inhalation	Long term exposure - local effects		0,25 mg/m ³	
2-Methylpentane-1,5-diamine 15520-10-2	Workers	inhalation	Acute/short term exposure - local effects		0,5 mg/m ³	
2-Methylpentane-1,5-diamine 15520-10-2	Workers	dermal	Long term exposure - systemic effects		1,5 mg/kg	
2-Methylpentane-1,5-diamine 15520-10-2	General population	inhalation	Long term exposure - local effects		0,125 mg/m ³	
2-Methylpentane-1,5-diamine 15520-10-2	General population	inhalation	Acute/short term exposure - local effects		0,25 mg/m ³	
2-Methylpentane-1,5-diamine 15520-10-2	General population	dermal	Long term exposure -		0,75 mg/kg	

2-Methylpentane-1,5-diamine 15520-10-2	General population	oral	systemic effects Long term exposure - systemic effects	0,75 mg/kg	
Formaldehyde, polymer with benzenamine, hydrogenated 135108-88-2	Workers	inhalation	Long term exposure - systemic effects	0,2 mg/m ³	
Formaldehyde, polymer with benzenamine, hydrogenated 135108-88-2	Workers	inhalation	Acute/short term exposure - systemic effects	2 mg/m ³	
Formaldehyde, polymer with benzenamine, hydrogenated 135108-88-2	Workers	dermal	Long term exposure - systemic effects	2 mg/kg	
Formaldehyde, polymer with benzenamine, hydrogenated 135108-88-2	Workers	dermal	Acute/short term exposure - systemic effects	6 mg/kg	
Salicylic acid 69-72-7	Workers	dermal	Long term exposure - systemic effects	2,3 mg/kg	
Salicylic acid 69-72-7	Workers	inhalation	Long term exposure - systemic effects	5 mg/m ³	
Salicylic acid 69-72-7	General population	oral	Acute/short term exposure - systemic effects	4 mg/kg	
Salicylic acid 69-72-7	General population	dermal	Long term exposure - systemic effects	1 mg/kg	
Salicylic acid 69-72-7	General population	inhalation	Long term exposure - systemic effects	4 mg/m ³	
Salicylic acid 69-72-7	General population	oral	Long term exposure - systemic effects	1 mg/kg	
Salicylic acid 69-72-7	Workers	inhalation	Long term exposure - local effects	5 mg/m ³	
N-(3-(Trimethoxysilyl)propyl)ethylenediamine 1760-24-3	Workers	inhalation	Long term exposure - systemic effects	260 mg/m ³	
N-(3-(Trimethoxysilyl)propyl)ethylenediamine 1760-24-3	Workers	inhalation	Acute/short term exposure - systemic effects	260 mg/m ³	
N-(3-(Trimethoxysilyl)propyl)ethylenediamine 1760-24-3	Workers	inhalation	Acute/short term exposure - local effects	5,36 mg/m ³	
N-(3-(Trimethoxysilyl)propyl)ethylenediamine 1760-24-3	General population	inhalation	Long term exposure - systemic effects	50 mg/m ³	
N-(3-(Trimethoxysilyl)propyl)ethylenediamine 1760-24-3	General population	oral	Long term exposure - systemic effects	8 mg/kg	
N-(3-(Trimethoxysilyl)propyl)ethylenediamine 1760-24-3	General population	inhalation	Acute/short term exposure - local effects	4 mg/m ³	
N-(3-(Trimethoxysilyl)propyl)ethylenediamine 1760-24-3	Workers	inhalation	Long term exposure - local effects	0,6 mg/m ³	
N-(3-(Trimethoxysilyl)propyl)ethylenediamine 1760-24-3	General population	inhalation	Long term exposure - local effects	0,1 mg/m ³	
N-(3-(Trimethoxysilyl)propyl)ethylenediamine 1760-24-3	General population	inhalation	Acute/short term exposure - systemic effects	50 mg/m ³	
3,6-diazaoctanethylenediamine 112-24-3	Workers	inhalation	Long term exposure - systemic effects	0,54 mg/m ³	
3,6-diazaoctanethylenediamine 112-24-3	General population	inhalation	Long term exposure - systemic effects	0,096 mg/m ³	
3,6-diazaoctanethylenediamine 112-24-3	General population	oral	Long term exposure - systemic effects	0,14 mg/kg	
4,4'-Methylenebis(cyclohexylamine) 1761-71-3	Workers	inhalation	Long term exposure - systemic effects	0,9 mg/m ³	

4,4'-Methylenebis(cyclohexylamine) 1761-71-3	Workers	dermal	Long term exposure - systemic effects	0,25 mg/kg
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Biological Exposure Indices:

None

8.2. Exposure controls:

Engineering controls:

Ensure good ventilation/extraction.

Respiratory protection:

Ensure adequate ventilation.

Do not inhale vapors and fumes.

An approved mask or respirator fitted with an organic vapour cartridge should be worn if the product is used in a poorly ventilated area

Use filter A-P2 if vapours/aerosols occur which may be inhaled.

Hand protection:

Chemical-resistant protective gloves (EN 374).

Suitable materials for short-term contact or splashes (recommended: at least protection index 2, corresponding to > 30 minutes permeation time as per EN 374):

nitrile rubber (NBR; \geq 0.4 mm thickness)

Suitable materials for longer, direct contact (recommended: protection index 6, corresponding to > 480 minutes permeation time as per EN 374):

nitrile rubber (NBR; \geq 0.4 mm thickness)

This information is based on literature references and on information provided by glove manufacturers, or is derived by analogy with similar substances. Please note that in practice the working life of chemical-resistant protective gloves may be considerably shorter than the permeation time determined in accordance with EN 374 as a result of the many influencing factors (e.g. temperature). If signs of wear and tear are noticed then the gloves should be replaced.

Eye protection:

Tightly fitting safety goggles

Avoid eye contact.

Protective eye equipment should conform to EN166.

Skin protection:

Wear suitable protective clothing.

Protective clothing should conform to EN 14605 for liquid splashes or to EN 13982 for dusts.

Advices to personal protection equipment:

The information provided on personal protective equipment is for guidance purposes only. A full risk assessment should be conducted prior to using this product to determine the appropriate personal protective equipment to suit local conditions.

Personal protective equipment should conform to the relevant EN standard.

SECTION 9: Physical and chemical properties**9.1. Information on basic physical and chemical properties**

Physical state	solid
Delivery form	paste
Colour	grey
Odor	amine-like
Solidification temperature	Not applicable, Product is a solid.
Initial boiling point	> 200 °C (> 392 °F)
Flammability	Currently under determination
Explosive limits	Not applicable, Product is a solid.
Flash point	> 100 °C (> 212 °F)
Auto-ignition temperature	Not applicable, Product is a solid.
Decomposition temperature	Currently under determination

pH (20 °C (68 °F))	9 - 12
Viscosity (kinematic)	Not applicable, Product is a solid.
Solubility (qualitative) (Solvent: Water)	Slightly soluble
Solubility (qualitative) (Solvent: organic solvent)	Soluble
Partition coefficient: n-octanol/water	Not applicable
Vapour pressure	Mixture
Density	Currently under determination
()	2,4 g/cm ³ None
Relative vapour density:	Currently under determination
Particle characteristics	Currently under determination

9.2. Other information

Other information not applicable for this product

SECTION 10: Stability and reactivity

10.1. Reactivity

Reaction with strong oxidants.
Reacts with acids.

10.2. Chemical stability

Stable under recommended storage conditions.

10.3. Possibility of hazardous reactions

See section reactivity

10.4. Conditions to avoid

Stable under normal conditions of storage and use.
Avoid contact with acids and oxidizing agents.
Avoid contact with water.

10.5. Incompatible materials

See section reactivity.

10.6. Hazardous decomposition products

carbon oxides.

SECTION 11: Toxicological information

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

Acute oral toxicity:

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Value type	Value	Species	Method
Isophorone diamine 2855-13-2	Acute toxicity estimate (ATE)	1.030 mg/kg		Expert judgement
C18 Fatty acid dimer, tall oil fatty acid, triethylenetetramine polymer 68082-29-1	LD50	> 2.000 mg/kg	rat	OECD Guideline 423 (Acute Oral toxicity)
benzyl alcohol 100-51-6	LD50	1.620 mg/kg	rat	not specified
1,5-Pentanediamine, 2- methyl- 15520-10-2	LD50	1.170 mg/kg	rat	OECD Guideline 401 (Acute Oral Toxicity)
Formaldehyde, polymer with benzenamine, hydrogenated 135108-88-2	LD50	300 mg/kg	rat	OECD Guideline 423 (Acute Oral toxicity)
Salicylic acid 69-72-7	LD50	891 mg/kg	rat	equivalent or similar to OECD Guideline 401 (Acute Oral Toxicity)
N-(3- (Trimethoxysilyl)propyl)ethylenediamine 1760-24-3	LD50	2.295 mg/kg	rat	EPA OPPTS 870.1100 (Acute Oral Toxicity)
N,N'-Ethane-1,2- diylbis(12- hydroxyoctadecan-1- amide) 123-26-2	LD50	> 2.000 mg/kg	rat	OECD Guideline 423 (Acute Oral toxicity)
3,6- diazaoctanethylenediamin e 112-24-3	LD50	1.591 mg/kg	rat	OECD Guideline 401 (Acute Oral Toxicity)
4,4'- Methylenebis(cyclohexyla mine) 1761-71-3	LD50	380 mg/kg	rat	EPA OPP 81-1 (Acute Oral Toxicity)

Acute dermal toxicity:

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Value type	Value	Species	Method
Isophorone diamine 2855-13-2	LD50	> 2.000 mg/kg	rat	OECD Guideline 402 (Acute Dermal Toxicity)
C18 Fatty acid dimer, tall oil fatty acid, triethylenetetramine polymer 68082-29-1	LD50	> 2.000 mg/kg	rat	OECD Guideline 402 (Acute Dermal Toxicity)
benzyl alcohol 100-51-6	Acute toxicity estimate (ATE)	2.500 mg/kg		Expert judgement
1,5-Pentanediamine, 2- methyl- 15520-10-2	LD50	1.870 mg/kg	rat	OECD Guideline 402 (Acute Dermal Toxicity)
Formaldehyde, polymer with benzenamine, hydrogenated 135108-88-2	Acute toxicity estimate (ATE)	> 2.000 mg/kg	rabbit	Expert judgement
Salicylic acid 69-72-7	LD50	> 2.000 mg/kg	rat	OECD Guideline 402 (Acute Dermal Toxicity)
N-(3- (Trimethoxysilyl)propyl)e thylenediamine 1760-24-3	LD50	> 2.000 mg/kg	rat	EPA OPPTS 870.1200 (Acute Dermal Toxicity)
3,6- diazaoctanethylenediamin e 112-24-3	LD50	1.465 mg/kg	rabbit	OECD Guideline 402 (Acute Dermal Toxicity)
4,4'- Methylenebis(cyclohexyla mine) 1761-71-3	LD50	2.110 mg/kg	rabbit	not specified

Acute inhalative toxicity:

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Value type	Value	Test atmosphere	Exposure time	Species	Method
Isophorone diamine 2855-13-2	LC50	> 5,01 mg/l	dust/mist	4 h	rat	OECD Guideline 403 (Acute Inhalation Toxicity)
Isophorone diamine 2855-13-2	Acute toxicity estimate (ATE)	5,011 mg/l				Expert judgement
benzyl alcohol 100-51-6	Acute toxicity estimate (ATE)	4,17 mg/l	dust/mist			Expert judgement
benzyl alcohol 100-51-6	LC50	> 4,178 mg/l	dust/mist	4 h	rat	OECD Guideline 403 (Acute Inhalation Toxicity)
1,5-Pentanediamine, 2-methyl- 15520-10-2	Acute toxicity estimate (ATE)	1,225 mg/l	dust/mist	4 h		Expert judgement
N-(3-(Trimethoxysilyl)propyl)ethylenediamine 1760-24-3	LC50	1,49 - 2,44 mg/l	dust/mist	4 h	rat	EPA OPPTS 870.1300 (Acute inhalation toxicity)
N-(3-(Trimethoxysilyl)propyl)ethylenediamine 1760-24-3	Acute toxicity estimate (ATE)	1,49 mg/l	dust/mist			Expert judgement

Skin corrosion/irritation:

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Result	Exposure time	Species	Method
C18 Fatty acid dimer, tall oil fatty acid, triethylenetetramine polymer 68082-29-1	irritating		In vitro	OECD Guideline 439 (In Vitro Skin Irritation: Reconstructed Human Epidermis (RHE) Test Method)
benzyl alcohol 100-51-6	not irritating	4 h	rabbit	OECD Guideline 404 (Acute Dermal Irritation / Corrosion)
1,5-Pentanediamine, 2-methyl- 15520-10-2	highly corrosive	3 min	rabbit	OECD Guideline 404 (Acute Dermal Irritation / Corrosion)
Formaldehyde, polymer with benzenamine, hydrogenated 135108-88-2	Category 1C (corrosive)		Corrositex Biobarrier Membrane (reconstituted collagen matrix)	OECD Guideline 435 (In Vitro Membrane Barrier Test Method for Skin Corrosion)
Salicylic acid 69-72-7	slightly irritating		rabbit	not specified
3,6-diazaoctanethylenediamine 112-24-3	corrosive		rabbit	OECD Guideline 404 (Acute Dermal Irritation / Corrosion)
4,4'-Methylenebis(cyclohexylamine) 1761-71-3	corrosive	2,75 h	rabbit	OECD Guideline 404 (Acute Dermal Irritation / Corrosion)

Serious eye damage/irritation:

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Result	Exposure time	Species	Method
Isophorone diamine 2855-13-2	corrosive		rabbit	OECD Guideline 405 (Acute Eye Irritation / Corrosion)
C18 Fatty acid dimer, tall oil fatty acid, triethylenetetramine polymer 68082-29-1	Category 1 (irreversible effects on the eye)		rabbit	OECD Guideline 405 (Acute Eye Irritation / Corrosion)
benzyl alcohol 100-51-6	irritating	24 h	rabbit	OECD Guideline 405 (Acute Eye Irritation / Corrosion)
Salicylic acid 69-72-7	highly irritating		rabbit	Draize Test
N-(3- (Trimethoxysilyl)propyl)e thylenediamine 1760-24-3	highly irritating		rabbit	OECD Guideline 405 (Acute Eye Irritation / Corrosion)
4,4'- Methylenebis(cyclohexyla mine) 1761-71-3	Category 1 (irreversible effects on the eye)		rabbit	not specified

Respiratory or skin sensitization:

The mixture is classified based on threshold limits referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Result	Test type	Species	Method
Isophorone diamine 2855-13-2	sensitising	Guinea pig maximisation test	guinea pig	OECD Guideline 406 (Skin Sensitisation)
C18 Fatty acid dimer, tall oil fatty acid, triethylenetetramine polymer 68082-29-1	sensitising	Mouse local lymphnode assay (LLNA)	mouse	OECD Guideline 429 (Skin Sensitisation: Local Lymph Node Assay)
benzyl alcohol 100-51-6	not sensitising	Mouse local lymphnode assay (LLNA)	mouse	OECD Guideline 429 (Skin Sensitisation: Local Lymph Node Assay)
Formaldehyde, polymer with benzenamine, hydrogenated 135108-88-2	sensitising	Buehler test	guinea pig	Buehler test
Salicylic acid 69-72-7	not sensitising	Mouse local lymphnode assay (LLNA)	mouse	equivalent or similar to OECD Guideline 429 (Skin Sensitisation: Local Lymph Node Assay)
N-(3- (Trimethoxysilyl)propyl)e thylenediamine 1760-24-3	Sub-Category 1A (sensitising)	Guinea pig maximisation test	guinea pig	OECD Guideline 406 (Skin Sensitisation)
N,N'-Ethane-1,2- diylbis(12- hydroxyoctadecan-1- amide) 123-26-2	not sensitising	Mouse local lymphnode assay (LLNA)	mouse	OECD Guideline 429 (Skin Sensitisation: Local Lymph Node Assay)
3,6- diazaoctanethylenediamin e 112-24-3	sensitising	Buehler test	guinea pig	OECD Guideline 406 (Skin Sensitisation)

Germ cell mutagenicity:

The mixture is classified based on threshold limits referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Result	Type of study / Route of administration	Metabolic activation / Exposure time	Species	Method
Isophorone diamine 2855-13-2	negative	bacterial reverse mutation assay (e.g Ames test)	with and without		EU Method B.13/14 (Mutagenicity)
C18 Fatty acid dimer, tall oil fatty acid, triethylenetetramine polymer 68082-29-1	negative	bacterial reverse mutation assay (e.g Ames test)	with and without		OECD Guideline 471 (Bacterial Reverse Mutation Assay)
C18 Fatty acid dimer, tall oil fatty acid, triethylenetetramine polymer 68082-29-1	negative	mammalian cell gene mutation assay	with and without		OECD Guideline 476 (In vitro Mammalian Cell Gene Mutation Test)
benzyl alcohol 100-51-6	negative	bacterial reverse mutation assay (e.g Ames test)	with and without		equivalent or similar to OECD Guideline 471 (Bacterial Reverse Mutation Assay)
Salicylic acid 69-72-7	negative	bacterial reverse mutation assay (e.g Ames test)	with and without		equivalent or similar to OECD Guideline 471 (Bacterial Reverse Mutation Assay)
Salicylic acid 69-72-7	negative	in vitro mammalian chromosome aberration test	with and without		equivalent or similar to OECD Guideline 473 (In vitro Mammalian Chromosome Aberration Test)
Salicylic acid 69-72-7	negative	mammalian cell gene mutation assay	with and without		OECD Guideline 476 (In vitro Mammalian Cell Gene Mutation Test)
3,6-diazaoctanethylenediamine 112-24-3	positive	bacterial reverse mutation assay (e.g Ames test)	with and without		OECD Guideline 471 (Bacterial Reverse Mutation Assay)
3,6-diazaoctanethylenediamine 112-24-3	negative	DNA damage and repair assay, unscheduled DNA synthesis in mammalian cells in vitro	with and without		OECD Guideline 482 (Genetic Toxicology: DNA Damage and Repair, Unscheduled DNA Synthesis in Mammalian Cells In Vitro)

Carcinogenicity

The mixture is classified based on threshold limits referring to the classified substances present in the mixture.

Hazardous components CAS-No.	Result	Route of application	Exposure time / Frequency of treatment	Species	Sex	Method
benzyl alcohol 100-51-6	not carcinogenic	oral: gavage	104 weeks once daily, 5 days/week	rat	male/female	equivalent or similar OECD Guideline 451 (Carcinogenicity Studies)
Salicylic acid 69-72-7	not carcinogenic	oral: feed	2 years daily	rat	male/female	not specified

Reproductive toxicity:

The mixture is classified based on threshold limits referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Result / Value	Test type	Route of application	Species	Method
benzyl alcohol 100-51-6	NOAEL P 200 mg/kg	screening	oral: gavage	mouse	not specified
Salicylic acid 69-72-7	NOAEL P 250 mg/kg	three-generation study	oral: feed	rat	equivalent or similar to OECD Guideline 416 (Two-Generation Reproduction Toxicity Study)

STOT-single exposure:

No data available.

STOT-repeated exposure::

The mixture is classified based on threshold limits referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Result / Value	Route of application	Exposure time / Frequency of treatment	Species	Method
Isophorone diamine 2855-13-2	NOAEL < 60 mg/kg	oral: drinking water	13 weeks	rat	OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents)
benzyl alcohol 100-51-6	NOAEL 400 mg/kg	oral: gavage	13 weeks once daily, 5 days/week	rat	equivalent or similar to OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents)
Formaldehyde, polymer with benzenamine, hydrogenated 135108-88-2	NOAEL 15 mg/kg	oral: gavage	28 d daily	rat	OECD Guideline 407 (Repeated Dose 28-Day Oral Toxicity in Rodents)
Salicylic acid 69-72-7	NOAEL 50 mg/kg	oral: feed	2 years daily	rat	not specified
3,6- diazaoctanethylenediamin e 112-24-3	LOAEL 50 mg/kg	oral: gavage	26 w daily	rat	OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents)
3,6- diazaoctanethylenediamin e 112-24-3	NOAEL 50 mg/kg	oral: gavage	26 w daily	rat	OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents)
4,4'- Methylenebis(cyclohexyla mine) 1761-71-3	NOAEL 15 mg/kg	oral: gavage	M: 36 d / F: 48-52 d daily	rat	OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test)

Aspiration hazard:

No data available.

11.2 Information on other hazards

not applicable

SECTION 12: Ecological information

General ecological information:

Do not empty into drains / surface water / ground water.

12.1. Toxicity

Toxicity (Fish):

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Value type	Value	Exposure time	Species	Method
Isophorone diamine 2855-13-2	LC50	110 mg/l	96 h	Leuciscus idus	EU Method C.1 (Acute Toxicity for Fish)
C18 Fatty acid dimer, tall oil fatty acid, triethylenetetramine polymer 68082-29-1	LC50	7,07 mg/l	96 h	Danio rerio	OECD Guideline 203 (Fish, Acute Toxicity Test)
benzyl alcohol 100-51-6	LC50	460 mg/l	96 h	Pimephales promelas	EPA OPP 72-1 (Fish Acute Toxicity Test)
1,5-Pentanediamine, 2-methyl- 15520-10-2	LC50	1.825 mg/l	96 h	Pimephales promelas	OECD Guideline 203 (Fish, Acute Toxicity Test)
Formaldehyde, polymer with benzenamine, hydrogenated 135108-88-2	LC50	96 mg/l	96 h	Poecilia reticulata	OECD Guideline 203 (Fish, Acute Toxicity Test)
Salicylic acid 69-72-7	LC50	1.370 mg/l	96 h	Pimephales promelas	OECD Guideline 203 (Fish, Acute Toxicity Test)
N-(3-(Trimethoxysilyl)propyl)ethylenediamine 1760-24-3	LC50	168 mg/l	96 h	Pimephales promelas	OECD Guideline 203 (Fish, Acute Toxicity Test)
N,N'-Ethane-1,2-diylbis(12-hydroxyoctadecan-1-amide) 123-26-2	LL50	Toxicity > Water solubility	96 h	Oncorhynchus mykiss	OECD Guideline 203 (Fish, Acute Toxicity Test)
3,6-diazaoctanethylenediamine 112-24-3	LC50	570 mg/l	96 h	Poecilia reticulata	OECD Guideline 203 (Fish, Acute Toxicity Test)
4,4'-Methylenebis(cyclohexylamine) 1761-71-3	LC50	> 100 mg/l	96 h	Leuciscus idus	DIN 38412-15

Toxicity (Daphnia):

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Value type	Value	Exposure time	Species	Method
Isophorone diamine 2855-13-2	EC50	23 mg/l	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
C18 Fatty acid dimer, tall oil fatty acid, triethylenetetramine polymer 68082-29-1	EC50	7,07 mg/l	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
benzyl alcohol 100-51-6	EC50	230 mg/l	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
1,5-Pentanediamine, 2-methyl- 15520-10-2	EC50	19,8 mg/l	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
Formaldehyde, polymer with benzenamine, hydrogenated 135108-88-2	EC50	15,4 mg/l	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
Salicylic acid 69-72-7	EC50	870 mg/l	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
N-(3-(Trimethoxysilyl)propyl)ethylenediamine 1760-24-3	EC50	87,4 mg/l	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
N,N'-Ethane-1,2-diylbis(12-	EL50	Toxicity > Water	48 h	Daphnia magna	OECD Guideline 202

hydroxyoctadecan-1-amide) 123-26-2		solubility			(Daphnia sp. Acute Immobilisation Test)
3,6-diazaoctanethylenediamine 112-24-3	EC50	31 mg/l	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
4,4'-Methylenebis(cyclohexylamine) 1761-71-3	EC50	7,07 mg/l	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)

Chronic toxicity to aquatic invertebrates

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Value type	Value	Exposure time	Species	Method
Isophorone diamine 2855-13-2	NOEC	3 mg/l	21 d	Daphnia magna	OECD Guideline 202 (Daphnia sp. Chronic Immobilisation Test)
benzyl alcohol 100-51-6	NOEC	51 mg/l	21 d	Daphnia magna	OECD 211 (Daphnia magna, Reproduction Test)
1,5-Pentanediamine, 2-methyl- 15520-10-2	NOEC	4,16 mg/l	21 d	Daphnia magna	OECD 211 (Daphnia magna, Reproduction Test)
Salicylic acid 69-72-7	NOEC	10 mg/l	21 d	Daphnia magna	OECD Guideline 202 (Daphnia sp. Chronic Immobilisation Test)
N-(3-(Trimethoxysilyl)propyl)ethylenediamine 1760-24-3	NOEC	> 1 mg/l	21 d	Daphnia magna	OECD 211 (Daphnia magna, Reproduction Test)
4,4'-Methylenebis(cyclohexylamine) 1761-71-3	NOEC	4 mg/l	21 d	Daphnia magna	OECD 211 (Daphnia magna, Reproduction Test)

Toxicity (Algae):

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Value type	Value	Exposure time	Species	Method
Isophorone diamine 2855-13-2	EC10	11,2 mg/l	72 h	Desmodesmus subspicatus	EU Method C.3 (Algal Inhibition test)
Isophorone diamine 2855-13-2	EC50	> 50 mg/l	72 h	Desmodesmus subspicatus	EU Method C.3 (Algal Inhibition test)
C18 Fatty acid dimer, tall oil fatty acid, triethylenetetramine polymer 68082-29-1	EC50	4,34 mg/l	72 h	Pseudokirchneriella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)
C18 Fatty acid dimer, tall oil fatty acid, triethylenetetramine polymer 68082-29-1	NOEC	0,5 mg/l	72 h	Pseudokirchneriella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)
benzyl alcohol 100-51-6	EC50	770 mg/l	72 h	Pseudokirchneriella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)
benzyl alcohol 100-51-6	NOEC	310 mg/l	72 h	Pseudokirchneriella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)
1,5-Pentanediamine, 2-methyl- 15520-10-2	EC50	> 100 mg/l	72 h	Pseudokirchneriella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)
1,5-Pentanediamine, 2-methyl- 15520-10-2	NOEC	10 mg/l	72 h	Pseudokirchneriella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)
Formaldehyde, polymer with benzenamine, hydrogenated 135108-88-2	EC10	1,2 mg/l	72 h	Desmodesmus subspicatus	EU Method C.3 (Algal Inhibition test)
Formaldehyde, polymer with benzenamine, hydrogenated 135108-88-2	EC50	43,94 mg/l	72 h	Desmodesmus subspicatus	EU Method C.3 (Algal Inhibition test)
Salicylic acid 69-72-7	EC50	> 100 mg/l	72 h	Scenedesmus subspicatus (new name: Desmodesmus subspicatus)	OECD Guideline 201 (Alga, Growth Inhibition Test)
N-(3- (Trimethoxysilyl)propyl)ethyl enediamine 1760-24-3	EC50	8,8 mg/l	96 h	Pseudokirchneriella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)
N-(3- (Trimethoxysilyl)propyl)ethyl enediamine 1760-24-3	NOEC	3,1 mg/l	96 h	Pseudokirchneriella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)
N,N'-Ethane-1,2-diylbis(12- hydroxyoctadecan-1-amide) 123-26-2	EC50	Toxicity > Water solubility	72 h	Pseudokirchneriella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)
N,N'-Ethane-1,2-diylbis(12- hydroxyoctadecan-1-amide) 123-26-2	NOEC	Toxicity > Water solubility	72 h	Pseudokirchneriella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)
3,6- diazaoctanethylenediamine 112-24-3	EC10	< 2,5 mg/l	72 h	Selenastrum capricornutum (new name: Pseudokirchneriella subcapitata)	OECD Guideline 201 (Alga, Growth Inhibition Test)
3,6- diazaoctanethylenediamine 112-24-3	EC50	20 mg/l	72 h	Selenastrum capricornutum (new name: Pseudokirchneriella subcapitata)	OECD Guideline 201 (Alga, Growth Inhibition Test)
4,4'- Methylenebis(cyclohexylamin e) 1761-71-3	EC50	> 140 - 200 mg/l	72 h	Scenedesmus subspicatus (new name: Desmodesmus subspicatus)	DIN 38412-09
4,4'- Methylenebis(cyclohexylamin e) 1761-71-3	EC10	100 mg/l	72 h	Scenedesmus subspicatus (new name: Desmodesmus subspicatus)	DIN 38412-09

Toxicity to microorganisms

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Value type	Value	Exposure time	Species	Method
Isophorone diamine 2855-13-2	EC10	1.120 mg/l	18 h	Pseudomonas putida	DIN 38412, part 8 (Pseudomonas Zellvermehrungshemm- Test)
C18 Fatty acid dimer, tall oil fatty acid, triethylenetetramine polymer 68082-29-1	EC10	130 mg/l	3 h	activated sludge of a predominantly domestic sewage	OECD Guideline 209 (Activated Sludge, Respiration Inhibition Test)

benzyl alcohol 100-51-6	EC10	658 mg/l	17 h	Pseudomonas putida	DIN 38412, part 8 (Pseudomonas Zellvermehrungshemm- Test)
Salicylic acid 69-72-7	EC50	> 1.000 mg/l	3 h	not specified	OECD Guideline 209 (Activated Sludge, Respiration Inhibition Test)
N-(3- (Trimethoxysilyl)propyl)ethyl enediamine 1760-24-3	EC 50	435 mg/l	3 h		OECD Guideline 209 (Activated Sludge, Respiration Inhibition Test)
3,6- diazaoctanethylenediamine 112-24-3	EC0	137 mg/l	30 min	Pseudomonas putida	DIN 38412, part 27 (Bacterial oxygen consumption test)
4,4'- Methylenebis(cyclohexylamin e) 1761-71-3	EC20	> 1.000 mg/l	3 h	activated sludge, industrial	OECD Guideline 209 (Activated Sludge, Respiration Inhibition Test)

12.2. Persistence and degradability

Hazardous substances CAS-No.	Result	Test type	Degradability	Exposure time	Method
Isophorone diamine 2855-13-2	not readily biodegradable.	aerobic	8 %	28 d	EU Method C.4-A (Determination of the "Ready" BiodegradabilityDissolved Organic Carbon (DOC) Die-Away Test)
C18 Fatty acid dimer, tall oil fatty acid, triethylenetetramine polymer 68082-29-1	not readily biodegradable.	no data	0 - 60 %	28 d	OECD Guideline 301 D (Ready Biodegradability: Closed Bottle Test)
benzyl alcohol 100-51-6	readily biodegradable	aerobic	92 - 96 %	14 d	OECD Guideline 301 C (Ready Biodegradability: Modified MITI Test (I))
1,5-Pentanediamine, 2-methyl- 15520-10-2	readily biodegradable	aerobic	100 %	21 d	OECD Guideline 301 D (Ready Biodegradability: Closed Bottle Test)
Salicylic acid 69-72-7	readily biodegradable	aerobic	88,1 %	15 d	EU Method C.4-F (Determination of the "Ready" BiodegradabilityMITI Test)
Salicylic acid 69-72-7	inherently biodegradable	aerobic	100 %	4 d	OECD Guideline 302 B (Inherent biodegradability: Zahn- Wellens/EMPA Test)
N-(3- (Trimethoxysilyl)propyl)ethyl enediamine 1760-24-3		aerobic	50 %		OECD Guideline 301 A (new version) (Ready Biodegradability: DOC Die Away Test)
N,N'-Ethane-1,2-diylbis(12- hydroxyoctadecan-1-amide) 123-26-2	not readily biodegradable.	aerobic	22 %	28 d	OECD Guideline 301 D (Ready Biodegradability: Closed Bottle Test)
3,6- diazaoctanethylenediamine 112-24-3	not inherently biodegradable	aerobic	0 %	28 d	OECD Guideline 302 B (Inherent biodegradability: Zahn- Wellens/EMPA Test)
3,6- diazaoctanethylenediamine 112-24-3	not readily biodegradable.	aerobic	0 %	162 d	OECD Guideline 301 D (Ready Biodegradability: Closed Bottle Test)
4,4'- Methylenebis(cyclohexylamin e) 1761-71-3	not readily biodegradable.	aerobic	0 %	28 d	OECD Guideline 301 C (Ready Biodegradability: Modified MITI Test (I))

12.3. Bioaccumulative potential

Hazardous substances CAS-No.	Bioconcentratio n factor (BCF)	Exposure time	Temperature	Species	Method
Formaldehyde, polymer with benzenamine, hydrogenated 135108-88-2	18 - 219	56 d		Cyprinus carpio	OECD Guideline 305 C (Bioaccumulation: Test for the Degree of Bioconcentration in Fish)
4,4'- Methylenebis(cyclohexylamin e) 1761-71-3	< 60	60 d	24 °C	Cyprinus carpio	OECD Guideline 305 C (Bioaccumulation: Test for the Degree of Bioconcentration in Fish)

12.4. Mobility in soil

Cured adhesives are immobile.

Hazardous substances CAS-No.	LogPow	Temperature	Method
Isophorone diamine 2855-13-2	0,99	23 °C	OECD Guideline 107 (Partition Coefficient (n-octanol / water), Shake Flask Method)
C18 Fatty acid dimer, tall oil fatty acid, triethylenetetramine polymer 68082-29-1	10,34		QSAR (Quantitative Structure Activity Relationship)
benzyl alcohol 100-51-6	1,05	20 °C	EU Method A.8 (Partition Coefficient)
1,5-Pentanediamine, 2-methyl- 15520-10-2	<= 1	25 °C	other guideline:
Formaldehyde, polymer with benzenamine, hydrogenated 135108-88-2	2,68	21 °C	EU Method A.8 (Partition Coefficient)
Salicylic acid 69-72-7	2,26	20 °C	OECD Guideline 107 (Partition Coefficient (n-octanol / water), Shake Flask Method)
N-(3-(Trimethoxysilyl)propyl)ethylenediamine 1760-24-3	-1,67		not specified
N,N'-Ethane-1,2-diylbis(12-hydroxyoctadecan-1-amide) 123-26-2	5,86		OECD Guideline 117 (Partition Coefficient (n-octanol / water), HPLC Method)
3,6-diazaoctanethylenediamine 112-24-3	-2,65		OECD Guideline 107 (Partition Coefficient (n-octanol / water), Shake Flask Method)
4,4'-Methylenebis(cyclohexylamine) 1761-71-3	2,2	23 °C	OECD Guideline 107 (Partition Coefficient (n-octanol / water), Shake Flask Method)

12.5. Results of PBT and vPvB assessment

Hazardous substances CAS-No.	PBT / vPvB
Isophorone diamine 2855-13-2	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.
C18 Fatty acid dimer, tall oil fatty acid, triethylenetetramine polymer 68082-29-1	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.
benzyl alcohol 100-51-6	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.
1,5-Pentanediamine, 2-methyl- 15520-10-2	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.
Formaldehyde, polymer with benzenamine, hydrogenated 135108-88-2	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.
Salicylic acid 69-72-7	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.
N-(3-(Trimethoxysilyl)propyl)ethylenediamine 1760-24-3	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.
N,N'-Ethane-1,2-diylbis(12-hydroxyoctadecan-1-amide) 123-26-2	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.
3,6-diazaoctanethylenediamine 112-24-3	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.
4,4'-Methylenebis(cyclohexylamine) 1761-71-3	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.

12.6. Endocrine disrupting properties

not applicable

12.7. Other adverse effects

No data available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product disposal:

Dispose of in accordance with local and national regulations.

Do not empty into drains / surface water / ground water.

Disposal of uncleaned packages:

After use, tubes, cartons and bottles containing residual product should be disposed of as chemically contaminated waste in an authorised legal land fill site or incinerated.

Waste code

08 04 09* waste adhesives and sealants containing organic solvents and other dangerous substances

The valid EWC waste code numbers are source-related. The manufacturer is therefore unable to specify EWC waste codes for the articles or products used in the various sectors. The EWC codes listed are intended as a recommendation for users. We will be happy to advise you.

SECTION 14: Transport information

14.1.

UN number or ID number

ADR	1759
RID	1759
ADN	1759
IMDG	1759
IATA	1759

14.2.

UN proper shipping name

ADR	CORROSIVE SOLID, N.O.S. (Isophoronediamine,2-Methylpentane-1,5-diamine)
RID	CORROSIVE SOLID, N.O.S. (Isophoronediamine,2-Methylpentane-1,5-diamine)
ADN	CORROSIVE SOLID, N.O.S. (Isophoronediamine,2-Methylpentane-1,5-diamine)
IMDG	CORROSIVE SOLID, N.O.S. (Isophoronediamine,2-Methylpentane-1,5-diamine)
IATA	Corrosive solid, n.o.s. (Isophoronediamine,2-Methylpentane-1,5-diamine)

14.3.

Transport hazard class(es)

ADR	8
RID	8
ADN	8
IMDG	8
IATA	8

14.4.

Packing group

ADR	II
RID	II
ADN	II
IMDG	II
IATA	II

14.5.

Environmental hazards

ADR	not applicable
RID	not applicable
ADN	not applicable
IMDG	not applicable
IATA	not applicable

14.6.

Special precautions for user

ADR	not applicable
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RID	Tunnelcode: (E)
ADN	not applicable
IMDG	not applicable
IATA	not applicable

14.7. Maritime transport in bulk according to IMO instruments

not applicable

SECTION 15: Regulatory information**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture**

Ozone Depleting Substance (ODS) (Regulation (EC) No 1005/2009):	Not applicable
Prior Informed Consent (PIC) (Regulation (EU) No 649/2012):	Not applicable
Persistent organic pollutants (Regulation (EU) 2019/1021):	Not applicable
VOC content (2010/75/EC)	7,23 %

15.2. Chemical safety assessment

A chemical safety assessment has not been carried out.

SECTION 16: Other information

The labelling of the product is indicated in Section 2. The full text of all abbreviations indicated by codes in this safety data sheet are as follows:

H301 Toxic if swallowed.
 H302 Harmful if swallowed.
 H312 Harmful in contact with skin.
 H314 Causes severe skin burns and eye damage.
 H315 Causes skin irritation.
 H317 May cause an allergic skin reaction.
 H318 Causes serious eye damage.
 H319 Causes serious eye irritation.
 H332 Harmful if inhaled.
 H335 May cause respiratory irritation.
 H361d Suspected of damaging the unborn child.
 H373 May cause damage to organs through prolonged or repeated exposure.
 H411 Toxic to aquatic life with long lasting effects.
 H412 Harmful to aquatic life with long lasting effects.
 H413 May cause long lasting harmful effects to aquatic life.

ED:	Substance identified as having endocrine disrupting properties
EU OEL:	Substance with a Union workplace exposure limit
EU EXPLD 1:	Substance listed in Annex I, Reg (EC) No. 2019/1148
EU EXPLD 2	Substance listed in Annex II, Reg (EC) No. 2019/1148
SVHC:	Substance of very high concern (REACH Candidate List)
PBT:	Substance fulfilling persistent, bioaccumulative and toxic criteria
PBT/vPvB:	Substance fulfilling persistent, bioaccumulative and toxic plus very persistent and very bioaccumulative criteria
vPvB:	Substance fulfilling very persistent and very bioaccumulative criteria

Further information:

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This information is based on our current level of knowledge and relates to the product in the state in which it is delivered. It is intended to describe our products from the point of view of safety requirements and is not intended to guarantee any particular properties.

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