



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

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LOCTITE EA 3478B EXTSFG

SDS No. : 509018
V005.0

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

1.1. Product identifier

LOCTITE EA 3478B EXTSFG

Contains:

C18 Fatty acid dimer, tall oil fatty acid, triethylenetetramine polymer
Amines, polyethylenepoly-, triethylenetetramine fraction
Diethylenetriamine
Phenol, styrenated
Triethylenetetramine
1H-Imidazole, 2-ethyl-4-methyl-

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
Wood Lane End
HP2 4RQ Hemel Hempstead

Great Britain

Phone: +44 1442 278000
Fax-no.: +44 1442 278071

ua-productsafety.uk@uk.henkel.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):

Acute toxicity	Category 3
H331 Toxic if inhaled.	
Route of Exposure: Inhalation	
Skin corrosion	Category 1B
H314 Causes severe skin burns and eye damage.	
Skin sensitizer	Category 1
H317 May cause an allergic skin reaction.	
Chronic hazards to the aquatic environment	Category 3
H412 Harmful to aquatic life with long lasting effects.	

2.2. Label elements

Label elements (CLP):

Hazard pictogram:	
Signal word:	Danger
Hazard statement:	H314 Causes severe skin burns and eye damage. H317 May cause an allergic skin reaction. H331 Toxic if inhaled. H412 Harmful to aquatic life with long lasting effects.
Precautionary statement: Prevention	P261 Avoid breathing vapours. 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/ shower. P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing. 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.

2.3. Other hazards

None if used properly.

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

SECTION 3: Composition/information on ingredients

3.2. Mixtures

General chemical description:

Part B of a two part adhesive

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

Hazardous components CAS-No.	EC Number REACH-Reg No.	content	Classification
C18 Fatty acid dimer, tall oil fatty acid, triethylenetetramine polymer 68082-29-1	500-191-5 01-2119972320-44	10- 20 %	Skin Irrit. 2 H315 Eye Dam. 1 H318 Skin Sens. 1 H317 Aquatic Chronic 2 H411
Amines, polyethylenepoly-, triethylenetetramine fraction 90640-67-8	292-588-2 01-2119487919-13	5- < 10 %	Acute Tox. 4; Oral H302 Acute Tox. 4; Dermal H312 Skin Corr. 1B H314 Skin Sens. 1 H317 Aquatic Chronic 3 H412
Diethylenetriamine 111-40-0	203-865-4 01-2119473793-27	5- < 10 %	Acute Tox. 4; Oral H302 Acute Tox. 4; Dermal H312 Skin Corr. 1B H314 Skin Sens. 1 H317 Acute Tox. 2; Inhalation H330 STOT SE 3 H335
Phenol, styrenated 61788-44-1	262-975-0 01-2119980970-27	1- < 5 %	Aquatic Chronic 2 H411 Skin Irrit. 2 H315 Skin Sens. 1 H317
Triethylenetetramine 112-24-3	203-950-6 01-2119487919-13	1- < 3 %	Acute Tox. 4; Oral H302 Acute Tox. 4; Dermal H312 Skin Sens. 1 H317 Skin Corr. 1B H314 Aquatic Chronic 3 H412
1H-Imidazole, 2-ethyl-4-methyl- 931-36-2	213-234-5 01-2119980935-21	0,1- < 1 %	Acute Tox. 4; Oral H302 Eye Dam. 1 H318 Skin Irrit. 2 H315 Skin Sens. 1B H317
4-Methylimidazole 822-36-6	212-497-3	0,1- < 1 %	Skin Corr. 1B H314 Acute Tox. 4 H302 Acute Tox. 3 H311 Carc. 2 H351

**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.

Obtain medical attention if irritation persists.

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

Causes burns.

RESPIRATORY: Irritation, coughing, shortness of breath, chest tightness.

SKIN: Rash, Urticaria.

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

5.2. Special hazards arising from the substance or mixture

Formation of toxic gases is possible during heating or in fires.

5.3. Advice for firefighters

Wear self-contained breathing apparatus.

Wear protective equipment.

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.

Avoid skin and eye contact.

Wear protective equipment.

6.2. Environmental precautions

Do not let product enter drains.

6.3. Methods and material for containment and cleaning up

For small spills wipe up with paper towel and place in container for disposal.

For large spills absorb onto inert absorbent material and place in sealed container for disposal.

Wear protective clothing, gloves and safety glasses.

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

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.

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

Ingredient [Regulated substance]	ppm	mg/m ³	Value type	Short term exposure limit category / Remarks	Regulatory list
Calcium carbonate 471-34-1 [CALCIUM CARBONATE, INHALABLE DUST]		10	Time Weighted Average (TWA):		EH40 WEL
Calcium carbonate 471-34-1 [CALCIUM CARBONATE, RESPIRABLE DUST]		4	Time Weighted Average (TWA):		EH40 WEL
Calcium carbonate 471-34-1 [LIMESTONE, RESPIRABLE MARBLE, RESPIRABLE]		4	Time Weighted Average (TWA):		EH40 WEL
Calcium carbonate 471-34-1 [LIMESTONE, TOTAL INHALABLE MARBLE, TOTAL INHALABLE]		10	Time Weighted Average (TWA):		EH40 WEL
2,2'-Iminodi(ethylamine) 111-40-0 [2,2'-IMINODI(ETHYLAMINE)]			Skin designation:	Can be absorbed through the skin.	EH40 WEL
2,2'-Iminodi(ethylamine) 111-40-0 [2,2'-IMINODI(ETHYLAMINE)]	1	4,3	Time Weighted Average (TWA):		EH40 WEL
Titanium dioxide 13463-67-7 [TITANIUM DIOXIDE, TOTAL INHALABLE]		10	Time Weighted Average (TWA):		EH40 WEL
Titanium dioxide 13463-67-7 [TITANIUM DIOXIDE, RESPIRABLE]		4	Time Weighted Average (TWA):		EH40 WEL

Occupational Exposure LimitsValid for
Ireland

Ingredient [Regulated substance]	ppm	mg/m ³	Value type	Short term exposure limit category / Remarks	Regulatory list
Calcium carbonate 471-34-1 [CALCIUM CARBONATE, RESPIRABLE DUST]		4	Time Weighted Average (TWA):		IR_OEL
Calcium carbonate 471-34-1 [CALCIUM CARBONATE, TOTAL INHALABLE DUST]		10	Time Weighted Average (TWA):		IR_OEL
2,2'-Iminodi(ethylamine) 111-40-0 [DIETHYLENE TRIAMINE]	1	4	Time Weighted Average (TWA):		IR_OEL
2,2'-Iminodi(ethylamine) 111-40-0 [DIETHYLENE TRIAMINE]			Skin designation:	Can be absorbed through the skin.	IR_OEL
Titanium dioxide 13463-67-7 [TITANIUM DIOXIDE, RESPIRABLE DUST]		4	Time Weighted Average (TWA):		IR_OEL
Titanium dioxide 13463-67-7 [TITANIUM DIOXIDE, TOTAL INHALABLE DUST]		10	Time Weighted Average (TWA):		IR_OEL
Stearic acid 57-11-4 [STEARATES (EXCEPT LEAD		10	Time Weighted Average (TWA):		IR_OEL

STEARATE)]					
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Predicted No-Effect Concentration (PNEC):

Name on list	Environmental Compartment	Exposure period	Value				Remarks
			mg/l	ppm	mg/kg	others	
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		
Amines, polyethylenepoly-, triethylenetetramine fraction 90640-67-8	aqua (intermittent releases)					0,2 mg/L	
Amines, polyethylenepoly-, triethylenetetramine fraction 90640-67-8	aqua (freshwater)					0,19 mg/L	
Amines, polyethylenepoly-, triethylenetetramine fraction 90640-67-8	aqua (marine water)					0,038 mg/L	
Amines, polyethylenepoly-, triethylenetetramine fraction 90640-67-8	sediment (freshwater)				95,9 mg/kg		
Amines, polyethylenepoly-, triethylenetetramine fraction 90640-67-8	sediment (marine water)				19,2 mg/kg		
Amines, polyethylenepoly-, triethylenetetramine fraction 90640-67-8	soil				19,1 mg/kg		
Amines, polyethylenepoly-, triethylenetetramine fraction 90640-67-8	sewage treatment plant (STP)					4,25 mg/L	
Amines, polyethylenepoly-, triethylenetetramine fraction 90640-67-8	oral				0,18 mg/kg		
2,2'-Iminodi(ethylamine) 111-40-0	aqua (freshwater)					0,56 mg/L	
2,2'-Iminodi(ethylamine) 111-40-0	aqua (marine water)					0,056 mg/L	
2,2'-Iminodi(ethylamine) 111-40-0	aqua (intermittent releases)					0,32 mg/L	
2,2'-Iminodi(ethylamine) 111-40-0	sediment (freshwater)				1072 mg/kg		
2,2'-Iminodi(ethylamine) 111-40-0	sediment (marine water)				107,2 mg/kg		
2,2'-Iminodi(ethylamine) 111-40-0	sewage treatment plant (STP)					6 mg/L	
2,2'-Iminodi(ethylamine) 111-40-0	soil				7,97 mg/kg		
2,2'-Iminodi(ethylamine) 111-40-0	Air						
2-Ethyl-4-methylimidazole 931-36-2	aqua (freshwater)					0,0681 mg/L	
2-Ethyl-4-methylimidazole 931-36-2	aqua (marine water)					0,00681 mg/L	
2-Ethyl-4-methylimidazole 931-36-2	aqua (intermittent releases)					0,681 mg/L	

2-Ethyl-4-methylimidazole 931-36-2	sewage treatment plant (STP)					65 mg/L	
2-Ethyl-4-methylimidazole 931-36-2	sediment (freshwater)				34,9 mg/kg		
2-Ethyl-4-methylimidazole 931-36-2	sediment (marine water)				3,49 mg/kg		
2-Ethyl-4-methylimidazole 931-36-2	soil				6,91 mg/kg		

Derived No-Effect Level (DNEL):

Name on list	Application Area	Route of Exposure	Health Effect	Exposure Time	Value	Remarks
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 bw/day	
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 bw/day	
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 bw/day	
Amines, polyethylenepoly-, triethylenetetramine fraction 90640-67-8	Workers	Inhalation	Acute/short term exposure - systemic effects		5380 mg/m ³	
Amines, polyethylenepoly-, triethylenetetramine fraction 90640-67-8	Workers	dermal	Long term exposure - systemic effects		0,57 mg/kg bw/day	
Amines, polyethylenepoly-, triethylenetetramine fraction 90640-67-8	Workers	Inhalation	Long term exposure - systemic effects		1 mg/m ³	
Amines, polyethylenepoly-, triethylenetetramine fraction 90640-67-8	Workers	dermal	Long term exposure - local effects		0,028 mg/cm ²	
Amines, polyethylenepoly-, triethylenetetramine fraction 90640-67-8	General population	dermal	Acute/short term exposure - systemic effects		8 mg/kg bw/day	
Amines, polyethylenepoly-, triethylenetetramine fraction 90640-67-8	General population	Inhalation	Acute/short term exposure - systemic effects		1600 mg/m ³	
Amines, polyethylenepoly-, triethylenetetramine fraction 90640-67-8	General population	oral	Acute/short term exposure - systemic effects		20 mg/kg bw/day	
Amines, polyethylenepoly-, triethylenetetramine fraction 90640-67-8	General population	dermal	Acute/short term exposure - local effects		1 mg/cm ²	
Amines, polyethylenepoly-, triethylenetetramine fraction 90640-67-8	General population	dermal	Long term exposure - systemic effects		0,25 mg/kg bw/day	
Amines, polyethylenepoly-, triethylenetetramine fraction 90640-67-8	General population	Inhalation	Long term exposure - systemic effects		0,29 mg/m ³	
Amines, polyethylenepoly-, triethylenetetramine fraction 90640-67-8	General population	oral	Long term exposure - systemic effects		0,41 mg/kg bw/day	
Amines, polyethylenepoly-, triethylenetetramine fraction 90640-67-8	General population	dermal	Long term exposure - local effects		0,43 mg/cm ²	
2,2'-Iminodi(ethylamine) 111-40-0	Workers	dermal	Long term exposure - systemic effects		11,4 mg/kg	
2,2'-Iminodi(ethylamine) 111-40-0	Workers	dermal	Long term exposure - local effects		1,1 mg/kg	
2,2'-Iminodi(ethylamine) 111-40-0	Workers	Inhalation	Acute/short term exposure - systemic effects		92,1 mg/m ³	
2,2'-Iminodi(ethylamine) 111-40-0	Workers	Inhalation	Acute/short term exposure - local effects		2,6 mg/m ³	
2,2'-Iminodi(ethylamine) 111-40-0	Workers	Inhalation	Long term exposure - systemic effects		15,4 mg/m ³	
2,2'-Iminodi(ethylamine) 111-40-0	Workers	Inhalation	Long term exposure - local effects		0,87 mg/m ³	
2,2'-Iminodi(ethylamine) 111-40-0	General population	dermal	Acute/short term exposure - local		4,88 mg/kg	

			effects			
2,2'-Iminodi(ethylamine) 111-40-0	General population	Inhalation	Acute/short term exposure - systemic effects		27,5 mg/m ³	
2,2'-Iminodi(ethylamine) 111-40-0	General population	dermal	Long term exposure - systemic effects		4,88 mg/kg	
2,2'-Iminodi(ethylamine) 111-40-0	General population	Inhalation	Long term exposure - systemic effects		4,6 mg/m ³	
2-Ethyl-4-methylimidazole 931-36-2	Workers	inhalation	Long term exposure - systemic effects		4,41 mg/m ³	
2-Ethyl-4-methylimidazole 931-36-2	Workers	dermal	Long term exposure - local effects		0,289 mg/cm ²	

Biological Exposure Indices:

None

8.2. Exposure controls:

Engineering controls:

Ensure good ventilation/extraction.

Respiratory protection:

Ensure adequate ventilation.

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

Filter type: A (EN 14387)

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:

Safety glasses with sideshields or chemical safety goggles should be worn if there is a risk of splashing.

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**

Appearance	liquid liquid white
Odor	Amine
Odour threshold	No data available / Not applicable
pH	Not applicable
Initial boiling point	No data available / Not applicable
Flash point	100 °C (212 °F); None
Decomposition temperature	No data available / Not applicable
Vapour pressure	No data available / Not applicable
Density (25 °C (77 °F))	1,42 - 1,44 g/cm ³
Bulk density	No data available / Not applicable
Viscosity (; speed of rotation: 1 s ⁻¹)	>= 2.000.000 mPa.s
Viscosity (kinematic)	No data available / Not applicable
Explosive properties	No data available / Not applicable
Solubility (qualitative) (20 °C (68 °F); Solvent: Water)	Not miscible
Solidification temperature	No data available / Not applicable
Melting point	No data available / Not applicable
Flammability	No data available / Not applicable
Auto-ignition temperature	No data available / Not applicable
Explosive limits	No data available / Not applicable
Partition coefficient: n-octanol/water	No data available / Not applicable
Evaporation rate	No data available / Not applicable
Vapor density	No data available / Not applicable
Oxidising properties	No data available / Not applicable

9.2. Other information

No data available / Not applicable

SECTION 10: Stability and reactivity**10.1. Reactivity**

Reaction with strong bases
Reaction with strong acids.
Reaction with strong oxidants.

10.2. Chemical stability

Stable under recommended storage conditions.

10.3. Possibility of hazardous reactions

See section reactivity

10.4. Conditions to avoid

No decomposition if used according to specifications.
Avoid contact with acids and oxidizing agents.

10.5. Incompatible materials

See section reactivity.

10.6. Hazardous decomposition products

Oxides of carbon.

SECTION 11: Toxicological information**11.1. Information on toxicological effects****General toxicological information:**

The mixture is classified based on the available hazard information for the ingredients as defined in the classification criteria for mixtures for each hazard class or differentiation in Annex I to Regulation (EC) No 1272/2008. Relevant available health/ecological information for the substances listed under Section 3 is provided in the following.

Oral toxicity:

May cause irritation to the digestive tract.

Inhalative toxicity:

Toxic if inhaled.

Skin irritation:

Causes severe skin burns and eye damage.

Eye irritation:

Corrosive
Avoid eye contact.

Sensitizing:

May cause an allergic skin reaction.

Acute oral toxicity:

Hazardous components CAS-No.	Value type	Value	Route of application	Exposure time	Species	Method
C18 Fatty acid dimer, tall oil fatty acid, triethylenetetramine polymer 68082-29-1	LD50	> 2.000 mg/kg	oral		rat	OECD Guideline 423 (Acute Oral toxicity)
Amines, polyethylenepoly-, triethylenetetramine fraction 90640-67-8	LD50	1.716 mg/kg	oral		rat	OECD Guideline 401 (Acute Oral Toxicity)
Diethylenetriamine 111-40-0	LD50	1.553 mg/kg	oral		rat	not specified
Phenol, styrenated 61788-44-1	LD50	> 2.500 mg/kg	oral		rat	not specified
Triethylenetetramine 112-24-3	LD50	1.591,4 mg/kg	oral		rat	OECD Guideline 401 (Acute Oral Toxicity)
1H-Imidazole, 2-ethyl-4- methyl- 931-36-2	LD50	622 mg/kg	oral		rat	not specified

Acute inhalative toxicity:

Hazardous components CAS-No.	Value type	Value	Route of application	Exposure time	Species	Method
Diethylenetriamine 111-40-0	NOEL	0,07 mg/l			rat	OECD Guideline 403 (Acute Inhalation Toxicity)

Acute dermal toxicity:

Hazardous components CAS-No.	Value type	Value	Route of application	Exposure time	Species	Method
C18 Fatty acid dimer, tall oil fatty acid, triethylenetetramine polymer 68082-29-1	LD50	> 2.000 mg/kg	dermal		rabbit	OECD Guideline 402 (Acute Dermal Toxicity)
Amines, polyethylenepoly-, triethylenetetramine fraction 90640-67-8	LD50	1.465 mg/kg	dermal		rabbit	OECD Guideline 402 (Acute Dermal Toxicity)
Diethylenetriamine 111-40-0	LD50	1.045 mg/kg	dermal		rabbit	not specified
Triethylenetetramine 112-24-3	LD50	1.465 mg/kg	dermal		rabbit	OECD Guideline 402 (Acute Dermal Toxicity)

Skin corrosion/irritation:

Hazardous components 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)
Diethylenetriamine 111-40-0	corrosive	15 min	rabbit	BASF Test
Triethylenetetramine 112-24-3	corrosive		rabbit	
1H-Imidazole, 2-ethyl-4- methyl- 931-36-2	not irritating		rabbit	OECD Guideline 404 (Acute Dermal Irritation / Corrosion)

Serious eye damage/irritation:

Hazardous components CAS-No.	Result	Exposure time	Species	Method
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)
Diethylenetriamine 111-40-0	corrosive	30 s	rabbit	
1H-Imidazole, 2-ethyl-4- methyl- 931-36-2	highly irritating		rabbit	OECD Guideline 405 (Acute Eye Irritation / Corrosion)

Respiratory or skin sensitization:

Hazardous components CAS-No.	Result	Test type	Species	Method
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)
Diethylenetriamine 111-40-0	sensitising	Mouse local lymphnode assay (LLNA)	mouse	OECD Guideline 429 (Skin Sensitisation: Local Lymph Node Assay)
Triethylenetetramine 112-24-3	sensitising	Guinea pig maximisation test	guinea pig	Magnusson and Kligman Method

Germ cell mutagenicity:

Hazardous components CAS-No.	Result	Type of study / Route of administration	Metabolic activation / Exposure time	Species	Method
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)
	negative	mammalian cell gene mutation assay	with and without		OECD Guideline 476 (In vitro Mammalian Cell Gene Mutation Test)
Diethylenetriamine 111-40-0	positive	bacterial reverse mutation assay (e.g Ames test)	with and without		OECD Guideline 471 (Bacterial Reverse Mutation Assay)
	negative	in vitro mammalian chromosome aberration test	with and without		Chromosome Aberration Test
Diethylenetriamine 111-40-0	negative	oral: gavage		mouse	OECD Guideline 474 (Mammalian Erythrocyte Micronucleus Test)
	negative	oral: gavage		mouse	
Triethylenetetramine 112-24-3	positive	bacterial reverse mutation assay (e.g Ames test)	with and without		

Carcinogenicity:

Hazardous components CAS-No.	Result	Species	Sex	Exposure time/Frequency of treatment	Route of application	Method
Diethylenetriamine 111-40-0	not carcinogenic	mouse	male	lifetime (appr. 587 d) 3 d/w	dermal	OECD Guideline 453 (Combined Chronic Toxicity / Carcinogenicity Studies)

Reproductive toxicity:

Hazardous substances CAS-No.	Result / Classification	Species	Exposure time	Species	Method
Diethylenetriamine 111-40-0	NOAEL P = 100 mg/kg NOAEL F1 = 30 mg/kg	screening oral: gavage	29-54 d	rat	OECD Guideline 421 (Reproduction / Developmental Toxicity Screening Test)

Repeated dose toxicity

Hazardous components CAS-No.	Result	Route of application	Exposure time / Frequency of treatment	Species	Method
Diethylenetriamine 111-40-0	NOAEL=70 - 80 mg/kg	oral: feed	90 ddaily	rat	
Diethylenetriamine 111-40-0	NOAEL=0,55 mg/l	inhalation: vapour	15 d6 h/d	rat	

SECTION 12: Ecological information**General ecological information:**

The mixture is classified based on the available hazard information for the ingredients as defined in the classification criteria for mixtures for each hazard class or differentiation in Annex I to Regulation (EC) No 1272/2008. Relevant available health/ecological information for the substances listed under Section 3 is provided in the following.

12.1. Toxicity**Ecotoxicity:**

Harmful to aquatic life with long lasting effects.
Do not empty into drains / surface water / ground water.

Hazardous components CAS-No.	Value type	Value	Acute Toxicity Study	Exposure time	Species	Method
C18 Fatty acid dimer, tall oil fatty acid, triethylenetetramine polymer 68082-29-1	LC50	7,07 mg/l	Fish	96 h	Danio rerio	OECD Guideline 203 (Fish, Acute Toxicity Test)
C18 Fatty acid dimer, tall oil fatty acid, triethylenetetramine polymer 68082-29-1	EC50	7,07 mg/l	Daphnia	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	4,34 mg/l	Algae	72 h	Pseudokirchnerella 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	Algae	72 h	Pseudokirchnerella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)
C18 Fatty acid dimer, tall oil fatty acid, triethylenetetramine polymer 68082-29-1	EC10	130 mg/l	Bacteria	3 h	activated sludge of a predominantly domestic sewage	OECD Guideline 209 (Activated Sludge, Respiration Inhibition Test)
Amines, polyethylenepoly-, triethylenetetramine fraction 90640-67-8	LC50	570 mg/l	Fish	96 h	Poecilia reticulata	OECD Guideline 203 (Fish, Acute Toxicity Test)
Amines, polyethylenepoly-, triethylenetetramine fraction 90640-67-8	EC50	31 mg/l	Daphnia	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
Amines, polyethylenepoly-, triethylenetetramine fraction 90640-67-8	EC10	< 2,5 mg/l	Algae	72 h	Selenastrum capricornutum (new name: Pseudokirchnerella subcapitata)	OECD Guideline 201 (Alga, Growth Inhibition Test)
	EC50	20 mg/l	Algae	72 h	Selenastrum capricornutum (new name: Pseudokirchnerella subcapitata)	OECD Guideline 201 (Alga, Growth Inhibition Test)
Diethylenetriamine 111-40-0	LC50	430 mg/l	Fish	96 h	Poecilia reticulata	EU Method C.1 (Acute Toxicity for Fish)
	NOEC	> 10 mg/l	Fish	28 d	Gasterosteus aculeatus	OECD Guideline 210 (fish early life stage toxicity test)
Diethylenetriamine 111-40-0	EC50	64,6 mg/l	Daphnia	48 h	Daphnia magna	EU Method C.2 (Acute Toxicity for Daphnia)
Diethylenetriamine 111-40-0	EC50	1.164 mg/l	Algae	72 h	Selenastrum capricornutum (new name: Pseudokirchnerella subcapitata)	OECD Guideline 201 (Alga, Growth Inhibition Test)
	NOEC	10 mg/l	Algae	72 h	Selenastrum capricornutum (new name: Pseudokirchnerella subcapitata)	OECD Guideline 201 (Alga, Growth Inhibition Test)
Diethylenetriamine 111-40-0	NOEC	6 mg/l	Bacteria	3 h	anaerobic bacteria	not specified
Diethylenetriamine 111-40-0	NOEC	5,6 mg/l	chronic Daphnia	21 d	Daphnia magna	EU Method C.20 (Daphnia magna Reproduction Test)
Phenol, styrenated 61788-44-1	LC50	3,2 mg/l	Fish	96 h	Brachydanio rerio (new name: Danio rerio)	OECD Guideline 203 (Fish, Acute Toxicity Test)
Phenol, styrenated 61788-44-1	EC50	> 1 - 10 mg/l	Daphnia	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
Phenol, styrenated 61788-44-1	EC50	3,14 mg/l	Algae	72 h		OECD Guideline 201 (Alga, Growth Inhibition Test)
Phenol, styrenated 61788-44-1	EC 50	362 mg/l	Bacteria	3 h		ISO 8192 (Test for Inhibition of Oxygen Consumption by Activated Sludge)
Triethylenetetramine 112-24-3	LC50	570 mg/l	Fish	96 h	Poecilia reticulata	OECD Guideline 203 (Fish, Acute Toxicity Test)
Triethylenetetramine 112-24-3	EC50	31 mg/l	Daphnia	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp.

Triethylenetetramine 112-24-3	EC10	< 2,5 mg/l	Algae	72 h	Senastrum capricornutum (new name: Pseudokirchnerella subcapitata)	Acute Immobilisation Test) OECD Guideline 201 (Alga, Growth Inhibition Test)
	EC50	20 mg/l	Algae	72 h		
Triethylenetetramine 112-24-3 1H-Imidazole, 2-ethyl-4- methyl- 931-36-2	EC0	137 mg/l	Bacteria	30 min	Leuciscus idus	DIN 38412-15
	LC50	68,1 mg/l	Fish	96 h		

12.2. Persistence and degradability

Persistence and Biodegradability:

No data available for the product.

Hazardous components CAS-No.	Result	Route of application	Degradability	Method
C18 Fatty acid dimer, tall oil fatty acid, triethylenetetramine polymer 68082-29-1	Not readily biodegradable.	no data	0 - 60 %	OECD Guideline 301 D (Ready Biodegradability: Closed Bottle Test)
Amines, polyethylenepoly-, triethylenetetramine fraction 90640-67-8		aerobic	0 %	OECD Guideline 301 D (Ready Biodegradability: Closed Bottle Test)
Diethylenetriamine 111-40-0	inherently biodegradable	aerobic	83 %	EU Method C.9 (Biodegradation: Zahn-Wellens Test)
	readily biodegradable	aerobic	87 %	OECD Guideline 301 D (Ready Biodegradability: Closed Bottle Test)
Phenol, styrenated 61788-44-1		aerobic	7 %	OECD Guideline 301 B (Ready Biodegradability: CO2 Evolution Test)
Triethylenetetramine 112-24-3		aerobic	0 %	OECD Guideline 301 D (Ready Biodegradability: Closed Bottle Test)
	under test conditions no biodegradation observed	aerobic	0 %	OECD Guideline 302 B (Inherent biodegradability: Zahn- Wellens/EMPA Test)
1H-Imidazole, 2-ethyl-4- methyl- 931-36-2	readily biodegradable	aerobic	86 %	OECD Guideline 301 A (new version) (Ready Biodegradability: DOC Die Away Test)

12.3. Bioaccumulative potential / 12.4. Mobility in soil

Mobility:

Cured adhesives are immobile.

Bioaccumulative potential:

No data available for the product.

Hazardous components CAS-No.	LogKow	Bioconcentration factor (BCF)	Exposure time	Species	Temperature	Method
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C18 Fatty acid dimer, tall oil fatty acid, triethylenetetramine polymer 68082-29-1	10,34					QSAR (Quantitative Structure Activity Relationship)
Amines, polyethylenepoly-, triethylenetetramine fraction 90640-67-8	-2,65					OECD Guideline 107 (Partition Coefficient (n-octanol / water), Shake Flask Method)
Diethylenetriamine 111-40-0		> 0,3 - < 6,3	42 d	Cyprinus carpio		OECD Guideline 305 C (Bioaccumulation: Test for the Degree of Bioconcentration in Fish)
Diethylenetriamine 111-40-0	-1,58				20 °C	QSAR (Quantitative Structure Activity Relationship)
Triethylenetetramine 112-24-3	-2,65					OECD Guideline 107 (Partition Coefficient (n-octanol / water), Shake Flask Method)

12.5. Results of PBT and vPvB assessment

Hazardous components CAS-No.	PBT/vPvB
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.
Amines, polyethylenepoly-, triethylenetetramine fraction 90640-67-8	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.
Diethylenetriamine 111-40-0	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.
Triethylenetetramine 112-24-3	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.
1H-Imidazole, 2-ethyl-4-methyl- 931-36-2	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.
4-Methylimidazole 822-36-6	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.

12.6. 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.

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**

ADR	2735
RID	2735
ADN	2735
IMDG	2735
IATA	2735

14.2. UN proper shipping name

ADR	AMINES, LIQUID, CORROSIVE, N.O.S. (Amines, polyethylenepoly-, triethylenetetramine fraction, Diethylenetriamine)
RID	AMINES, LIQUID, CORROSIVE, N.O.S. (Amines, polyethylenepoly-, triethylenetetramine fraction, Diethylenetriamine)
ADN	AMINES, LIQUID, CORROSIVE, N.O.S. (Amines, polyethylenepoly-, triethylenetetramine fraction, Diethylenetriamine)
IMDG	AMINES, LIQUID, CORROSIVE, N.O.S. (Amines, polyethylenepoly-, triethylenetetramine fraction, Diethylenetriamine)
IATA	Amines, liquid, corrosive, n.o.s. (Amines, polyethylenepoly-, triethylenetetramine fraction, Diethylenetriamine)

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

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

not applicable

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

VOC content

< 3 %

(2010/75/EC)

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:

- H302 Harmful if swallowed.
- H311 Toxic in contact with skin.
- 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.
- H330 Fatal if inhaled.
- H335 May cause respiratory irritation.
- H351 Suspected of causing cancer.
- H411 Toxic to aquatic life with long lasting effects.
- H412 Harmful to aquatic life with long lasting effects.

Further information:

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.

Label elements (DPD):

C - Corrosive



Risk phrases:

- R34 Causes burns.
- R43 May cause sensitisation by skin contact.
- R52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Safety phrases:

- S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
- S28 After contact with skin, wash immediately with plenty of water and soap.
- S36/37/39 Wear suitable protective clothing, gloves and eye/face protection.
- S45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
- S51 Use only in well-ventilated areas.
- S60 This material and its container must be disposed of as hazardous waste.

Contains:

- C18 Fatty acid dimer, tall oil fatty acid, triethylenetetramine polymer, Amines, polyethylenepoly-, triethylenetetramine fraction, Diethylenetriamine, Phenol, styrenated, Triethylenetetramine

Relevant changes in this safety data sheet are indicated by vertical lines at the left margin in the body of this document. Corresponding text is displayed in a different color on shadowed fields.