

## SAFETY DATA SHEET Permabond ET5429B

SECTION 1: Identification of the substance/mixture and of the company/undertaking		
1.1. Product identifier		
Product name	Permabond ET5429B	
1.2. Relevant identified uses of the substance or mixture and uses advised against		
Identified uses	Two-component, epoxy-based adhesive.	
1.3. Details of the supplier of t	he safety data sheet	
Supplier	Permabond Engineering Adhesives GmbH Niederkasseler Lohweg 18 40547 Düsseldorf Germany info.europe@permabond.com	
Manufacturer	Permabond Engineering Adhesives Ltd. Wessex Way Colden Common Winchester Hampshire SO21 1WP United Kingdom Tel: +44 (0)1962 711 661 Fax: +44 (0)1962 711 662 info@permabond.co.uk	
1.4. Emergency telephone nu	mber	
1.4. Emergency telephone num Emergency telephone	mber CHEMTREC UK: +(44)-870-8200418 CHEMTREC US: 800-424-9300 (CCN: 829878)	
Emergency telephone		
Emergency telephone	CHEMTREC UK: +(44)-870-8200418 CHEMTREC US: 800-424-9300 (CCN: 829878) CHEMTREC Ireland: +(353)-19014670 CHEMTREC Australia: +(61)-290372994 CHEMTREC New Zealand: +(64)-98010034	
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Emergency telephone National emergency telephone number SECTION 2: Hazards identific 2.1. Classification of the subst Classification (EC 1272/2008)	CHEMTREC UK: +(44)-870-8200418 CHEMTREC US: 800-424-9300 (CCN: 829878) CHEMTREC Ireland: +(353)-19014670 CHEMTREC Australia: +(61)-290372994 CHEMTREC New Zealand: +(64)-98010034 CHEMTREC New Zealand: +(64)-98010034	
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Emergency telephone National emergency telephone number SECTION 2: Hazards identific 2.1. Classification of the subst Classification (EC 1272/2008) Physical hazards	CHEMTREC UK: +(44)-870-8200418 CHEMTREC US: 800-424-9300 (CCN: 829878) CHEMTREC Ireland: +(353)-19014670 CHEMTREC Australia: +(61)-290372994 CHEMTREC New Zealand: +(64)-98010034 CHEMTREC New Zealand: +(64)-98010034 CHEMTREC or mixture Not Classified	
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Emergency telephone National emergency telephone number SECTION 2: Hazards identific 2.1. Classification of the subst Classification (EC 1272/2008) Physical hazards Health hazards Environmental hazards	CHEMTREC UK: +(44)-870-8200418 CHEMTREC US: 800-424-9300 (CCN: 829878) CHEMTREC Ireland: +(353)-19014670 CHEMTREC Australia: +(61)-290372994 CHEMTREC New Zealand: +(64)-98010034 CHEMTREC New Zealand: +(64)-98010034 CHEMTREC or mixture Not Classified Skin Corr. 1B - H314 Eye Dam. 1 - H318 Skin Sens. 1 - H317	

Hazard statements	H314 Causes severe skin burns and eye damage. H317 May cause an allergic skin reaction.
Precautionary statements	<ul> <li>P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.</li> <li>P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.</li> <li>P302+P352a IF ON SKIN: Wash with plenty of soap and water</li> <li>P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.</li> <li>P308+P313 IF exposed or concerned: Get medical advice/ attention.</li> </ul>
Contains	POLYAMINOAMIDE, ATBN POLYMER, 3,3'-OXYBIS(ETHYLENEOXY)BIS(PROPYLAMINE), 2-PIPERAZIN-1-YLETHYLAMINE
Supplementary precautionary statements	<ul> <li>P264 Wash contaminated skin thoroughly after handling.</li> <li>P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.</li> <li>P333+P313 If skin irritation or rash occurs: Get medical advice/ attention.</li> <li>P362+P364 Take off contaminated clothing and wash it before reuse.</li> <li>P405 Store locked up.</li> <li>P501 Dispose of contents/container in accordance with existing Community, National and local regulations.</li> </ul>

## 2.3. Other hazards

Skin Irrit. 2 - H315 Eye Irrit. 2 - H319

None under normal conditions. This substance is not classified as PBT or vPvB according to current EU criteria.

### SECTION 3: Composition/information on ingredients

POLYAMINOAMIDE		60-1009
CAS number: 68082-29-1	EC number: 500-191-5	REACH registration number: 01- 2119972320-44-XXXX
Classification		
Skin Irrit. 2 - H315		
Eye Irrit. 2 - H319		
Skin Sens. 1 - H317		
ATBN POLYMER		10-309
CAS number: 68683-29-4		
REACH registration exemption -	POLYMER	
Classification		
Skin Irrit. 2 - H315		
Eye Irrit. 2 - H319		
Skin Sens. 1 - H317		
TRIS-2,4,6-(DIMETHYLAMINON	/ETHYL)PHENOL	10-30%
CAS number: 90-72-2	EC number: 202-013-9	REACH registration number: 01- 2119560597-27-XXXX

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3,3'-OXYBIS(ETHYLENEC	DXY)BIS(PROPYLAMINE)	5-10%
CAS number: 4246-51-9	EC number: 224-207-2	REACH registration number: 01- 2119963377-26-XXXX
<b>Classification</b> Skin Corr. 1B - H314 Eye Dam. 1 - H318 Skin Sens. 1 - H317		
2-PIPERAZIN-1-YLETHYL	AMINE	<1%
CAS number: 140-31-8	EC number: 205-411-0	REACH registration number: 01- 2119471486-30-XXXX
<b>Classification</b> Acute Tox. 4 - H302 Acute Tox. 3 - H311 Skin Corr. 1B - H314 Eye Dam. 1 - H318 Skin Sens. 1 - H317 Repr. 2 - H361 STOT RE 1 - H372 Aquatic Chronic 3 - H412		
	atements is displayed in Section 16.	
SECTION 4: First aid meas		
4.1. Description of first aid r Inhalation		adical attention if any discomfort continues
Ingestion	Move the exposed person to fresh air. Get medical attention if any discomfort continues. Never give anything by mouth to an unconscious person. Rinse mouth thoroughly with water. Give plenty of water to drink. DO NOT induce vomiting. Get medical attention immediately.	
Skin contact	Remove contaminated clothing immediately and wash skin with soap and water. If symptoms develop, obtain medical attention	
Eye contact	Rinse immediately with plenty of water for 15 minutes holding the eyelids open. Remove any contact lenses and open eyelids wide apart. Get medical attention. Show this Safety Data Sheet to the medical personnel.	
4.2. Most important sympto	ns and effects, both acute and delayed	
Inhalation	Irritation of nose, throat and airway.	
Ingestion	May cause chemical burns in mouth and thro	at.
Skin contact	Chemical burns. Mild dermatitis, allergic skin	rash.

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

Notes for the doctor No specific recommendations. Treat symptomatically.

## SECTION 5: Firefighting measures

## 5.1. Extinguishing media

**Suitable extinguishing media** Extinguish with foam, carbon dioxide, dry powder or water fog.

Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.	
5.2. Special hazards arising fro	om the substance or mixture	
Specific hazards	No unusual fire or explosion hazards noted.	
Hazardous combustion products	Burning produces irritating, toxic and obnoxious fumes. Nitrous gases (NOx). Carbon monoxide, carbon dioxide, and unknown hydrocarbons.	
5.3. Advice for firefighters		
Special protective equipment for firefighters	Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing.	
SECTION 6: Accidental release	e measures	
6.1. Personal precautions, pro	tective equipment and emergency procedures	
Personal precautions	Wear protective clothing as described in Section 8 of this safety data sheet.	
6.2. Environmental precautions		
Environmental precautions	Do not discharge into drains or watercourses or onto the ground.	
6.3. Methods and material for	containment and cleaning up	
Methods for cleaning up	Absorb spillage with sand or other inert absorbent. Transfer to suitable, labelled containers for disposal. Wash area with soap and water.	
6.4. Reference to other section	<u>15</u>	
Reference to other sections	For personal protection, see Section 8. For waste disposal, see section 13.	
SECTION 7: Handling and sto	rage	
7.1. Precautions for safe hand	ling	
Usage precautions	Avoid contact with skin and eyes. Do not ingest or inhale. Do not eat, drink or smoke when using this product.	
7.2. Conditions for safe storag	e, including any incompatibilities	
Storage precautions	Store in closed original container at temperatures between 5°C and 25°C.	
Storage class	Corrosive storage.	
7.3. Specific end use(s)		
Specific end use(s)	Adhesive. Sealant.	
SECTION 8: Exposure control	s/Personal protection	
8.1. Control parameters		

### POLYAMINOAMIDE (CAS: 68082-29-1)

DNEL	Workers - Inhalation; Long term systemic effects: 3.9 mg/m <sup>3</sup> Workers - Dermal; Long term systemic effects: 1.1 mg/kg/day
PNEC	Fresh water; 0.004 mg/l marine water; 0 mg/l STP; 3.84 mg/l
	Sediment (Freshwater); 434.02 mg/kg Sediment (Marinewater); 43.4 mg/kg

## TRIS-2,4,6-(DIMETHYLAMINOMETHYL)PHENOL (CAS: 90-72-2)

PNEC	Fresh water; 0.084 mg/l marine water; 0.008 mg/l STP; 0.2 mg/l
<u>3,3'-C</u>	DXYBIS(ETHYLENEOXY)BIS(PROPYLAMINE) (CAS: 4246-51-9)
DNEL	Workers - Inhalation; Long term systemic effects: 59 mg/m <sup>3</sup> Workers - Inhalation; Short term systemic effects: 176 mg/m <sup>3</sup> Workers - Inhalation; Long term local effects: 1 mg/m <sup>3</sup> Workers - Inhalation; Short term local effects: 13 mg/m <sup>3</sup> Workers - Dermal; Long term systemic effects: 8.3 mg/kg
PNEC	Fresh water; 0.22 mg/l marine water; 0.022 mg/l Intermittent release; 2.2 mg/l STP; 125 mg/l Sediment (Freshwater); 0.809 mg/kg Sediment (Marinewater); 0.0809 mg/kg Soil; 0.0337 mg/kg 2-PIPERAZIN-1-YLETHYLAMINE (CAS: 140-31-8)
DNEL	Workers - Inhalation; Long term systemic effects: 10.6 mg/m <sup>3</sup> Workers - Inhalation; Short term systemic effects: 10.6 mg/m <sup>3</sup> Workers - Inhalation; Long term local effects: 15 µg/m3 Workers - Inhalation; Short term local effects: 80 mg/m <sup>3</sup> Workers - Dermal; Long term systemic effects: 3.33 mg/kg/day
PNEC	Fresh water; 0.058 mg/l marine water; 0.006 mg/l STP; 250 mg/l Sediment (Freshwater); 215 mg/kg Sediment (Marinewater); 21.5 mg/kg Intermittent release; 0.58 mg/l

#### 8.2. Exposure controls

#### Protective equipment





Appropriate engineering controls

Eye/face protection

Provide adequate general and local exhaust ventilation.

The following protection should be worn: Chemical splash goggles or face shield. Personal eye protection should conform to EN 166

Hand protection	It is recommended that chemical-resistant, impervious gloves are worn. Gloves should conform to EN 374. For exposure up to 4 hours, wear gloves made of the following material: Nitrile rubber. Thickness: $\geq 0.4$ mm The selected gloves should have a breakthrough time of at least 0.5 hours. For exposure up to 8 hours, wear gloves made of the following material: Nitrile rubber. Thickness: $\geq 0.4$ mm The selected gloves should have a breakthrough time of at least 8 hours. The breakthrough time for any glove material may be different for different glove manufacturers. The most suitable glove should be chosen in consultation with the glove supplier/manufacturer, who can provide information about the breakthrough time of the gloves are retaining their protective properties and change them as soon as any deterioration is detected.
Other skin and body protection	Employee must wear appropriate protective clothing and equipment to prevent any possibility of skin contact with this substance.
Hygiene measures	Wash at the end of each work shift and before eating, smoking and using the toilet. Promptly remove any clothing that becomes contaminated. Use appropriate skin cream to prevent drying of skin. When using do not eat, drink or smoke. Use of good industrial hygiene practices is required.
Respiratory protection	Ensure adequate ventilation of the working area. Respiratory protection may be required if excessive airborne contamination occurs. Respiratory protection complying with an approved standard should be worn if a risk assessment indicates inhalation of contaminants is possible. Organic vapour filter. Type A. (EN14387)

## SECTION 9: Physical and chemical properties

## 9.1. Information on basic physical and chemical properties

0.1. Information on basic phys	ical and chemical properties
opearance	Paste.
our	Black.
ur	Amine.
our threshold	Not determined.
	Not determined.
ing point	Not determined.
al boiling point and range	Not determined.
h point	>100°C
oration rate	Not available.
er/lower flammability or osive limits	Not applicable.
our pressure	Not determined.
our density	Not determined.
tive density	1.0
bility(ies)	Slightly soluble in water. Soluble in the following materials: Organic solver
ition coefficient	Not applicable.
o-ignition temperature	Not determined.
composition Temperature	Not determined.
cosity	≈150000 mPa s @ 23°C Thixotropic

Explosive properties	Not determined.
Oxidising properties	Not applicable.
9.2. Other information	
Other information	Not relevant.
Volatile organic compound	This product contains a maximum VOC content of 1 %.
SECTION 10: Stability and rea	activity
10.1. Reactivity	
Reactivity	Under normal conditions of storage and use, no hazardous reactions will occur.
10.2. Chemical stability	
Stability	Stable at normal ambient temperatures.
10.3. Possibility of hazardous	reactions
Possibility of hazardous reactions	Reactions with the following materials may generate heat: Epoxy resin
10.4. Conditions to avoid	
Conditions to avoid	Avoid excessive heat for prolonged periods of time.
10.5. Incompatible materials	
Materials to avoid	Avoid contact with the following materials: Acids. Oxidising agents.
10.6. Hazardous decomposition	on products
Hazardous decomposition products	Thermal decomposition could produce carbon monoxide, carbon dioxide, and unidentified organic compounds.
SECTION 11: Toxicological in	formation
11.1. Information on toxicolog	ical effects
Toxicological effects	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 1272/2008/EC. Relevant available health/ecological information for the substances listed under Section 3 is provided in the following.
Skin sensitisation Skin sensitisation	May cause sensitisation by skin contact.
Aspiration hazard Aspiration hazard	None under normal conditions.
Inhalation	Unlikely to be hazardous by inhalation because of the low vapour pressure of the product at ambient temperature. In high concentrations, vapours may irritate throat and respiratory system and cause coughing.
Ingestion	Causes burns. May cause chemical burns in mouth and throat. May cause stomach pain or vomiting.
Skin contact	This product is strongly irritating. Prolonged contact may cause burns.
Eye contact	Causes serious eye damage.
Toxicological information on ir	ngredients.

### POLYAMINOAMIDE

Acute toxicity - oral	
Acute toxicity oral (LD₅₀ mg/kg)	2,000.1
Species	Rat
Acute toxicity - dermal	
Acute toxicity dermal (LD₅₀ mg/kg)	2,000.1
Species	Rat
Skin corrosion/irritation	
Skin corrosion/irritation	Irritating to skin.
Serious eye damage/irritatio	on
Serious eye damage/irritation	Irritating to eyes.
Respiratory sensitisation	
Respiratory sensitisation	No information available.
Skin sensitisation	
Skin sensitisation	Sensitising.
Germ cell mutagenicity	
Genotoxicity - in vitro	No information available.
Carcinogenicity	
Carcinogenicity	No specific test data are available.
Reproductive toxicity	
Reproductive toxicity - fertility	Screening - NOAEL 1000 mg/kg/day, Oral, Rat
Specific target organ toxicit	y - single exposure
STOT - single exposure	No information available.
Specific target organ toxicit	y - repeated exposure
STOT - repeated exposure	No information available.
Aspiration hazard	
Aspiration hazard	Not available.
	ATBN POLYMER
Acute toxicity - oral	
Acute toxicity oral (LD₅₀ mg/kg)	15,400.0
Species	Rat

Acute toxicity dermal (LD₅ mg/kg)	3,000.0
Species	Rabbit
Acute toxicity - inhalation	
Notes (inhalation LC <sub>50</sub> )	No specific test data are available.
Skin corrosion/irritation	
Skin corrosion/irritation	Moderately irritating. Rabbit
Serious eye damage/irritation	on
Serious eye damage/irritation	Slightly irritating. Rabbit
Skin sensitisation	
Skin sensitisation	Sensitising. Guinea pig
Germ cell mutagenicity	
Genotoxicity - in vitro	No specific test data are available.
Carcinogenicity	
Carcinogenicity	No specific test data are available.
Reproductive toxicity	
Reproductive toxicity - fertility	No specific test data are available.
Specific target organ toxicit	y - single exposure
STOT - single exposure	Based on available data the classification criteria are not met.
Specific target organ toxicit	y - repeated exposure
STOT - repeated exposure	No information available.
Aspiration hazard	
Aspiration hazard	Based on available data the classification criteria are not met.
	TRIS-2,4,6-(DIMETHYLAMINOMETHYL)PHENOL
Acute toxicity - oral	
Acute toxicity oral (LD₅₀ mg/kg)	2,169.0
Species	Rat
Acute toxicity - inhalation	
Notes (inhalation LC <sub>50</sub> )	No information available.
Skin corrosion/irritation	
Skin corrosion/irritation	Method: OECD 404, Rabbit Corrosive
Serious eye damage/irritation	on
Serious eye damage/irritation	Rabbit Causes serious eye irritation.
Skin sensitisation	

Skin sensitisation	Guinea pig maximization test (GPMT) - Guinea pig: Mild dermatitis, allergic skin rash.
Germ cell mutagenicity	
Genotoxicity - in vitro	Gene mutation: Negative.
Genotoxicity - in vivo	No information available.
Carcinogenicity	
Carcinogenicity	No information available.
Reproductive toxicity	
Reproductive toxicity - fertility	Screening - NOAEL 15 mg/kg/day, Oral, Rat F1
Reproductive toxicity - development	Developmental toxicity: - NOAEL: >150 mg/kg/day, Oral, Rat
Specific target organ toxicit	y - single exposure
STOT - single exposure	No information available.
Specific target organ toxicit	y - repeated exposure
STOT - repeated exposure	No information available.
Aspiration hazard	
Aspiration hazard	No information available.
	3,3'-OXYBIS(ETHYLENEOXY)BIS(PROPYLAMINE)
Acute toxicity - oral	
Acute toxicity - oral Acute toxicity oral (LD <sub>50</sub> mg/kg)	3,160.0
Acute toxicity oral (LD <sub>50</sub>	3,160.0 Rat
Acute toxicity oral (LD <sub>50</sub> mg/kg)	
Acute toxicity oral (LD₅o mg/kg) Species	Rat
Acute toxicity oral (LD <sub>50</sub> mg/kg) Species <u>Acute toxicity - dermal</u> Acute toxicity dermal (LD <sub>50</sub>	Rat
Acute toxicity oral (LD <sub>50</sub> mg/kg) Species <u>Acute toxicity - dermal</u> Acute toxicity dermal (LD <sub>50</sub> mg/kg)	Rat 2,150.0
Acute toxicity oral (LD <sub>50</sub> mg/kg) Species <u>Acute toxicity - dermal</u> Acute toxicity dermal (LD <sub>50</sub> mg/kg) Species	Rat 2,150.0
Acute toxicity oral (LD <sub>50</sub> mg/kg) Species <u>Acute toxicity - dermal</u> Acute toxicity dermal (LD <sub>50</sub> mg/kg) Species <u>Acute toxicity - inhalation</u>	Rat 2,150.0 Rat
Acute toxicity oral (LD <sub>50</sub> mg/kg) Species <u>Acute toxicity - dermal</u> Acute toxicity dermal (LD <sub>50</sub> mg/kg) Species <u>Acute toxicity - inhalation</u> Notes (inhalation LC <sub>50</sub> )	Rat 2,150.0 Rat
Acute toxicity oral (LD50 mg/kg) Species Acute toxicity - dermal Acute toxicity dermal (LD50 mg/kg) Species Acute toxicity - inhalation Notes (inhalation LC50) Skin corrosion/irritation	Rat 2,150.0 Rat No information available.
Acute toxicity oral (LD50 mg/kg) Species Acute toxicity - dermal Acute toxicity dermal (LD50 mg/kg) Species Acute toxicity - inhalation Notes (inhalation LC50) Skin corrosion/irritation Skin corrosion/irritation	Rat 2,150.0 Rat No information available.
Acute toxicity oral (LD50 mg/kg)         Species         Acute toxicity - dermal         Acute toxicity dermal (LD50 mg/kg)         Species         Acute toxicity - inhalation         Notes (inhalation LC50)         Skin corrosion/irritation         Skin corrosion/irritation         Serious eye damage/irritation         Serious eye	Rat 2,150.0 Rat No information available.
Acute toxicity oral (LD <sub>50</sub> mg/kg) Species Acute toxicity - dermal Acute toxicity dermal (LD <sub>50</sub> mg/kg) Species Acute toxicity - inhalation Notes (inhalation LC <sub>50</sub> ) Skin corrosion/irritation Skin corrosion/irritation Skin corrosion/irritation Serious eye damage/irritation Serious eye damage/irritation	Rat 2,150.0 Rat No information available.
Acute toxicity oral (LD <sub>50</sub> mg/kg) Species <u>Acute toxicity - dermal</u> Acute toxicity dermal (LD <sub>50</sub> mg/kg) Species <u>Acute toxicity - inhalation</u> Notes (inhalation LC <sub>50</sub> ) <u>Skin corrosion/irritation</u> Skin corrosion/irritation Skin corrosion/irritation Skin corrosion/irritation Serious eye damage/irritation Serious eye damage/irritation	Rat 2,150.0 Rat No information available. Corrosive to skin. on Highly irritating.

Carcinogenicity	
Carcinogenicity	No information available.
Reproductive toxicity	
Reproductive toxicity - fertility	Screening - NOAEL 600 mg/kg/day, Oral, Rat P
Specific target organ toxicit	y - single exposure
STOT - single exposure	No information available.
Specific target organ toxicit	y - repeated exposure
STOT - repeated exposure	No information available.
Aspiration hazard	
Aspiration hazard	No information available.
	2-PIPERAZIN-1-YLETHYLAMINE
Acute toxicity - oral	
 Acute toxicity oral (LD₅₀ mg/kg)	1,500.0
Species	Rat
Acute toxicity - dermal	
Acute toxicity dermal (LD₅₀ mg/kg)	866.0
Species	Rabbit
Acute toxicity - inhalation	
Notes (inhalation LC₅₀)	No information available.
Skin corrosion/irritation	
Animal data	Severe skin irritation. Rabbit
Serious eye damage/irritati	on
Serious eye damage/irritation	Highly irritating. Rabbit
Skin sensitisation	
Skin sensitisation	Guinea pig maximization test (GPMT) - Guinea pig: Sensitising.
Germ cell mutagenicity	
Genotoxicity - in vitro	Gene mutation: Negative.
Genotoxicity - in vivo	Chromosome aberration: Negative.
Carcinogenicity	
Carcinogenicity	No information available.
Reproductive toxicity	
Reproductive toxicity - fertility	Screening - NOAEC 8000 mg/l, Oral, Rat P

Reproductive toxicity - development	Developmental toxicity: - NOAEL: 75 mg/kg/day, Oral, Rabbit
Specific target organ toxicity	y - single exposure
STOT - single exposure	No information available.
Specific target organ toxicit	y - repeated exposure
STOT - repeated exposure	No information available.
Aspiration hazard	
Aspiration hazard	No information available.
SECTION 12: Ecological information	

Ecotoxicity

The product is not expected to be hazardous to the environment.

## 12.1. Toxicity

Toxicity

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 1272/2008/EC. Relevant available health/ecological information for the substances listed under Section 3 is provided in the following.

#### Ecological information on ingredients.

#### POLYAMINOAMIDE

Acute aquatic toxicity	1
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Acute aquatic toxicity

Acute toxicity - fish	LC₅₀, 96 hours: 7.07 mg/l, Danio rerio (Zebrafish)
Acute toxicity - aquatic invertebrates	EC₅₀, 24 hours: 9.72 mg/l, Daphnia magna
Acute toxicity - aquatic plants	EC₅₀, 72 hours: 4.34 mg/l, Pseudokirchneriella subcapitata
Acute toxicity - microorganisms	EC₅₀, 3 hours: 384 mg/l, Activated sludge

#### ATBN POLYMER

Acute toxicity - aquatic invertebrates	EC₅₀, 48 hours: > 1000 mg/l, Daphnia magna
Acute toxicity - aquatic plants	EC₅₀, 72 hours: > 1000 mg/l, Algae

### TRIS-2,4,6-(DIMETHYLAMINOMETHYL)PHENOL

Acute aquatic toxicity	
Acute toxicity - fish	LC₅₀, 96 hours: 175 mg/l, Cyprinus carpio (Common carp)
Acute toxicity - aquatic invertebrates	LC₅₀, 96 hours: 718 mg/l, Palaemonetes vulgaris
Acute toxicity - aquatic plants	EC₅₀, 72 hours: 84 mg/l, Scenedesmus subspicatus

Acute toxicity - microorganisms	NOEC, 28 days: 2 mg/l, Activated sludge
	3,3'-OXYBIS(ETHYLENEOXY)BIS(PROPYLAMINE)
Acute aquatic to	xicity
Acute toxicity - fi	sh LC₅₀, 96 hours: > 215 - < 464 mg/l, Leuciscus idus (Golden orfe)
Acute toxicity - a invertebrates	quatic EC₅₀, 48 hours: 218 mg/l, Daphnia magna
Acute toxicity - a plants	quatic EC₅₀, 72 hours: > 500 mg/l, Scenedesmus subspicatus
Acute toxicity - microorganisms	EC₅₀, 17 hours: 221.9 mg/l, Pseudomonas putida
	2-PIPERAZIN-1-YLETHYLAMINE
Acute aquatic to	xicity
Acute toxicity - fis	<b>sh</b> LC₅₀, 96 hours: > 100 mg/l, Pimephales promelas (Fat-head Minnow) LC₅₀, 96 hours: 2190 mg/l, Pimephales promelas (Fat-head Minnow)
Acute toxicity - a invertebrates	<b>quatic</b> EC₅₀, 48 hours: 58 mg/l, Daphnia magna
Acute toxicity - a plants	quatic EC₅₀, 72 hours: > 1000 mg/l, Pseudokirchneriella subcapitata
12.2. Persistence and degrada	ability
Persistence and degradability	There are no data on the degradability of this product.
Persistence and degradability Ecological information on ingra	
	edients.
Ecological information on ingr	a,3'-OXYBIS(ETHYLENEOXY)BIS(PROPYLAMINE) Water - Degradation 10%: < 60 days
Ecological information on ingra	a,3'-OXYBIS(ETHYLENEOXY)BIS(PROPYLAMINE) Water - Degradation 10%: < 60 days
Ecological information on ingra Biodegradation 12.3. Bioaccumulative potentia	edients. <u>3,3'-OXYBIS(ETHYLENEOXY)BIS(PROPYLAMINE)</u> Water - Degradation 10%: < 60 days
Ecological information on ingra Biodegradation 12.3. Bioaccumulative potential	edients. <u>3,3'-OXYBIS(ETHYLENEOXY)BIS(PROPYLAMINE)</u> Water - Degradation 10%: < 60 days <u>al</u> No data available on bioaccumulation.
Ecological information on ingra Biodegradation 12.3. Bioaccumulative potential Bioaccumulative potential Partition coefficient	edients. <u>3,3'-OXYBIS(ETHYLENEOXY)BIS(PROPYLAMINE)</u> Water - Degradation 10%: < 60 days <u>al</u> No data available on bioaccumulation.
Ecological information on ingra Biodegradation 12.3. Bioaccumulative potential Bioaccumulative potential Partition coefficient 12.4. Mobility in soil	edients. <u>3,3'-OXYBIS(ETHYLENEOXY)BIS(PROPYLAMINE)</u> Water - Degradation 10%: < 60 days <u>al</u> No data available on bioaccumulation. Not applicable. No data available.
Ecological information on ingra Biodegradation 12.3. Bioaccumulative potential Bioaccumulative potential Partition coefficient 12.4. Mobility in soil Mobility	edients. <u>3,3'-OXYBIS(ETHYLENEOXY)BIS(PROPYLAMINE)</u> Water - Degradation 10%: < 60 days <u>al</u> No data available on bioaccumulation. Not applicable. No data available.
Ecological information on ingra Biodegradation 12.3. Bioaccumulative potential Bioaccumulative potential Partition coefficient 12.4. Mobility in soil Mobility 12.5. Results of PBT and vPvB	edients. 3,3'-OXYBIS(ETHYLENEOXY)BIS(PROPYLAMINE) Water - Degradation 10%: < 60 days al No data available on bioaccumulation. Not applicable. No data available. B assessment
Ecological information on ingra Biodegradation 12.3. Bioaccumulative potential Bioaccumulative potential Partition coefficient 12.4. Mobility in soil Mobility 12.5. Results of PBT and vPvB Results of PBT and vPvB assessment	edients. 3,3'-OXYBIS(ETHYLENEOXY)BIS(PROPYLAMINE) Water - Degradation 10%: < 60 days al No data available on bioaccumulation. Not applicable. No data available. B assessment
Ecological information on ingra Biodegradation 12.3. Bioaccumulative potential Bioaccumulative potential Partition coefficient 12.4. Mobility in soil Mobility 12.5. Results of PBT and vPvI Results of PBT and vPvB assessment 12.6. Other adverse effects	edients. 3,3'-OXYBIS(ETHYLENEOXY)BIS(PROPYLAMINE) Water - Degradation 10%: < 60 days al No data available on bioaccumulation. Not applicable. No data available. B assessment This substance is not classified as PBT or vPvB according to current EU criteria. None known.

General information	Waste disposal should be in accordance with existing Community, National and local regulations Empty containers may contain product residue; follow SDS and label warnings even after they have been emptied.
Disposal methods	Do not empty into drains, dispose of this material and its container at hazardous or special waste collection point.
Waste class	08 04 09* waste adhesives and sealants containing organic solvents or other dangerous substances.

## **SECTION 14: Transport information**

#### 14.1. UN number

2735

## 14.2. UN proper shipping name

POLYAMINES, LIQUID, CORROSIVE, N.O.S. (contains 3,3'-Oxybis(ethyleneoxy)bis(propylamine))

### 14.3. Transport hazard class(es)

8

### Transport labels



14.4. Packing group

Ш

EmS

#### 14.5. Environmental hazards

Environmentally hazardous substance/marine pollutant No.

#### 14.6. Special precautions for user

F-A, S-B

Tunnel restriction code

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

(E)

Transport in bulk according to Not applicable. Annex II of MARPOL 73/78 and the IBC Code

#### SECTION 15: Regulatory information

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

National regulations	The Chemicals (Hazard Information and Packaging for Supply) Regulations 2009 (SI 2009 No. 716). Control of Substances Hazardous to Health Regulations 2002 (as amended).
EU legislation	<ul> <li>Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16</li> <li>December 2008 on classification, labelling and packaging of substances and mixtures (as amended).</li> <li>COMMISSION REGULATION (EU) 2015/830 of 28 May 2015 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)</li> </ul>

#### Guidance

Workplace Exposure Limits EH40. Introduction to Local Exhaust Ventilation HS(G)37. CHIP for everyone HSG228. Approved Classification and Labelling Guide (Sixth edition) L131.

#### 15.2. Chemical safety assessment

No chemical safety assessment has been carried out.

#### SECTION 16: Other information

Revision date	05/07/2021
Revision	5
Supersedes date	09/07/2020
Hazard statements in full	<ul> <li>H302 Harmful if swallowed.</li> <li>H311 Toxic in contact with skin.</li> <li>H314 Causes severe skin burns and eye damage.</li> <li>H315 Causes skin irritation.</li> <li>H317 May cause an allergic skin reaction.</li> <li>H318 Causes serious eye damage.</li> <li>H319 Causes serious eye irritation.</li> <li>H361 Suspected of damaging fertility or the unborn child.</li> <li>H372 Causes damage to organs through prolonged or repeated exposure.</li> <li>H412 Harmful to aquatic life with long lasting effects.</li> </ul>

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty, guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.