

# Permabond®

## Engineering Adhesives

### SAFETY DATA SHEET

#### Permabond ET536B

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

##### 1.1. Product identifier

**Product name** Permabond ET536B

##### 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 the 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 number

**Emergency telephone** CHEMTREC UK: +(44)-870-8200418 CHEMTREC US: 800-424-9300 (CCN: 829878)

**National emergency telephone number** CHEMTREC Ireland: +(353)-19014670  
CHEMTREC Australia: +(61)-290372994  
CHEMTREC New Zealand: +(64)-98010034

#### SECTION 2: Hazards identification

##### 2.1. Classification of the substance or mixture

###### Classification (SI 2019 No. 720)

**Physical hazards** Not Classified

**Health hazards** Skin Irrit. 2 - H315 Eye Dam. 1 - H318 Skin Sens. 1 - H317

**Environmental hazards** Aquatic Chronic 2 - H411

##### 2.2. Label elements

###### Hazard pictograms



**Signal word**

Danger

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<b>Hazard statements</b>	H315 Causes skin irritation. H318 Causes serious eye damage. H317 May cause an allergic skin reaction. H411 Toxic to aquatic life with long lasting effects.
<b>Precautionary statements</b>	P280 Wear protective gloves/ protective clothing/ eye protection/ face protection. P302+P352a IF ON SKIN: Wash with plenty of soap and water P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P273 Avoid release to the environment.
<b>Contains</b>	POLYAMINOAMIDE, MERCAPTAN-TERMINATED OLIGOMER
<b>Supplementary precautionary statements</b>	P264 Wash contaminated skin thoroughly after handling. P333+P313 If skin irritation or rash occurs: Get medical advice/ attention. P337+P313 If eye irritation persists: Get medical advice/ attention. P362+P364 Take off contaminated clothing and wash it before reuse. P501 Dispose of contents/container in accordance with existing Community, National and local regulations.

### 2.3. Other hazards

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

## SECTION 3: Composition/information on ingredients

### 3.2. Mixtures

<b>POLYAMINOAMIDE</b>	<b>30-60%</b>
CAS number: 68082-29-1	EC number: 500-191-5
<b>Classification</b> Skin Irrit. 2 - H315 Eye Dam. 1 - H318 Skin Sens. 1 - H317 Aquatic Chronic 2 - H411	
<b>MERCAPTAN-TERMINATED OLIGOMER</b>	<b>10-30%</b>
CAS number: 72244-98-5	EC number: 701-196-7
<b>Classification</b> Skin Sens. 1B - H317 Aquatic Chronic 3 - H412	
<b>TRIS-2,4,6-(DIMETHYLAMINOMETHYL)PHENOL</b>	<b>1-5%</b>
CAS number: 90-72-2	EC number: 202-013-9
<b>Classification</b> Acute Tox. 4 - H302 Skin Irrit. 2 - H315 Eye Irrit. 2 - H319	

The full text for all hazard statements is displayed in Section 16.

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

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<b>Inhalation</b>	Move the exposed person to fresh air. Get medical attention if any discomfort continues.
<b>Ingestion</b>	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.
<b>Skin contact</b>	Remove contaminated clothing immediately and wash skin with soap and water. If symptoms develop, obtain medical attention
<b>Eye contact</b>	Remove any contact lenses and open eyelids wide apart. Get medical attention.

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

<b>Ingestion</b>	May cause chemical burns in mouth and throat.
<b>Skin contact</b>	Chemical burns. Mild dermatitis, allergic skin rash.
<b>Eye contact</b>	May cause serious eye damage.

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

<b>Notes for the doctor</b>	No specific recommendations. Treat symptomatically.
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## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

<b>Suitable extinguishing media</b>	Extinguish with foam, carbon dioxide, dry powder or water fog.
<b>Unsuitable extinguishing media</b>	Do not use water jet as an extinguisher, as this will spread the fire.

### 5.2. Special hazards arising from the substance or mixture

<b>Specific hazards</b>	No unusual fire or explosion hazards noted.
<b>Hazardous combustion products</b>	Burning produces irritating, toxic and obnoxious fumes. Nitrous gases (NOx). Carbon monoxide, carbon dioxide, and unknown hydrocarbons.

### 5.3. Advice for firefighters

<b>Special protective equipment for firefighters</b>	Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing.
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## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

<b>Personal precautions</b>	Wear protective clothing as described in Section 8 of this safety data sheet.
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### 6.2. Environmental precautions

<b>Environmental precautions</b>	Do not discharge into drains or watercourses or onto the ground.
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### 6.3. Methods and material for containment and cleaning up

<b>Methods for cleaning up</b>	Absorb spillage with sand or other inert absorbent. Transfer to suitable, labelled containers for disposal. Wash area with soap and water.
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### 6.4. Reference to other sections

<b>Reference to other sections</b>	For personal protection, see Section 8. For waste disposal, see section 13.
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## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

<b>Usage precautions</b>	Avoid contact with skin and eyes. Do not ingest or inhale. Do not eat, drink or smoke when using this product.
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### 7.2. Conditions for safe storage, 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 controls/Personal protection

### 8.1. Control parameters

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

<b>DNEL</b>	Workers - Inhalation; Long term systemic effects: 3.9 mg/m <sup>3</sup> Workers - Dermal; Long term systemic effects: 1.1 mg/kg/day
<b>PNEC</b>	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

#### MERCAPTAN-TERMINATED OLIGOMER (CAS: 72244-98-5)

<b>DMEL</b>	Workers - Inhalation; Long term systemic effects: 22 mg/m <sup>3</sup> Workers - Dermal; Long term systemic effects: 2.7 mg/kg/day
<b>PNEC</b>	Fresh water; 70 µg/l marine water; 7 µg/l STP; 10 mg/l Sediment (Freshwater); 322 µg/kg, dw Sediment (Marinewater); 32 µg/kg, dw Soil; 23 µg/kg, dw

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

<b>PNEC</b>	Fresh water; 0.084 mg/l marine water; 0.008 mg/l STP; 0.2 mg/l
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### 8.2. Exposure controls

#### **Protective equipment**



#### **Appropriate engineering controls**

Provide adequate general and local exhaust ventilation.

#### **Eye/face protection**

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

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<b>Hand protection</b>	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 glove material. Considering the data specified by the glove manufacturer, check during use that the gloves are retaining their protective properties and change them as soon as any deterioration is detected.
<b>Other skin and body protection</b>	Employee must wear appropriate protective clothing and equipment to prevent any possibility of skin contact with this substance.
<b>Hygiene measures</b>	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.
<b>Respiratory protection</b>	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

<b>Appearance</b>	Paste.
<b>Colour</b>	Black.
<b>Odour</b>	Amine.
<b>Odour threshold</b>	Not determined.
<b>pH</b>	Not determined.
<b>Melting point</b>	Not determined.
<b>Initial boiling point and range</b>	Not determined.
<b>Flash point</b>	$>100^{\circ}\text{C}$
<b>Evaporation rate</b>	Not available.
<b>Upper/lower flammability or explosive limits</b>	Not available.
<b>Vapour pressure</b>	Not determined.
<b>Vapour density</b>	Not determined.
<b>Relative density</b>	1.2
<b>Solubility(ies)</b>	Slightly soluble in water. Soluble in the following materials: Organic solvents.
<b>Partition coefficient</b>	Not available.
<b>Auto-ignition temperature</b>	Not determined.
<b>Decomposition Temperature</b>	Not determined.
<b>Viscosity</b>	$\approx 300000$ mPa s @ $23^{\circ}\text{C}$ Thixotropic

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**Explosive properties** Not determined.

**Oxidising properties** Not applicable.

### 9.2. Other information

**Other information** Not relevant.

## SECTION 10: Stability and reactivity

### 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 products

**Hazardous decomposition products** Thermal decomposition could produce carbon monoxide, carbon dioxide, and unidentified organic compounds.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological 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

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 ingredients.

## POLYAMINOAMIDE

### Acute toxicity - oral

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**Acute toxicity oral (LD<sub>50</sub>)** 2,000.1  
mg/kg)

**Species** Rat

### Acute toxicity - dermal

**Acute toxicity dermal (LD<sub>50</sub>)** 2,000.1  
mg/kg)

**Species** Rat

### Skin corrosion/irritation

**Skin corrosion/irritation** Irritating to skin.

### Serious eye damage/irritation

**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 toxicity - single exposure

**STOT - single exposure** No information available.

### Specific target organ toxicity - repeated exposure

**STOT - repeated exposure** No information available.

### Aspiration hazard

**Aspiration hazard** Not available.

## MERCAPTAN-TERMINATED OLIGOMER

### Acute toxicity - oral

**Acute toxicity oral (LD<sub>50</sub>)** 2,600.0  
mg/kg)

**Species** Rat

### Acute toxicity - dermal

**Acute toxicity dermal (LD<sub>50</sub>)** 10,200.0  
mg/kg)

**Species** Rabbit

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### Skin corrosion/irritation

**Animal data** Method: OECD 404, Rabbit Not irritating.

### Serious eye damage/irritation

**Serious eye damage/irritation** Method: OECD 405, Rabbit Not irritating.

### Skin sensitisation

**Skin sensitisation** Local Lymph Node Assay (LLNA) - Mouse: Sensitising.

### Germ cell mutagenicity

**Genotoxicity - in vitro** Gene mutation: Negative.

### Carcinogenicity

**Carcinogenicity** No information available.

### Reproductive toxicity

**Reproductive toxicity - fertility** No information available.

### Specific target organ toxicity - single exposure

**STOT - single exposure** No information available.

### Specific target organ toxicity - repeated exposure

**STOT - repeated exposure** No information available.

### Aspiration hazard

**Aspiration hazard** No information available.

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

### Acute toxicity - oral

**Acute toxicity oral (LD<sub>50</sub> 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

**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.

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### 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 toxicity - single exposure

**STOT - single exposure** No information available.

### Specific target organ toxicity - repeated exposure

**STOT - repeated exposure** No information available.

### Aspiration hazard

**Aspiration hazard** No information available.

## SECTION 12: Ecological information

**Ecotoxicity** Toxic to aquatic life with long lasting effects.

### 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

**Acute toxicity - fish** LC<sub>50</sub>, 96 hours: 7.07 mg/l, Danio rerio (Zebrafish)

**Acute toxicity - aquatic invertebrates** EC<sub>50</sub>, 24 hours: 9.72 mg/l, Daphnia magna

**Acute toxicity - aquatic plants** EC<sub>50</sub>, 72 hours: 4.34 mg/l, Pseudokirchneriella subcapitata

**Acute toxicity - microorganisms** EC<sub>50</sub>, 3 hours: 384 mg/l, Activated sludge

#### MERCAPTAN-TERMINATED OLIGOMER

##### Acute aquatic toxicity

**Acute toxicity - fish** LC<sub>50</sub>, 96 hours: 87 mg/l, Danio rerio (Zebrafish)

**Acute toxicity - aquatic invertebrates** EC<sub>50</sub>, 48 hours: 12 mg/l, Daphnia magna

**Acute toxicity - aquatic plants** EC<sub>50</sub>, 72 hours: >733 mg/l, Desmodesmus subspicatus

**Acute toxicity - microorganisms** EC<sub>50</sub>, 3 hours: > 1000 mg/l, Activated sludge

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### Chronic aquatic toxicity

**Chronic toxicity - aquatic invertebrates** NOEC, 21 days: 3.5 mg/l, Daphnia magna

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

### Acute aquatic toxicity

**Acute toxicity - fish** LC<sub>50</sub>, 96 hours: 175 mg/l, Cyprinus carpio (Common carp)

**Acute toxicity - aquatic invertebrates** LC<sub>50</sub>, 96 hours: 718 mg/l, Palaemonetes vulgaris

**Acute toxicity - aquatic plants** EC<sub>50</sub>, 72 hours: 84 mg/l, Scenedesmus subspicatus

**Acute toxicity - microorganisms** NOEC, 28 days: 2 mg/l, Activated sludge

### 12.2. Persistence and degradability

**Persistence and degradability** There are no data on the degradability of this product.

### 12.3. Bioaccumulative potential

**Bioaccumulative potential** No data available on bioaccumulation.

**Partition coefficient** Not available.

### 12.4. Mobility in soil

**Mobility** No data available.

### 12.5. Results of PBT and vPvB assessment

**Results of PBT and vPvB assessment** This substance is not classified as PBT or vPvB according to current UK criteria.

### 12.6. Other adverse effects

**Other adverse effects** None known.

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

**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

**Road transport notes** Applies only to inner containers >5 litres. See SP 375

**Sea transport notes** Applies only to inner containers >5 litres. See 2.10.2.7 of the IMDG code.

**Air transport notes** Applies only to inner containers >5 litres. See SP A197 (375)

### 14.1. UN number

## Permabond ET536B

3082

### 14.2. UN proper shipping name

ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Dimer Fatty Acid (C18) Polyaminoamide resin)

### 14.3. Transport hazard class(es)

9

#### Transport labels



### 14.4. Packing group

III

### 14.5. Environmental hazards

Environmentally hazardous substance/marine pollutant



### 14.6. Special precautions for user

EmS

F-A, S-F

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

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

## 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

COMMISSION REGULATION (EU) 2020/878 of 18 June 2020 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)

#### 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

28/06/2022

Revision

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## Permabond ET536B

<b>Supersedes date</b>	27/07/2021
<b>Hazard statements in full</b>	H302 Harmful if swallowed. H315 Causes skin irritation. H317 May cause an allergic skin reaction. H318 Causes serious eye damage. H319 Causes serious eye irritation. H411 Toxic to aquatic life with long lasting effects. H412 Harmful to aquatic life with long lasting effects.

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.