

# Permabond®

## Engineering Adhesives

### SAFETY DATA SHEET

#### Permabond ET538A

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

##### 1.1. Product identifier

**Product name** Permabond ET538A

##### 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 Ltd.  
Wessex Way  
Colden Common  
Winchester  
Hampshire. SO21 1WP  
United Kingdom  
Tel: +44 (0)1962 711 661  
Fax: +44 (0)1962 711 662  
info.europe@permabond.com

##### 1.4. Emergency telephone number

**Emergency telephone** UK +44 (0)1962 711 661 USA 0800 640 7599 Asia +86 (0)21 5773 4913

#### SECTION 2: Hazards identification

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

###### Classification

**Physical hazards** Not Classified

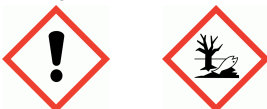
**Health hazards** Skin Irrit. 2 - H315 Eye Irrit. 2 - H319 Skin Sens. 1 - H317

**Environmental hazards** Aquatic Chronic 2 - H411

**Classification (67/548/EEC or 1999/45/EC)** Xi;R36/38. R43. N;R51/53.

##### 2.2. Label elements

###### Pictogram



**Signal word** Warning

**Hazard statements** H315 Causes skin irritation.  
H317 May cause an allergic skin reaction.  
H319 Causes serious eye irritation.  
H411 Toxic to aquatic life with long lasting effects.

## Permabond ET538A

|   |  |
|---|--|
| <b>Precautionary statements</b>               | P273 Avoid release to the environment.<br>P280 Wear protective gloves/protective clothing/eye protection/face protection.<br>P302+P352a IF ON SKIN: Wash with plenty of soap and water<br>P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  |
| <b>Supplemental label information</b>         | EUH205 Contains epoxy constituents. May produce an allergic reaction.  |
| <b>Contains</b>                               | EPOXY RESIN (Number average MW <= 700 )  |
| <b>Supplementary precautionary statements</b> | P264 Wash contaminated skin thoroughly after handling.<br>P333+P313 If skin irritation or rash occurs: Get medical advice/attention.<br>P337+P313 If eye irritation persists: Get medical advice/attention.<br>P362+P364 Take off contaminated clothing and wash it before reuse.<br>P391 Collect spillage.<br>P501 Dispose of contents/container in accordance with existing Community, National and local regulations. |

### 2.3. Other hazards

None under normal conditions.

## SECTION 3: Composition/information on ingredients

### 3.2. Mixtures

|   |  |
|---|--|
| <b>EPOXY RESIN (Number average MW &lt;= 700 )</b>   | <b>60-100%</b>   |
| CAS number: 25068-38-6  | EC number: 500-033-5   |
| <b>Classification</b><br>Skin Irrit. 2 - H315<br>Eye Irrit. 2 - H319<br>Skin Sens. 1 - H317<br>Aquatic Chronic 2 - H411 | <b>Classification (67/548/EEC or 1999/45/EC)</b><br>R43 Xi;R36/38 N;R51/53 |
| <b>FORMALDEHYDE, OLIGOMERIC REACTION PRODUCT WITH 1-CHLORO, 2,3-EPOXYPROPANE AND PHENOL</b>                             | <b>1-5%</b>  |
| CAS number: 9003-36-5   | EC number: 500-006-8   |
| <b>Classification</b><br>Skin Irrit. 2 - H315<br>Skin Sens. 1 - H317<br>Aquatic Chronic 2 - H411                        |  |

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|   |  |
|---|--|
| <b>4-NONYLPHENOL, Branched</b>  | <b>&lt;1%</b>  |
| CAS number: 84852-15-3  | EC number: 284-325-5   |
| M factor (Acute) = 1  | M factor (Chronic) = 1   |
| <b>Classification</b><br>Acute Tox. 4 - H302<br>Skin Corr. 1B - H314<br>Eye Dam. 1 - H318<br>Repr. 2 - H361fd<br>Aquatic Acute 1 - H400<br>Aquatic Chronic 1 - H410 | <b>Classification (67/548/EEC or 1999/45/EC)</b><br>Repr. Cat. 3;R62,R63 C;R34 Xn;R22 N;R50/53 |
| <b>TRIMETHYLOLPROPANE TRIGLYCIDYL ETHER</b>   | <b>&lt;1%</b>  |
| CAS number: 30499-70-8  | EC number: 222-384-0   |
| <b>Classification</b><br>Skin Irrit. 2 - H315<br>Eye Irrit. 2 - H319<br>Skin Sens. 1 - H317<br>Aquatic Chronic 3 - H412   | <b>Classification (67/548/EEC or 1999/45/EC)</b><br>Xi;R36/38. R43,R52/53.                     |

The Full Text for all R-Phrases and Hazard Statements are Displayed in Section 16.

### SECTION 4: First aid measures

#### 4.1. Description of first aid measures

|                     |   |
|---------------------|---|
| <b>Inhalation</b>   | Move the exposed person to fresh air. Get medical attention if any discomfort continues.  |
| <b>Ingestion</b>    | Rinse mouth thoroughly with water. Give plenty of water to drink. Do not induce vomiting. Get medical attention if any discomfort continues.  |
| <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>  | 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 if any discomfort continues. |

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

|                     |   |
|---------------------|---|
| <b>Skin contact</b> | Skin irritation. Mild dermatitis, allergic skin rash. |
| <b>Eye contact</b>  | Irritating and may cause redness and pain.            |

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

|                             |   |
|-----------------------------|---|
| <b>Notes for the doctor</b> | No specific recommendations. Treat symptomatically. |
|-----------------------------|---|

### 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

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**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 measures

### 6.1. Personal precautions, protective 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 sections

**Reference to other sections** For personal protection, see Section 8. For waste disposal, see section 13.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

**Usage precautions** Avoid contact with skin and eyes. Do not eat, drink or smoke when using this product.

### 7.2. Conditions for safe storage, including any incompatibilities

**Storage precautions** Store in closed original container at temperatures between 5°C and 25°C.

### 7.3. Specific end use(s)

**Specific end use(s)** Adhesive. Sealant.

## SECTION 8: Exposure Controls/personal protection

### 8.1. Control parameters

### 8.2. Exposure controls

#### Protective equipment



#### Appropriate engineering controls

Provide adequate ventilation.

#### Eye/face protection

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

#### Hand protection

Nitrile rubber or Viton™ gloves are recommended. Cotton or other absorbent gloves should not be worn. Gloves should conform to EN 374. 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.

#### Other skin and body protection

Employee must wear appropriate protective clothing and equipment to prevent any possibility of skin contact with this substance.

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|                               |  |
|-------------------------------|--|
| <b>Hygiene measures</b>       | Wash hands 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> | No specific recommendations. Respiratory protection may be required if excessive airborne contamination occurs.  |

### SECTION 9: Physical and Chemical Properties

#### 9.1. Information on basic physical and chemical properties

|  |   |
|--|---|
| <b>Appearance</b>                      | Paste.  |
| <b>Colour</b>                          | White.  |
| <b>Odour</b>                           | Mild.   |
| <b>Odour threshold</b>                 | Not available.  |
| <b>pH</b>                              | Not available.  |
| <b>Melting point</b>                   | Not determined.   |
| <b>Initial boiling point and range</b> | Not applicable.   |
| <b>Flash point</b>                     | >100°C  |
| <b>Evaporation rate</b>                | Not available.  |
| <b>Vapour pressure</b>                 | Not determined.   |
| <b>Vapour density</b>                  | Not available.  |
| <b>Relative density</b>                | 1.1   |
| <b>Solubility(ies)</b>                 | Insoluble in water. Soluble in the following materials: Organic solvents. |
| <b>Auto-ignition temperature</b>       | Not determined.   |
| <b>Decomposition Temperature</b>       | Not available.  |
| <b>Viscosity</b>                       | ≈225000 mPa s @ 23°C Thixotropic  |
| <b>Explosive properties</b>            | Not determined.   |
| <b>Oxidising properties</b>            | Not determined.   |
| <b>9.2. Other information</b>          |   |
| <b>Other information</b>               | 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: Amines.

#### 10.4. Conditions to avoid

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**Conditions to avoid** Avoid excessive heat for prolonged periods of time.

### 10.5. Incompatible materials

**Materials to avoid** Strong oxidising agents. Strong acids. Strong alkalis.

### 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 toxicological properties of this product have not been fully evaluated. Avoid direct contact with skin or eyes. Do not ingest or inhale.

#### 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

No harmful effects expected from quantities likely to be ingested by accident.

#### Skin contact

Irritating to skin.

#### Eye contact

Irritating and may cause redness and pain.

### Toxicological information on ingredients.

#### EPOXY RESIN (Number average MW <= 700 )

##### Acute toxicity - oral

**Acute toxicity oral (LD<sub>50</sub> mg/kg)** 11,400.0

**Species** Rat

**ATE oral (mg/kg)** 11,400.0

##### Acute toxicity - dermal

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

**Species** Rabbit

**ATE dermal (mg/kg)** 2,000.1

#### FORMALDEHYDE, OLIGOMERIC REACTION PRODUCT WITH 1-CHLORO, 2,3-EPOXYPROPANE AND PHENOL

##### Acute toxicity - oral

**Acute toxicity oral (LD<sub>50</sub> mg/kg)** 10,000.0

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**Species** Rat  
**ATE oral (mg/kg)** 10,000.0

**Acute toxicity - dermal**

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

**Species** Rat  
**ATE dermal (mg/kg)** 2,000.1

**4-NONYLPHENOL, Branched****Acute toxicity - oral**

**Acute toxicity oral (LD<sub>50</sub> mg/kg)** 1,900.0

**Species** Rat  
**ATE oral (mg/kg)** 500.0

**Reproductive toxicity**

**Reproductive toxicity - fertility** - NOAEL 15 mg/kg/day, Oral, Rat P, F1, F2, F3

**Reproductive toxicity - development** Developmental toxicity: - NOAEL: >= 300 mg/kg/day, Oral, Rat

**TRIMETHYLOLPROPANE TRIGLYCIDYL ETHER****Acute toxicity - oral**

**Acute toxicity oral (LD<sub>50</sub> mg/kg)** 2,000.5

**Species** Rat  
**ATE oral (mg/kg)** 2,000.5

**Acute toxicity - dermal**

**Acute toxicity dermal (LD<sub>50</sub> mg/kg)** 2,000.5

**Species** Rabbit  
**ATE dermal (mg/kg)** 2,000.5

**SECTION 12: Ecological Information**

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

**12.1. Toxicity**

**Toxicity** No data available.

**Ecological information on ingredients.****EPOXY RESIN (Number average MW <= 700 )**

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|   |   |
|---|---|
| <b>Acute toxicity - fish</b>                    | LC <sub>50</sub> , 24 hours: 4.4 mg/l, Onchorhynchus mykiss (Rainbow trout) |
| <b>Acute toxicity - aquatic invertebrates</b>   | LC <sub>50</sub> , 24 hours: 4.9 mg/l, Daphnia magna                        |
| <b>Acute toxicity - aquatic plants</b>          | EC <sub>50</sub> , 48 hours: 9.1 mg/l, Selenastrum capricornutum            |
| <b>Acute toxicity - microorganisms</b>          | IC <sub>50</sub> , 3 hours: > 100 mg/l, Activated sludge                    |
| <b>Chronic toxicity - aquatic invertebrates</b> | NOEC, 21 days: 0.3 mg/l, Daphnia magna                                      |

### FORMALDEHYDE, OLIGOMERIC REACTION PRODUCT WITH 1-CHLORO, 2,3-EPOXYPROPANE AND PHENOL

|   |  |
|---|--|
| <b>Acute toxicity - fish</b>                  | LC <sub>50</sub> , 96 hours: 2.54 mg/l, Leuciscus idus (Golden orfe) |
| <b>Acute toxicity - aquatic invertebrates</b> | EC <sub>50</sub> , 48 hours: 2.55 mg/l, Daphnia magna                |
| <b>Acute toxicity - aquatic plants</b>        | EC <sub>50</sub> , 72 hours: 1.8 mg/l, Algae                         |

### 4-NONYLPHENOL, Branched

#### Acute aquatic toxicity

|                           |                               |
|---------------------------|-------------------------------|
| <b>LE(C)<sub>50</sub></b> | 0.1 < L(E)C <sub>50</sub> ≤ 1 |
| <b>M factor (Acute)</b>   | 1                             |

|   |   |
|---|---|
| <b>Acute toxicity - fish</b>                  | LC <sub>50</sub> , 96 hours: 209 µg/L, Lepomis macrochirus (Bluegill)   |
| <b>Acute toxicity - aquatic invertebrates</b> | EC <sub>50</sub> , 48 hours: 84.4 µg/L, Daphnia magna                   |
| <b>Acute toxicity - aquatic plants</b>        | EC <sub>50</sub> , 24 hours: 0.53 mg/l, Pseudokirchneriella subcapitata |
| <b>Acute toxicity - microorganisms</b>        | EC <sub>50</sub> , 3 hours: 950 mg/l, Activated sludge                  |

#### Chronic aquatic toxicity

|                           |   |
|---------------------------|---|
| <b>M factor (Chronic)</b> | 1 |
|---------------------------|---|

|   |   |
|---|---|
| <b>Chronic toxicity - fish early life stage</b> | NOEC, 91 days: 0.006 mg/l, Onchorhynchus mykiss (Rainbow trout) |
| <b>Chronic toxicity - aquatic invertebrates</b> | NOEC, 21 days: 0.024 mg/l, Daphnia magna                        |

### TRIMETHYLOLPROPANE TRIGLYCIDYL ETHER

|                              |  |
|------------------------------|--|
| <b>Acute toxicity - fish</b> | LC <sub>50</sub> , 96 hours: 10 - 100 mg/l, Fish |
|------------------------------|--|



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**Acute toxicity - aquatic invertebrates** EC<sub>50</sub>, 48 hours: 10 - 100 mg/l, Freshwater invertebrates

**Acute toxicity - aquatic plants** EC<sub>50</sub>, 96 hours: > 100 mg/l, Algae

### 12.2. Persistence and degradability

**Persistence and degradability** The product is not readily biodegradable.

#### Ecological information on ingredients.

##### EPOXY RESIN (Number average MW <= 700 )

**Biodegradation** Water - 6 - 12%: 28 days

##### 4-NONYLPHENOL, Branched

**Biodegradation** Water - 48.2%: 35 days

### 12.3. Bioaccumulative potential

#### Ecological information on ingredients.

##### EPOXY RESIN (Number average MW <= 700 )

**Bioaccumulative potential** BCF: 100 - 3000,

**Partition coefficient** log Pow: 3.242

### 12.4. Mobility in soil

**Mobility** No data available. The product has poor water-solubility.

#### Ecological information on ingredients.

##### EPOXY RESIN (Number average MW <= 700 )

**Adsorption/desorption coefficient** Water and sediment - log K<sub>oc</sub>: 2.65 @ 20°C

### 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 EU 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

## Permabond ET538A

### SECTION 14: Transport information

|                             |  |
|-----------------------------|--|
| <b>Road transport notes</b> | Applies only to inner containers >5 litres. See SP 375                     |
| <b>Sea transport notes</b>  | Applies only to inner containers >5 litres. See 2.10.2.7 of the IMDG code. |
| <b>Air transport notes</b>  | Applies only to inner containers >5 litres. See SP A197 (375)              |

#### 14.1. UN number

3082

#### 14.2. UN proper shipping name

ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (contains Epoxy 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

Tunnel restriction code (E)

#### 14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

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).

**EU legislation** Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures (as amended).  
Commission Regulation (EU) No 453/2010 of 20 May 2010 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).

## Permabond ET538A

|                                    |  |
|------------------------------------|--|
| <b>Guidance</b>                    | Workplace Exposure Limits EH40.<br>CHIP for everyone HSG228.<br>Safety Data Sheets for Substances and Preparations.<br>Approved Classification and Labelling Guide (Sixth edition) L131. |
| <b>Water hazard classification</b> | WGK 2  |

### 15.2. Chemical safety assessment

No chemical safety assessment has been carried out.

### SECTION 16: Other information

|                                  |   |
|----------------------------------|---|
| <b>Revision date</b>             | 19/05/2015  |
| <b>Revision</b>                  | 3   |
| <b>Supersedes date</b>           | 13/12/2012  |
| <b>Risk phrases in full</b>      | R22 Harmful if swallowed.<br>R34 Causes burns.<br>R36/38 Irritating to eyes and skin.<br>R43 May cause sensitisation by skin contact.<br>R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.<br>R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.<br>R62 Possible risk of impaired fertility.<br>R63 Possible risk of harm to the unborn child.  |
| <b>Hazard statements in full</b> | H302 Harmful if swallowed.<br>H314 Causes severe skin burns and eye damage.<br>H315 Causes skin irritation.<br>H317 May cause an allergic skin reaction.<br>H318 Causes serious eye damage.<br>H319 Causes serious eye irritation.<br>H361fd Suspected of damaging fertility. Suspected of damaging the unborn child.<br>H400 Very toxic to aquatic life.<br>H410 Very toxic to aquatic life with long lasting effects.<br>H411 Toxic to aquatic life with long lasting effects.<br>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.

# Permabond®

## Engineering Adhesives

### SAFETY DATA SHEET

#### Permabond ET538B

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

##### 1.1. Product identifier

**Product name** Permabond ET538B

##### 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 Ltd.  
Wessex Way  
Colden Common  
Winchester  
Hampshire. SO21 1WP  
United Kingdom  
Tel: +44 (0)1962 711 661  
Fax: +44 (0)1962 711 662  
info.europe@permabond.com

##### 1.4. Emergency telephone number

**Emergency telephone** UK +44 (0)1962 711 661 USA 0800 640 7599 Asia +86 (0)21 5773 4913

#### SECTION 2: Hazards identification

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

###### Classification

**Physical hazards** Not Classified

**Health hazards** Skin Corr. 1B - H314 Eye Dam. 1 - H318 Skin Sens. 1 - H317

**Environmental hazards** Aquatic Chronic 3 - H412

**Classification (67/548/EEC or 1999/45/EC)** Xi;R36/38. R43. R52/53.

##### 2.2. Label elements

###### Pictogram



**Signal word** Danger

**Hazard statements** H314 Causes severe skin burns and eye damage.  
H317 May cause an allergic skin reaction.  
H412 Harmful to aquatic life with long lasting effects.

## Permabond ET538B

|   |  |
|---|--|
| <b>Precautionary statements</b>               | <p>P280 Wear protective gloves/protective clothing/eye protection/face protection.</p> <p>P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.</p> <p>P302+P352a IF ON SKIN: Wash with plenty of soap and water</p> <p>P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.</p> <p>P308+P313 IF exposed or concerned: Get medical advice/attention.</p>  |
| <b>Contains</b>                               | <p>POLYAMINOAMIDE, 2,4,6-TRIS(DIMETHYLAMINOMETHYL)PHENOL, 3-AMINOPROPYLTRIETHOXYSILANE</p>   |
| <b>Supplementary precautionary statements</b> | <p>P260 Do not breathe vapour/spray.</p> <p>P264 Wash contaminated skin thoroughly after handling.</p> <p>P273 Avoid release to the environment.</p> <p>P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.</p> <p>P333+P313 If skin irritation or rash occurs: Get medical advice/attention.</p> <p>P362+P364 Take off contaminated clothing and wash it before reuse.</p> <p>P405 Store locked up.</p> <p>P501 Dispose of contents/container in accordance with existing Community, National and local regulations.</p> |

### 2.3. Other hazards

None under normal conditions.

## 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>   | <b>Classification (67/548/EEC or 1999/45/EC)</b> |
| Skin Irrit. 2 - H315  | Xi;R36/38. R43.                                  |
| Eye Irrit. 2 - H319   |  |
| Skin Sens. 1 - H317   |  |
| <b>AMINES, POLYETHYLENEPOLY-, TETRAETHYLENEPENTAMINE FRACTION</b> | <b>1-5%</b>                                      |
| CAS number: 90640-66-7  | EC number: 292-587-7                             |
| <b>Classification</b>   |  |
| Acute Tox. 4 - H302   |  |
| Acute Tox. 4 - H312   |  |
| Skin Corr. 1B - H314  |  |
| Eye Dam. 1 - H318   |  |
| Skin Sens. 1 - H317   |  |
| Aquatic Chronic 2 - H411  |  |

## Permabond ET538B

|  |  |             |
|--|--|-------------|
| <b>2,4,6-TRIS(DIMETHYLAMINOMETHYL)PHENOL</b> |  | <b>1-5%</b> |
| CAS number: 90-72-2                          | EC number: 202-013-9                             |             |
| <b>Classification</b>                        | <b>Classification (67/548/EEC or 1999/45/EC)</b> |             |
| Skin Corr. 1A - H314                         | Xn;R22 Xi;R36/38                                 |             |
| Eye Dam. 1 - H318                            |  |             |
| Skin Sens. 1 - H317                          |  |             |
| Aquatic Chronic 3 - H412                     |  |             |
| <b>3-AMINOPROPYLTRIETHOXYSILANE</b>          |  | <b>1-5%</b> |
| CAS number: 919-30-2                         | EC number: 213-048-4                             |             |
| <b>Classification</b>                        | <b>Classification (67/548/EEC or 1999/45/EC)</b> |             |
| Acute Tox. 4 - H302                          | C;R34 Xn;R22                                     |             |
| Skin Corr. 1B - H314                         |  |             |
| Eye Dam. 1 - H318                            |  |             |
| Skin Sens. 1 - H317                          |  |             |

The Full Text for all R-Phrases and Hazard Statements are Displayed in Section 16.

### SECTION 4: First aid measures

#### 4.1. Description of first aid measures

|                     |   |
|---------------------|---|
| <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>  | 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 symptoms and effects, both acute and delayed

|                     |  |
|---------------------|--|
| <b>Inhalation</b>   | Irritation of nose, throat and airway.               |
| <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. |
|-----------------------------|---|

### 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. |
|-------------------------|---|

## Permabond ET538B

**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 measures

### 6.1. Personal precautions, protective 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 sections

**Reference to other sections** For personal protection, see Section 8. For waste disposal, see section 13.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

**Usage precautions** Avoid contact with skin and eyes. Do not eat, drink or smoke when using this product.

### 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

### 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

#### Hand protection

Nitrile rubber or Viton™ gloves are recommended. Cotton or other absorbent gloves should not be worn. Gloves should conform to EN 374. 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.

#### Other skin and body protection

Employee must wear appropriate protective clothing and equipment to prevent any possibility of skin contact with this substance.

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|                               |  |
|-------------------------------|--|
| <b>Hygiene measures</b>       | Wash hands 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> | No specific recommendations. Respiratory protection may be required if excessive airborne contamination occurs.  |

### SECTION 9: Physical and Chemical Properties

#### 9.1. Information on basic physical and chemical properties

|  |  |
|--|--|
| <b>Appearance</b>                      | Coloured paste.  |
| <b>Colour</b>                          | Dark. Grey.  |
| <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°C   |
| <b>Evaporation rate</b>                | Not available.   |
| <b>Vapour pressure</b>                 | Not determined.  |
| <b>Vapour density</b>                  | Not determined.  |
| <b>Relative density</b>                | 1.4  |
| <b>Solubility(ies)</b>                 | Slightly soluble in water. Soluble in the following materials: Organic solvents. |
| <b>Auto-ignition temperature</b>       | Not determined.  |
| <b>Decomposition Temperature</b>       | Not determined.  |
| <b>Viscosity</b>                       | ≈60000 mPa s @ 23°C Thixotropic  |
| <b>Explosive properties</b>            | Not determined.  |
| <b>Oxidising properties</b>            | Not applicable.  |
| <b>9.2. Other information</b>          |  |
| <b>Other information</b>               | 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



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**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 toxicological properties of this product have not been fully evaluated. Avoid direct contact with skin or eyes. Do not ingest or inhale.

#### Acute toxicity - oral

#### Acute toxicity - dermal

#### 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 ingredients.

#### POLYAMINOAMIDE

##### Acute toxicity - oral

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

**Species** Rat

**ATE oral (mg/kg)** 2,000.1

##### Acute toxicity - dermal

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

**Species** Rat

**ATE dermal (mg/kg)** 2,000.1

#### AMINES, POLYETHYLENEPOLY-, TETRAETHYLENEPENTAMINE FRACTION

##### Acute toxicity - oral

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Acute toxicity oral (LD<sub>50</sub> mg/kg) 2,140.0

Species Rat

ATE oral (mg/kg) 500.0

### Acute toxicity - dermal

Acute toxicity dermal (LD<sub>50</sub> mg/kg) 1,260.0

Species Rabbit

ATE dermal (mg/kg) 1,260.0

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

### Acute toxicity - oral

Acute toxicity oral (LD<sub>50</sub> mg/kg) 1,200.0

Species Rat

### Acute toxicity - dermal

Acute toxicity dermal (LD<sub>50</sub> mg/kg) 1,280.0

Species Rat

### 3-AMINOPROPYLTRIETHOXYSILANE

### Acute toxicity - oral

Acute toxicity oral (LD<sub>50</sub> mg/kg) 1,780.0

Species Rat

ATE oral (mg/kg) 1,780.0

### Acute toxicity - inhalation

Acute toxicity inhalation (LC<sub>50</sub> dust/mist mg/l) 7.35

Species Rat

ATE inhalation (dusts/mists mg/l) 7.35

## SECTION 12: Ecological Information

**Ecotoxicity** Harmful to aquatic life with long lasting effects. Do not empty into drains.

### 12.1. Toxicity

**Toxicity** There are no data on the ecotoxicity of this product.

### Ecological information on ingredients.

### POLYAMINOAMIDE

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

## Permabond ET538B

|   |   |
|---|---|
| <b>Acute toxicity - aquatic invertebrates</b> | EC <sub>50</sub> , 24 hours: 9.72 mg/l, Daphnia magna                   |
| <b>Acute toxicity - aquatic plants</b>        | EC <sub>50</sub> , 72 hours: 4.34 mg/l, Pseudokirchneriella subcapitata |
| <b>Acute toxicity - microorganisms</b>        | EC <sub>50</sub> , 3 hours: 384 mg/l, Activated sludge                  |

### AMINES, POLYETHYLENEPOLY-, TETRAETHYLENEPENTAMINE FRACTION

|   |  |
|---|--|
| <b>Acute toxicity - fish</b>                  | LC <sub>50</sub> , 96 hours: 420 mg/l, Poecilia reticulata (Guppy)     |
| <b>Acute toxicity - aquatic invertebrates</b> | EC <sub>50</sub> , 48 hours: 24.1 mg/l, Daphnia magna                  |
| <b>Acute toxicity - aquatic plants</b>        | EC <sub>50</sub> , 72 hours: 6.8 mg/l, Pseudokirchneriella subcapitata |

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

|   |   |
|---|---|
| <b>Acute toxicity - fish</b>                  | LC <sub>50</sub> , 96 hours: > 180 - < 240 mg/l, Onchorhynchus mykiss (Rainbow trout) |
| <b>Acute toxicity - aquatic invertebrates</b> | LC <sub>50</sub> , 96 hours: 718 mg/l, Palaemonetes vulgaris                          |
| <b>Acute toxicity - aquatic plants</b>        | EC <sub>50</sub> , 72 hours: 84 mg/l, Desmodemus subspicatus                          |
| <b>Acute toxicity - microorganisms</b>        | NOEC, 28 days: 2 mg/l, Activated sludge   |

### 3-AMINOPROPYLTRIETHOXYSILANE

|   |   |
|---|---|
| <b>Acute toxicity - fish</b>                  | NOEC, 96 hours: >= 934 mg/l, Brachydanio rerio (Zebra Fish) |
| <b>Acute toxicity - aquatic invertebrates</b> | NOEC, 48 hours: 94 mg/l, Daphnia magna                      |
| <b>Acute toxicity - aquatic plants</b>        | NOEC, 72 hours: 1.3 mg/l, Scenedesmus subspicatus           |
| <b>Acute toxicity - microorganisms</b>        | EC <sub>50</sub> , 5.75 hours: 43 mg/l, Pseudomonas putida  |

#### 12.2. Persistence and degradability

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

#### Ecological information on ingredients.

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

|                       |                     |
|-----------------------|---------------------|
| <b>Biodegradation</b> | Water - 4%: 28 days |
|-----------------------|---------------------|

### 3-AMINOPROPYLTRIETHOXYSILANE

|                       |                                  |
|-----------------------|----------------------------------|
| <b>Biodegradation</b> | Water - Degradation 67%: 28 days |
|-----------------------|----------------------------------|

#### 12.3. Bioaccumulative potential

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

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### Ecological information on ingredients.

#### 3-AMINOPROPYLTRIETHOXYSILANE

**Bioaccumulative potential** BCF: 3.4, Cyprinus carpio (Common carp)

#### 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 EU 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**

**General** The product is not classified as dangerous for carriage.

#### 14.1. UN number

2735

#### 14.2. UN proper shipping name

POLYAMINES, LIQUID, CORROSIVE, N.O.S. (contains 2,4,6-Tris(dimethylaminomethyl)phenol)

#### 14.3. Transport hazard class(es)

8

#### Transport labels



#### 14.4. Packing group

III

#### 14.5. Environmental hazards

**Environmentally hazardous substance/marine pollutant**  
No.

#### 14.6. Special precautions for user

**EmS** F-A, S-B

## Permabond ET538B

Tunnel restriction code (E)

### 14.7. Transport in bulk according to Annex II of MARPOL73/78 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

|                                    |  |
|------------------------------------|--|
| <b>National regulations</b>        | The Chemicals (Hazard Information and Packaging for Supply) Regulations 2009 (SI 2009 No. 716).<br>Control of Substances Hazardous to Health Regulations 2002 (as amended).  |
| <b>EU legislation</b>              | Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures (as amended).<br>Commission Regulation (EU) No 453/2010 of 20 May 2010 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH). |
| <b>Guidance</b>                    | Workplace Exposure Limits EH40.<br>Introduction to Local Exhaust Ventilation HS(G)37.<br>CHIP for everyone HSG228.<br>Approved Classification and Labelling Guide (Sixth edition) L131.  |
| <b>Water hazard classification</b> | WGK 2  |

#### 15.2. Chemical safety assessment

No chemical safety assessment has been carried out.

### SECTION 16: Other information

|                             |   |
|-----------------------------|---|
| <b>Revision date</b>        | 21/09/2015  |
| <b>Revision</b>             | 3   |
| <b>Supersedes date</b>      | 22/05/2015  |
| <b>Risk phrases in full</b> | R21 Harmful in contact with skin.<br>R21/22 Harmful in contact with skin and if swallowed.<br>R22 Harmful if swallowed.<br>R34 Causes burns.<br>R36/38 Irritating to eyes and skin.<br>R43 May cause sensitisation by skin contact.<br>R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.<br>R52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment. |

## Permabond ET538B

### Hazard statements in full

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.  
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.

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