

# Permabond®

Engineering Adhesives

## SAFETY DATA SHEET

### Permabond PT326A

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

##### 1.1. Product identifier

**Product name** Permabond PT326A

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

**Identified uses** Two-component, isocyanate-based sealant. 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 (EC 1272/2008)

**Physical hazards** Not Classified

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

**Environmental hazards** Not Classified

**Classification (67/548/EEC or 1999/45/EC)** R43.

##### 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.

## Permabond PT326A

**Precautionary statements** 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.

**Contains** m-PHENYLENEBIS(METHYLAMINE)

**Supplementary precautionary statements** 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.

## SECTION 3: Composition/information on ingredients

### 3.2. Mixtures

<b>1,1',1'',1'''-ETHYLENEDINITRILOTETRAPROPAN-2-OL</b>	<b>10-30%</b>
CAS number: 102-60-3	EC number: 203-041-4
<b>Classification</b>	<b>Classification (67/548/EEC or 1999/45/EC)</b>
Eye Irrit. 2 - H319	Xi;R36.
<b>m-PHENYLENEBIS(METHYLAMINE)</b>	<b>1-5%</b>
CAS number: 1477-55-0	EC number: 216-032-5
<b>Classification</b>	<b>Classification (67/548/EEC or 1999/45/EC)</b>
Acute Tox. 4 - H302	Xn;R20/22. C;R34. R43,R52/53.
Acute Tox. 4 - H332	
Skin Corr. 1B - H314	
Eye Dam. 1 - H318	
Skin Sens. 1 - H317	
Aquatic Chronic 3 - H412	

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

**Inhalation** Move the exposed person to fresh air. Get medical attention if any discomfort continues.

**Ingestion** Do not induce vomiting. Rinse mouth thoroughly with water. Give plenty of water to drink. Get medical attention if any discomfort continues.

**Skin contact** Remove contaminated clothing. Wash skin thoroughly with soap and water. If symptoms develop, obtain medical attention

**Eye contact** Remove any contact lenses and open eyelids wide apart. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

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

**Skin contact** Skin irritation. Mild dermatitis, allergic skin rash.

## Permabond PT326A

**Eye contact** Irritating and may cause redness and pain.

### 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 from 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 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.

### 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)** Two-component, isocyanate-based sealant. Adhesive.

## SECTION 8: Exposure Controls/personal protection

### 8.1. Control parameters

**Ingredient comments** No exposure limits known for ingredient(s).

### 8.2. Exposure controls

## Permabond PT326A

### 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.

### Hygiene measures

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.

### Respiratory protection

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

Appearance	Liquid.
Colour	Black.
Odour	Slight.
Odour threshold	Not determined.
pH	Not determined.
Melting point	Not determined.
Initial boiling point and range	Not determined.
Flash point	>100°C
Evaporation rate	Not available.
Vapour pressure	Not determined.
Vapour density	Not determined.
Relative density	1.25
Solubility(ies)	Slightly soluble in water. Soluble in the following materials: Organic solvents.
Auto-ignition temperature	Not determined.
Decomposition Temperature	Not determined.
Viscosity	≈5500 mPa s @ 23°C Thixotropic
Explosive properties	Not determined.
Oxidising properties	Not applicable.

## Permabond PT326A

### 9.2. Other information

Other information Not relevant.

### SECTION 10: Stability and reactivity

#### 10.1. Reactivity

Reactivity There are no known reactivity hazards associated with this product.

#### 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: Isocyanates.

#### 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 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 to eyes.

#### Toxicological information on ingredients.

##### 1,1',1'',1'''-ETHYLENEDINITRILOTETRAPROPAN-2-OL

##### Acute toxicity - oral

Acute toxicity oral (LD<sub>50</sub> mg/kg) 2,890.0

Species Rat

## PermaBond PT326A

**ATE oral (mg/kg)** 2,890.0

### Skin corrosion/irritation

**Animal data** Not irritating.

### Serious eye damage/irritation

**Serious eye damage/irritation** Irritating to eyes.

### Skin sensitisation

**Skin sensitisation** Not sensitising.

### m-PHENYLENEBIS(METHYLAMINE)

#### Acute toxicity - oral

**Acute toxicity oral (LD<sub>50</sub> mg/kg)** 930.0

**Species** Rat

**ATE oral (mg/kg)** 930.0

#### Acute toxicity - dermal

**Acute toxicity dermal (LD<sub>50</sub> mg/kg)** 3,100.0

**Species** Rabbit

**ATE dermal (mg/kg)** 3,100.0

#### Acute toxicity - inhalation

**Acute toxicity inhalation (LC<sub>50</sub> dust/mist mg/l)** 1.34

**Species** Rat

**ATE inhalation (dusts/mists mg/l)** 1.34

## SECTION 12: Ecological Information

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

### 12.1. Toxicity

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

### Ecological information on ingredients.

#### 1,1',1'',1'''-ETHYLENEDINITRILOTETRAPROPAN-2-OL

**Acute toxicity - fish** LC<sub>50</sub>, 96 hours: > 2000 mg/l, *Leuciscus idus* (Golden orfe)

**Acute toxicity - aquatic invertebrates** EC<sub>0</sub>, 48 hours: >= 100 mg/l, *Daphnia magna*

**Acute toxicity - aquatic plants** EC<sub>50</sub>, 72 hours: 150.67 mg/l, *Desmodesmus subspicatus*

## Permabond PT326A

**Acute toxicity - microorganisms** EC<sub>50</sub>, 3 hours: > 10000 mg/l, Activated sludge

**Chronic toxicity - aquatic invertebrates** NOEC, 21 days: >= 10 mg/l, Daphnia magna

### m-PHENYLENEBIS(METHYLAMINE)

**Acute toxicity - fish** LC<sub>50</sub>, 96 hours: 87.6 mg/l, Oryzias latipes (Red killifish)

**Acute toxicity - aquatic invertebrates** EC<sub>50</sub>, 48 hours: 15.2 mg/l, Daphnia magna

**Acute toxicity - aquatic plants** EC<sub>50</sub>, 72 hours: 33.3 mg/l, Selenastrum capricornutum

**Acute toxicity - microorganisms** EC<sub>50</sub>, 30 minutes: > 1000 mg/l, Activated sludge

**Chronic toxicity - aquatic invertebrates** NOEC, 21 days: 4.7 mg/l, Daphnia magna

### 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.

### 12.4. Mobility in soil

**Mobility** No data available.

### Ecological information on ingredients.

#### 1,1',1'',1'''-ETHYLENEDINITRILOTETRAPROPAN-2-OL

**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

## Permabond PT326A

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

### 14.1. UN number

Not applicable.

### 14.2. UN proper shipping name

Not applicable.

### 14.3. Transport hazard class(es)

Not applicable.

### 14.4. Packing group

Not applicable.

### 14.5. Environmental hazards

**Environmentally hazardous substance/marine pollutant**

No.

### 14.6. Special precautions for user

Not applicable.

### 14.7. Transport in bulk according to Annex II of MARPOL 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

<b>National regulations</b>	The Chemicals (Hazard Information and Packaging for Supply) Regulations 2009 (SI 2009 No. 716). 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). 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)
<b>Guidance</b>	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

<b>Revision date</b>	27/05/2015
<b>Revision</b>	2
<b>Supersedes date</b>	24/03/2014



## Permabond PT326A

**Risk phrases in full**

R20/22 Harmful by inhalation and if swallowed.  
R34 Causes burns.  
R36 Irritating to eyes.  
R43 May cause sensitisation by skin contact.  
R52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

**Hazard statements in full**

H302 Harmful if swallowed.  
H314 Causes severe skin burns and eye damage.  
H315 Causes skin irritation.  
H317 May cause an allergic skin reaction.  
H318 Causes serious eye damage.  
H319 Causes serious eye irritation.  
H332 Harmful if inhaled.  
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 PT326B

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

##### 1.1. Product identifier

**Product name** Permabond PT326B

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

**Identified uses** 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 (EC 1272/2008)

**Physical hazards** Not Classified

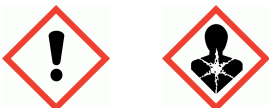
**Health hazards** Acute Tox. 4 - H332 Skin Irrit. 2 - H315 Eye Irrit. 2 - H319 Resp. Sens. 1 - H334 Skin Sens. 1 - H317 Carc. 2 - H351 STOT SE 3 - H335 STOT RE 2 - H373

**Environmental hazards** Not Classified

**Classification (67/548/EEC or 1999/45/EC)** Xn;R20,R48/20. Carc. Cat. 3;R40. R42/43. Xi;R36/37/38.

##### 2.2. Label elements

**Pictogram**



**Signal word**

Danger

## Permabond PT326B

<b>Hazard statements</b>	H315 Causes skin irritation. H317 May cause an allergic skin reaction. H319 Causes serious eye irritation. H332 Harmful if inhaled. H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled. H335 May cause respiratory irritation. H351 Suspected of causing cancer. H373 May cause damage to organs through prolonged or repeated exposure.
<b>Precautionary statements</b>	P202 Do not handle until all safety precautions have been read and understood. P280 Wear protective gloves/ protective clothing/ eye protection/ face protection. P302+P352a IF ON SKIN: Wash with plenty of soap and water P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing. P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P314 Get medical advice/ attention if you feel unwell.
<b>Supplemental label information</b>	EUH204 Contains isocyanates. May produce an allergic reaction.
<b>Contains</b>	DIPHENYLMETHANEDIISOCYANATE -Isomers & homologues
<b>Supplementary precautionary statements</b>	P260 Do not breathe vapour/ spray. P264 Wash contaminated skin thoroughly after handling. P271 Use only outdoors or in a well-ventilated area. P284 [In case of inadequate ventilation] wear respiratory protection. P308+P313 IF exposed or concerned: Get medical advice/ attention. P333+P313 If skin irritation or rash occurs: Get medical advice/ attention. P337+P313 If eye irritation persists: Get medical advice/ attention. P342+P311 If experiencing respiratory symptoms: Call a POISON CENTER/ doctor. P362+P364 Take off contaminated clothing and wash it before reuse. P403+P233 Store in a well-ventilated place. Keep container tightly closed. 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>DIPHENYLMETHANEDIISOCYANATE -Isomers &amp; homologues</b>	<b>50-70%</b>
CAS number: 9016-87-9	
<b>Classification</b>	<b>Classification (67/548/EEC or 1999/45/EC)</b>
Acute Tox. 4 - H332	Xn;R20. Xi;R36/37/38. R42.
Skin Irrit. 2 - H315	
Eye Irrit. 2 - H319	
Resp. Sens. 1 - H334	
Skin Sens. 1 - H317	
Carc. 2 - H351	
STOT SE 3 - H335	
STOT RE 2 - H373	

## Permabond PT326B

<b>DIPHENYLMETHANE-4,4'-DI-ISOCYANATE</b>		<b>10-30%</b>
CAS number: 101-68-8		EC number: 202-966-0
<b>Classification</b> Acute Tox. 4 - H332 Skin Irrit. 2 - H315 Eye Irrit. 2 - H319 Resp. Sens. 1 - H334 Skin Sens. 1 - H317 Carc. 2 - H351 STOT SE 3 - H335 STOT RE 2 - H373	<b>Classification (67/548/EEC or 1999/45/EC)</b> Carc. Cat. 3;R40 Xn;R20,R48/20 Xi;R36/37/38 R42/43	

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 affected person to fresh air at once. Keep affected person warm and at rest. Get medical attention immediately.
<b>Ingestion</b>	Rinse mouth thoroughly with water. Give plenty of water to drink. Do not induce vomiting. Get medical attention.
<b>Skin contact</b>	Remove contaminated clothing. Wash skin thoroughly with soap and water. If symptoms develop, obtain medical attention Wash contaminated clothing before reuse.
<b>Eye contact</b>	Remove any contact lenses and open eyelids wide apart. Rinse immediately with plenty of water for 15 minutes holding the eyelids open. Get medical attention.

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

<b>Inhalation</b>	Gas or vapour in high concentrations may irritate the respiratory system. Frequent inhalation of vapours may cause respiratory allergy.
<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>	Vapours may irritate the respiratory system and cause coughing, asthmatic breathing and breathlessness. 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>	Containers can burst violently or explode when heated, due to excessive pressure build-up.
<b>Hazardous combustion products</b>	Burning produces irritating, toxic and obnoxious fumes. Fire creates: Carbon monoxide (CO). Carbon dioxide (CO <sub>2</sub> ). Hydrogen cyanide (HCN). Isocyanates. Nitrous gases (NO <sub>x</sub> ).

#### 5.3. Advice for firefighters

## Permabond PT326B

**Protective actions during firefighting** Keep up-wind to avoid fumes. Avoid breathing fire gases or vapours.

**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. Provide adequate ventilation. Do not breathe vapour.

#### 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.

#### 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 inhalation of vapours. Avoid contact with skin and eyes. Do not eat, drink or smoke when using the 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. Keep container tightly closed and dry.

#### 7.3. Specific end use(s)

**Specific end use(s)** Two-component, isocyanate-based sealant. Adhesive.

### SECTION 8: Exposure Controls/personal protection

#### 8.1. Control parameters

##### Occupational exposure limits

##### DIPHENYLMETHANEDIISOCYANATE -Isomers & homologues

Long-term exposure limit (8-hour TWA): WEL 0.02 mg/m<sup>3</sup>(Sen)

Short-term exposure limit (15-minute): WEL 0.07 mg/m<sup>3</sup>(Sen)

WEL = Workplace Exposure Limit

#### 8.2. Exposure controls

##### Protective equipment



##### Appropriate engineering controls

Provide adequate general and local exhaust ventilation. Observe any occupational exposure limits for the product or ingredients.

##### Eye/face protection

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

## Permabond PT326B

<b>Hand protection</b>	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.
<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 hands at the end of each work shift and before eating, smoking and using the toilet. Promptly remove any clothing that becomes contaminated. When using do not eat, drink or smoke. Use of good industrial hygiene practices is required.
<b>Respiratory protection</b>	If ventilation is inadequate, suitable respiratory protection must be worn. Wear a respirator fitted with the following cartridge: Combination filter, type A2/P3.

### SECTION 9: Physical and Chemical Properties

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

<b>Appearance</b>	Viscous liquid.
<b>Colour</b>	Cream.
<b>Odour</b>	Musty (mouldy).
<b>Odour threshold</b>	Not available.
<b>pH</b>	Not relevant.
<b>Melting point</b>	Not available.
<b>Initial boiling point and range</b>	Not applicable.
<b>Flash point</b>	>100°C
<b>Evaporation rate</b>	Not available.
<b>Upper/lower flammability or explosive limits</b>	Not available.
<b>Vapour pressure</b>	Not available.
<b>Vapour density</b>	Not available.
<b>Relative density</b>	1.45
<b>Solubility(ies)</b>	Hardens in contact with water. Soluble in the following materials: Organic solvents.
<b>Auto-ignition temperature</b>	Not available.
<b>Viscosity</b>	≈4500 mPa s @ 23°C Thixotropic
<b>Oxidising properties</b>	Not available.

#### 9.2. Other information

<b>Other information</b>	Not relevant.
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### SECTION 10: Stability and reactivity

#### 10.1. Reactivity

<b>Reactivity</b>	Reactions with the following materials may generate heat: Water. The following materials may react with the product: Strong oxidising agents. Alcohols, glycols. Amines.
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#### 10.2. Chemical stability

<b>Stability</b>	Stable at normal ambient temperatures.
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## Permabond PT326B

### 10.3. Possibility of hazardous reactions

**Possibility of hazardous reactions** Under normal conditions of storage and use, no hazardous reactions will occur.

### 10.4. Conditions to avoid

**Conditions to avoid** Avoid contact with water. Contains non-volatile isocyanate. Heating may generate vapours which irritate the respiratory system, cause asthmatic breathing, breathlessness and risk of development of respiratory allergy.

### 10.5. Incompatible materials

**Materials to avoid** Strong reducing agents. Strong oxidising agents.

### 10.6. Hazardous decomposition products

**Hazardous decomposition products** Heating may generate the following products: Carbon monoxide (CO). Oxides of nitrogen. Isocyanates.

## 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.

#### Respiratory sensitisation

**Respiratory sensitisation** Frequent inhalation of vapours may cause respiratory allergy.

#### Skin sensitisation

**Skin sensitisation** May cause sensitisation by skin contact.

#### Carcinogenicity

**Carcinogenicity** Suspected of causing cancer.

#### Specific target organ toxicity - repeated exposure

**STOT - repeated exposure** May cause damage to organs (Respiratory tract, Lungs) through prolonged or repeated exposure.

#### 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. May cause respiratory system irritation.

#### Ingestion

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

#### Skin contact

Irritating to skin.

#### Eye contact

Irritating to eyes.

### Toxicological information on ingredients.

#### DIPHENYLMETHANEDIISOCYANATE -Isomers & homologues

##### Acute toxicity - inhalation

**ATE inhalation (vapours mg/l)** 11.0

##### Carcinogenicity

**IARC carcinogenicity** IARC Group 3 Not classifiable as to its carcinogenicity to humans.

## Permabond PT326B

### DIPHENYLMETHANE-4,4'-DI-ISOCYANATE

#### Acute toxicity - oral

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

Species Rat

ATE oral (mg/kg) 10,000.0

#### Acute toxicity - dermal

Acute toxicity dermal (LD<sub>50</sub> mg/kg) 9,400.0

Species Rabbit

ATE dermal (mg/kg) 9,400.0

#### Acute toxicity - inhalation

Acute toxicity inhalation (LC<sub>50</sub> dust/mist mg/l) 2.24

Species Rat

ATE inhalation (dusts/mists mg/l) 2.24

#### Carcinogenicity

IARC carcinogenicity IARC Group 3 Not classifiable as to its carcinogenicity to humans.

### SECTION 12: Ecological Information

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

#### 12.1. Toxicity

**Toxicity** No data available.

#### Ecological information on ingredients.

### DIPHENYLMETHANE-4,4'-DI-ISOCYANATE

**Acute toxicity - fish** LC<sub>50</sub>, 96 hours: > 1000 mg/l, Danio rerio (Zebrafish)

**Acute toxicity - aquatic invertebrates** EC<sub>50</sub>, 24 hours: > 1000 mg/l, Daphnia magna

**Acute toxicity - aquatic plants** NOELR, 72 hours: 1640 mg/l, Desmodium subspicatus

**Acute toxicity - microorganisms** EC<sub>50</sub>, 72 hours: > 100 mg/l, Activated sludge

**Chronic toxicity - aquatic invertebrates** NOEC, 21 days: >= 10 mg/l, Daphnia magna

#### 12.2. Persistence and degradability

**Persistence and degradability** The product is not expected to be biodegradable.

#### Ecological information on ingredients.



## Permabond PT326B

### DIPHENYLMETHANE-4,4'-DI-ISOCYANATE

**Biodegradation** Water - Degradation 0%: 28 days

#### 12.3. Bioaccumulative potential

**Bioaccumulative potential** Bioaccumulation is unlikely to be significant because of the low water-solubility of this product.

#### 12.4. Mobility in soil

**Mobility** The product has poor water-solubility.

#### 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** Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority.

**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

Not applicable.

#### 14.2. UN proper shipping name

Not applicable.

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

Not classified.

#### Transport labels

#### 14.4. Packing group

Not applicable.

#### 14.5. Environmental hazards

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

#### 14.6. Special precautions for user

Not applicable.

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



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## PermaBond PT326B

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).
<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). 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)
<b>Guidance</b>	Workplace Exposure Limits EH40. CHIP for everyone HSG228. Safety Data Sheets for Substances and Preparations. 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

<b>Revision date</b>	21/09/2015
<b>Revision</b>	3
<b>Supersedes date</b>	27/05/2015
<b>Risk phrases in full</b>	R20 Harmful by inhalation. R36/37/38 Irritating to eyes, respiratory system and skin. R40 Limited evidence of a carcinogenic effect. R42 May cause sensitisation by inhalation. R42/43 May cause sensitisation by inhalation and skin contact. R48/20 Harmful: danger of serious damage to health by prolonged exposure through inhalation.
<b>Hazard statements in full</b>	H315 Causes skin irritation. H317 May cause an allergic skin reaction. H319 Causes serious eye irritation. H332 Harmful if inhaled. H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled. H335 May cause respiratory irritation. H351 Suspected of causing cancer. H373 May cause damage to organs through prolonged or repeated exposure.

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