SAFETY DATA SHEET
Permabond TA4605B

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

1.1. Product identifier

Product name Permabond TA4605B

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 Skin Irrit. 2 - H315 Eye Irrit. 2 - H319 Skin Sens. 1 - H317 STOT SE 3 - H335

Environmental hazards Not Classified

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.
H335 May cause respiratory irritation.

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Precautionary statements
P280 Wear protective gloves, eye and 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.
P308+P313 IF exposed or concerned: Get medical advice/ attention.

Contains
BENZYL METHACRYLATE, 2-ETHYLHEXYL METHACRYLATE

Supplementary precautionary statements
P264 Wash contaminated skin thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.
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.
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

BENZYL METHACRYLATE **30-60%**

CAS number: 2495-37-6 EC number: 219-674-4

Classification	Classification (67/548/EEC or 1999/45/EC)
Skin Irrit. 2 - H315 Eye Irrit. 2 - H319 Skin Sens. 1 - H317 STOT SE 3 - H335	Xi;R36/37/38. R43.

2-ETHYLHEXYL METHACRYLATE **10-30%**

CAS number: 688-84-6 EC number: 211-708-6

Classification	Classification (67/548/EEC or 1999/45/EC)
Skin Sens. 1 - H317 Aquatic Chronic 3 - H412	Xi;R36/37/38.

TRIETHYLBORANE-1,3-DIAMINOPROPANE COMPLEX **1-5%**

CAS number: 148861-07-8

Classification	Classification (67/548/EEC or 1999/45/EC)
Acute Tox. 4 - H312 Skin Corr. 1A - H314 Eye Dam. 1 - H318	Xn;R21. C;R35.

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.

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Ingestion Rinse mouth thoroughly with water. Give plenty of water to drink. Do not induce vomiting. Get medical attention.

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

Eye contact Remove any contact lenses and open eyelids wide apart. Promptly wash eyes with plenty of water while lifting the eye lids. 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

Inhalation May cause respiratory irritation.

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

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 Foam, carbon dioxide or dry powder.

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

Hazardous combustion products Burning produces irritating, toxic and obnoxious fumes. Carbon monoxide, carbon dioxide, and unknown hydrocarbons. Oxides of nitrogen.

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 Not considered to be a significant hazard due to the small quantities used. Avoid discharge into drains.

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 Use in a well ventilated area. Avoid contact with skin and eyes. Avoid eating, drinking and smoking when using the product.

7.2. Conditions for safe storage, including any incompatibilities

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Storage precautions Keep only in the original container in a cool, well-ventilated place. Keep container dry. Store in closed original container at temperatures between 2°C and 7°C. Never return unused material to storage receptacle.

7.3. Specific end use(s)

Usage description Adhesive.

SECTION 8: Exposure Controls/personal protection

8.1. Control parameters

8.2. Exposure controls

Protective equipment

Appropriate engineering controls Provide adequate ventilation. Avoid inhalation of vapours. 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

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. 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 Colourless to pale yellow.

Odour Acrylic

Odour threshold Not available.

pH Not relevant.

Melting point Not available.

Initial boiling point and range Not applicable.

Flash point >100°C

Evaporation rate Not available.

Upper/lower flammability or explosive limits Not available.

Vapour pressure Not available.

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Vapour density	Not available.
Relative density	1.0
Solubility(ies)	Miscible with the following materials: Organic solvents.
Auto-ignition temperature	Not available.
Decomposition Temperature	Not available.
Viscosity	≈25000 mPa s @ 23°C
Oxidising properties	Not available.

9.2. Other information

Other information Not relevant.

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity The following materials may react with the product: Strong oxidising agents.

10.2. Chemical stability

Stability Stable at normal ambient temperatures.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions There are no known reactivity hazards associated with this product.

10.4. Conditions to avoid

Conditions to avoid Stable at normal ambient temperatures and when used as recommended.

10.5. Incompatible materials

Materials to avoid No specific material or group of materials is likely to react with the product to produce a hazardous situation.

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 corrosion/irritation

Animal data Irritating to skin.

Serious eye damage/irritation

Serious eye damage/irritation Irritating to eyes.

Skin sensitisation

Skin sensitisation May cause sensitisation by skin contact.

Aspiration hazard

Aspiration hazard Not anticipated to present an aspiration hazard, based on chemical structure.

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Inhalation May cause respiratory system irritation.

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

Toxicological information on ingredients.

BENZYL METHACRYLATE

Acute toxicity - oral

Acute toxicity oral (LD_{50} mg/kg)	3,980.0
Species	Rat
ATE oral (mg/kg)	3,980.0

Acute toxicity - dermal

Acute toxicity dermal (LD_{50} mg/kg)	2,000.1
Species	Rat
ATE dermal (mg/kg)	2,000.1

2-ETHYLHEXYL METHACRYLATE

Acute toxicity - oral

Acute toxicity oral (LD_{50} mg/kg)	2,000.1
Species	Rat
ATE oral (mg/kg)	2,000.1

Serious eye damage/irritation

Serious eye damage/irritation	Not irritating.

TRIMETHYLENEDIAMINE

Acute toxicity - oral

Acute toxicity oral (LD_{50} mg/kg)	707.0
Species	Rat
ATE oral (mg/kg)	707.0

Acute toxicity - dermal

Acute toxicity dermal (LD_{50} mg/kg)	200.0
Species	Rabbit
ATE dermal (mg/kg)	200.0

SECTION 12: Ecological Information

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

12.1. Toxicity

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Toxicity No data available.

Ecological information on ingredients.

BENZYL METHACRYLATE

Acute toxicity - fish	LC_{50}, 48 hours: 4.67 mg/l, Pimephales promelas (Fat-head Minnow)
Acute toxicity - aquatic plants	NOEC, 72 hours: 0.899 mg/l, Desmodesmus subspicatus EC_{50}, 72 hours: 2.28 mg/l, Desmodesmus subspicatus
Chronic toxicity - aquatic invertebrates	NOEC, 21 days: 4.21 mg/l, Daphnia magna

2-ETHYLHEXYL METHACRYLATE

Acute toxicity - fish	EC_{50}, 96 hours: 2.78 mg/l, Oryzias latipes (Red killifish)
Acute toxicity - aquatic invertebrates	EC_{50}, 48 hours: 4.56 mg/l, Daphnia magna
Acute toxicity - aquatic plants	EC_{50}, 72 hours: 7.68 mg/l, Selenastrum capricornutum NOEC, 72 hours: 0.28 mg/l, Selenastrum capricornutum
Acute toxicity - microorganisms	NOEC, 28 days: 100 mg/l, Activated sludge
Chronic toxicity - aquatic invertebrates	NOEC, 21 days: 0.11 mg/l, Daphnia magna

TRIMETHYLENEDIAMINE

Acute toxicity - fish	LC_{50}, 96 hours: > 100 - < 150 mg/l, Leuciscus idus (Golden orfe)
Acute toxicity - aquatic invertebrates	EC_{50}, 48 hours: 27.2 mg/l, Daphnia magna
Acute toxicity - aquatic plants	EC_{50}, 72 hours: 175 mg/l, Scenedesmus subspicatus
Acute toxicity - microorganisms	EC_{50}, 17 hours: 67.2 mg/l, Pseudomonas putida EC_{20}, 30 minutes: 1995 mg/l, Activated sludge

12.2. Persistence and degradability

Persistence and degradability No data available.

Ecological information on ingredients.

BENZYL METHACRYLATE

Biodegradation	Water - Degradation 74%: 28 days

2-ETHYLHEXYL METHACRYLATE

Biodegradation	Water - Degradation 88%: 28 days

12.3. Bioaccumulative potential

Bioaccumulative potential No data available on bioaccumulation.

12.4. Mobility in soil

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Mobility No data available.

Ecological information on ingredients.

BENZYL METHACRYLATE

Adsorption/desorption coefficient - log Koc: 2.57 @ 25°C

12.5. Results of PBT and vPvB assessment

Results of PBT and vPvB assessment This product does not contain any substances classified as PBT or vPvB.

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

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 Annex II of MARPOL 73/78 and the IBC Code Not applicable.

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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).

Guidance

Workplace Exposure Limits EH40.
CHIP for everyone HSG228.
Approved Classification and Labelling Guide (Sixth edition) L131.
Safety Data Sheets for Substances and Preparations.

15.2. Chemical safety assessment

No chemical safety assessment has been carried out.

SECTION 16: Other information

Revision date 14/03/2016

Revision 2

Supersedes date 26/05/2015

Hazard statements in full

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.
H335 May cause respiratory irritation.
H412 Harmful to aquatic life with long lasting effects.