

Permabond®

Engineering Adhesives

SAFETY DATA SHEET

Permabond TA4200B

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

1.1. Product identifier

Product name Permabond TA4200B

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 GmbH
Niederkasseler Lohweg 18
40547 Düsseldorf
Germany
info.europe@permabond.com

Manufacturer Permabond Engineering Adhesives Ltd.
Wessex Way
Colden Common
Winchester
Hampshire SO21 1WP
United Kingdom
Tel: +44 (0)1962 711 661
Fax: +44 (0)1962 711 662
info@permabond.co.uk

1.4. Emergency telephone number

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

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

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (EC 1272/2008)

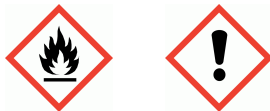
Physical hazards Flam. Liq. 3 - H226

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

Hazard pictograms



Signal word Warning

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Hazard statements	H226 Flammable liquid and vapour. H315 Causes skin irritation. H319 Causes serious eye irritation. H317 May cause an allergic skin reaction. H335 May cause respiratory irritation.
Precautionary statements	P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. 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. P308+P313 IF exposed or concerned: Get medical advice/ attention.
Contains	METHYL METHACRYLATE, 2-HYDROXYETHYL METHACRYLATE
Supplementary precautionary statements	P243 Take action to prevent static discharges. P261 Avoid breathing vapour/ spray. P264 Wash contaminated skin thoroughly after handling. P271 Use only outdoors or in a well-ventilated area. P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing. 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. P370+P378 In case of fire: Use foam, carbon dioxide, dry powder or water fog to extinguish. P403+P235 Store in a well-ventilated place. Keep cool. P405 Store locked up. P501 Dispose of contents/container in accordance with existing Community, National and local regulations.

2.3. Other hazards

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

SECTION 3: Composition/information on ingredients

3.2. Mixtures

METHYL METHACRYLATE	30-60%
CAS number: 80-62-6	EC number: 201-297-1
	REACH registration number: 01-2119452498-28-XXXX
Classification	
Flam. Liq. 2 - H225	
Skin Irrit. 2 - H315	
Skin Sens. 1 - H317	
STOT SE 3 - H335	
2-HYDROXYETHYL METHACRYLATE	10-30%
CAS number: 868-77-9	EC number: 212-782-2
	REACH registration number: 01-2119490169-29-XXXX
Classification	
Skin Irrit. 2 - H315	
Eye Irrit. 2 - H319	
Skin Sens. 1 - H317	

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3,5-DIETHYL-1,2-DIHYDRO-1-PHENYL-2-PROPYLPYRIDINE	1-5%
CAS number: 34562-31-7	EC number: 252-091-3
	REACH registration number: 01-2120769712-47-XXXX
REACH registration exemption – < 1 tonne	
Classification Acute Tox. 4 - H302 Skin Irrit. 2 - H315 Eye Irrit. 2 - H319 Aquatic Chronic 4 - H413	

The full text for all hazard statements is 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	Rinse mouth thoroughly with water. Give plenty of water to drink. Do not induce vomiting. 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. Rinse immediately with plenty of water for 15 minutes holding the eyelids open. Get medical attention if any discomfort continues.

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

Inhalation	Irritating to respiratory system.
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.
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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	Flammable liquid and vapour. Vapours are heavier than air and may travel along the floor and accumulate in the bottom of containers. Vapours may be ignited by a spark, a hot surface or an ember.
Hazardous combustion products	Burning produces irritating, toxic and obnoxious fumes. Carbon monoxide, carbon dioxide, and unknown hydrocarbons. Cool containers exposed to heat with water spray and remove them from the fire area if it can be done without risk.

5.3. Advice for firefighters

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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 Eliminate all sources of ignition. Ensure adequate ventilation of the working area. Do not breathe vapour. 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. Use in a well ventilated area. Do not ingest or inhale. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Take precautionary measures against static discharges.

7.2. Conditions for safe storage, including any incompatibilities

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.

7.3. Specific end use(s)

Specific end use(s) Adhesive.

SECTION 8: Exposure controls/Personal protection

8.1. Control parameters

Occupational exposure limits

METHYL METHACRYLATE

Long-term exposure limit (8-hour TWA): WEL 50 ppm 208 mg/m³

Short-term exposure limit (15-minute): WEL 100 ppm 416 mg/m³

WEL = Workplace Exposure Limit.

METHYL METHACRYLATE (CAS: 80-62-6)

DNEL	Workers, Industry/Professional - Inhalation; Long term : 208 mg/m ³ Workers, Industry/Professional - Dermal; Long term : 13.67 mg/kg/day Workers, Industry/Professional - Inhalation; Short term : 416 mg/m ³
PNEC	Workers, Industry/Professional - Water; Long term <0.94 mg/l

2-HYDROXYETHYL METHACRYLATE (CAS: 868-77-9)

DNEL	Workers, Industry - Inhalation; Long term systemic effects: 4.9 mg/m ³ Workers, Industry - Dermal; Long term systemic effects: 1.3 mg/kg/day
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PNEC	Workers, Industry - Water; Long term 0.482 mg/l
	Workers, Industry - Soil; Long term 0.476 mg/kg
	Workers, Industry - STP; Long term 10 mg/l
	Workers, Industry - Fresh water; 3.79 mg/kg

3,5-DIETHYL-1,2-DIHYDRO-1-PHENYL-2-PROPYLPYRIDINE (CAS: 34562-31-7)

DNEL	No data available.
PNEC	No data available.

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

Eyewear complying with an approved standard should be worn if a risk assessment indicates eye contact is possible. The following protection should be worn: Chemical splash goggles or face shield. Personal eye protection should conform to EN 166

Hand protection

It is recommended that chemical-resistant, impervious gloves are worn. Gloves should conform to EN 374. For exposure up to 4 hours, wear gloves made of the following material: Nitrile rubber. Thickness: ≥ 0.4 mm The selected gloves should have a breakthrough time of at least 0.5 hours. For exposure up to 8 hours, wear gloves made of the following material: Nitrile rubber. Thickness: ≥ 0.4 mm The selected gloves should have a breakthrough time of at least 8 hours. The breakthrough time for any glove material may be different for different glove manufacturers. The most suitable glove should be chosen in consultation with the glove supplier/manufacturer, who can provide information about the breakthrough time of the glove material. Considering the data specified by the glove manufacturer, check during use that the gloves are retaining their protective properties and change them as soon as any deterioration is detected.

Other skin and body protection

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

Hygiene measures

Wash at the end of each work shift and before eating, smoking and using the toilet. Promptly remove any clothing that becomes contaminated. When using do not eat, drink or smoke. Use of good industrial hygiene practices is required.

Respiratory protection

Ensure adequate ventilation of the working area. Respiratory protection may be required if excessive airborne contamination occurs. Respiratory protection complying with an approved standard should be worn if a risk assessment indicates inhalation of contaminants is possible. Organic vapour filter. Type A. (EN14387)

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	Paste.
Colour	Off-white.
Odour	Pungent. Acrylic
Odour threshold	Not available.

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pH	Not relevant.
Melting point	Not available.
Initial boiling point and range	~100°C
Flash point	≈30°C
Evaporation rate	Not available.
Upper/lower flammability or explosive limits	Not available.
Vapour pressure	Inconclusive data.
Relative density	1.0
Solubility(ies)	Slightly soluble in water. Soluble in the following materials: Organic solvents.
Partition coefficient	Not available.
Auto-ignition temperature	Not available.
Viscosity	≈45000 mPa s @ 23°C Thixotropic
Oxidising properties	Not available.
9.2. Other information	
Other information	Not relevant.
Volatile organic compound	This product contains a maximum VOC content of 60 %.

SECTION 10: Stability and reactivity

10.1. Reactivity

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

10.2. Chemical stability

Stability Stable at normal ambient temperatures.

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 Take precautionary measures against static discharges. Avoid heat, flames and other sources of ignition.

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

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Toxicological effects The mixture is classified based on the available hazard information for the ingredients as defined in the classification criteria for mixtures for each hazard class or differentiation in Annex I to Regulation 1272/2008/EC. Relevant available health/ecological information for the substances listed under Section 3 is provided in the following.

Skin sensitisation

Skin sensitisation May cause sensitisation by skin contact.

Aspiration hazard

Aspiration hazard None under normal conditions.

Inhalation

May cause respiratory system irritation.

Skin contact

Irritating to skin.

Eye contact

Irritating and may cause redness and pain.

Toxicological information on ingredients.

METHYL METHACRYLATE

Acute toxicity - oral

Acute toxicity oral (LD₅₀ mg/kg) 5,000.0

Species Rat

Acute toxicity - dermal

Acute toxicity dermal (LD₅₀ mg/kg) 5,000.0

Species Rat

Acute toxicity - inhalation

Acute toxicity inhalation (LC₅₀ vapours mg/l) 29.8

Species Rat

Skin corrosion/irritation

Skin corrosion/irritation Not irritating. Prolonged skin contact may cause temporary irritation.

Serious eye damage/irritation

Serious eye damage/irritation Not irritating.

Respiratory sensitisation

Respiratory sensitisation Mouse: Sensitising.

Skin sensitisation

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

Germ cell mutagenicity

Genotoxicity - in vitro Inconclusive.

Genotoxicity - in vivo This substance has no evidence of mutagenic properties.

Carcinogenicity

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Carcinogenicity	CMR: no
IARC carcinogenicity	IARC Group 3 Not classifiable as to its carcinogenicity to humans.
<u>Reproductive toxicity</u>	
Reproductive toxicity - fertility	No evidence of reproductive toxicity in animal studies.
Reproductive toxicity - development	No evidence of reproductive toxicity in animal studies. non-teratogenic, not embryotoxic
<u>Specific target organ toxicity - single exposure</u>	
Target organs	Respiratory tract Irritation.
<u>Specific target organ toxicity - repeated exposure</u>	
Target organs	No specific target organs known.
<u>Aspiration hazard</u>	
Aspiration hazard	Based on available data the classification criteria are not met.

2-HYDROXYETHYL METHACRYLATE

<u>Acute toxicity - oral</u>	
Acute toxicity oral (LD₅₀ mg/kg)	5,000.0
Species	Rat
<u>Acute toxicity - dermal</u>	
Acute toxicity dermal (LD₅₀ mg/kg)	5,000.0
Species	Rabbit
<u>Acute toxicity - inhalation</u>	
Notes (inhalation LC₅₀)	No information available.
<u>Skin corrosion/irritation</u>	
Animal data	Erythema/eschar score: Very slight erythema - barely perceptible (1). Not irritating.
<u>Serious eye damage/irritation</u>	
Serious eye damage/irritation	Moderately irritating.
<u>Respiratory sensitisation</u>	
Respiratory sensitisation	No information available.
<u>Skin sensitisation</u>	
Skin sensitisation	Guinea pig maximization test (GPMT) - Guinea pig: Sensitising.
<u>Germ cell mutagenicity</u>	
Genotoxicity - in vitro	Conclusive data but not sufficient for classification.
Genotoxicity - in vivo	Chromosome aberration: Negative.
<u>Carcinogenicity</u>	
Carcinogenicity	No specific test data are available.

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Reproductive toxicity

Reproductive toxicity - fertility Screening - NOAEL \geq 1000 mg/kg/day, Oral, Rat F1

Reproductive toxicity - development Developmental toxicity: - NOAEL: \geq 1000 mg/kg/day, Oral, Rat

Specific target organ toxicity - single exposure

STOT - single exposure No specific test data are available.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure No specific test data are available.

Aspiration hazard

Aspiration hazard Not applicable.

3,5-DIETHYL-1,2-DIHYDRO-1-PHENYL-2-PROPYLPYRIDINE

Acute toxicity - oral

Acute toxicity oral (LD₅₀ mg/kg) 500.1

Species Rat

Acute toxicity - dermal

Acute toxicity dermal (LD₅₀ mg/kg) 1,000.1

Species Rabbit

Acute toxicity - inhalation

Notes (inhalation LC₅₀) No specific test data are available.

Skin corrosion/irritation

Skin corrosion/irritation Moderately irritating.

Serious eye damage/irritation

Serious eye damage/irritation Moderately irritating.

Respiratory sensitisation

Respiratory sensitisation May cause respiratory system irritation.

Skin sensitisation

Skin sensitisation No specific test data are available.

Germ cell mutagenicity

Genotoxicity - in vitro No specific test data are available.

Carcinogenicity

Carcinogenicity No specific test data are available.

Reproductive toxicity

Reproductive toxicity - fertility No specific test data are available.

Specific target organ toxicity - single exposure

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STOT - single exposure No specific test data are available.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure No specific test data are available.

Aspiration hazard

Aspiration hazard No specific test data are available.

SECTION 12: Ecological information

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

12.1. Toxicity

Toxicity The mixture is classified based on the available hazard information for the ingredients as defined in the classification criteria for mixtures for each hazard class or differentiation in Annex I to Regulation 1272/2008/EC. Relevant available health/ecological information for the substances listed under Section 3 is provided in the following.

Ecological information on ingredients.

METHYL METHACRYLATE

Acute aquatic toxicity

Acute toxicity - fish LC₅₀, 96 hours: > 79 mg/l, *Oncorhynchus mykiss* (Rainbow trout)

Acute toxicity - aquatic invertebrates EC₅₀, 48 hours: 69 mg/l, *Daphnia magna*

Acute toxicity - aquatic plants NOEC, 72 hours: > 110 mg/l, *Selenastrum capricornutum*
EC₅₀, 72 hours: > 100 mg/l, *Selenastrum capricornutum*

Acute toxicity - microorganisms EC₂₀, 30 minutes: 150 - 200 mg/l, Activated sludge

Chronic aquatic toxicity

Chronic toxicity - fish early life stage NOEC, 35 days: 9.4 mg/l, *Danio rerio* (Zebrafish)

Chronic toxicity - aquatic invertebrates NOEC, 21 days: 37 mg/l, *Daphnia magna*

2-HYDROXYETHYL METHACRYLATE

Acute aquatic toxicity

Acute toxicity - fish LC₅₀, 96 hours: > 100 mg/l, *Oryzias latipes* (Red killifish)

Acute toxicity - aquatic invertebrates EC₅₀, 48 hours: 380 mg/l, *Daphnia magna*

Acute toxicity - aquatic plants EC₅₀, 72 hours: 836 mg/l, *Selenastrum capricornutum*
NOEC, 72 hours: 400 mg/l, *Selenastrum capricornutum*

Acute toxicity - microorganisms EC₅₀, 16 hours: > 3000 mg/l, *Pseudomonas fluorescens*

Chronic aquatic toxicity

Chronic toxicity - aquatic invertebrates NOEC, 21 days: 24.1 mg/l, *Daphnia magna*

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12.2. Persistence and degradability

Persistence and degradability The product is not readily biodegradable.

Ecological information on ingredients.

METHYL METHACRYLATE

Biodegradation Water - Degradation 94%: 14 days

2-HYDROXYETHYL METHACRYLATE

Biodegradation Water - Degradation 84%: 28 days

12.3. Bioaccumulative potential

Bioaccumulative potential No data available on bioaccumulation.

Partition coefficient Not available.

Ecological information on ingredients.

2-HYDROXYETHYL METHACRYLATE

Bioaccumulative potential BCF: 1.34 - 1.54,

12.4. Mobility in soil

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

Ecological information on ingredients.

2-HYDROXYETHYL METHACRYLATE

Adsorption/desorption coefficient Water - Koc: 42.7 @ 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 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

14.1. UN number

1993

14.2. UN proper shipping name

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FLAMMABLE LIQUID, N.O.S. (contains Methylmethacrylate)

14.3. Transport hazard class(es)

3

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-E, S-E

Hazard Identification Number (ADR/RID) 33 Highly flammable liquid (flash point below 21°C).

Tunnel restriction code (D/E)

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.

Not applicable.

SECTION 15: Regulatory information

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

National regulations The Chemicals (Hazard Information and Packaging for Supply) Regulations 2009 (SI 2009 No. 716).

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) 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)

Guidance 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

Revision date 24/01/2022

Revision 9

Permabond TA4200B

Supersedes date 28/07/2021

Hazard statements in full

- H225 Highly flammable liquid and vapour.
- H226 Flammable liquid and vapour.
- H302 Harmful if swallowed.
- H315 Causes skin irritation.
- H317 May cause an allergic skin reaction.
- H319 Causes serious eye irritation.
- H335 May cause respiratory irritation.
- H413 May cause long lasting harmful effects to aquatic life.

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.