

Permabond®

Engineering Adhesives

SAFETY DATA SHEET

Permabond A1046

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

1.1. Product identifier

Product name Permabond A1046

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

Identified uses Adhesive. Sealant.

1.3. Details of the supplier of the safety data sheet

Supplier Permabond Engineering Adhesives Ltd.
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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 Dam. 1 - H318 Skin Sens. 1 - H317 STOT SE 3 - H335

Environmental hazards Not Classified

Classification (67/548/EEC or 1999/45/EC) Xi;R36/37/38. R43.

2.2. Label elements

Pictogram



Signal word Danger

Hazard statements H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.
H335 May cause respiratory irritation.

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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. P308+P313 IF exposed or concerned: Get medical advice/ attention.
Contains	HYDROXYPROPYL METHACRYLATE, BISPHENOL A EPOXY DIACRYLATE, ACRYLIC ACID, CUMENE HYDROPEROXIDE
Supplementary precautionary statements	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. 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

HYDROXYPROPYL METHACRYLATE		30-60%
CAS number: 27813-02-1	EC number: 248-666-3	REACH registration number: 01-2119490226-37-XXXX
Classification Eye Irrit. 2 - H319 Skin Sens. 1 - H317	Classification (67/548/EEC or 1999/45/EC) Xi;R36. R43.	
BISPHENOL A EPOXY DIACRYLATE		10-30%
CAS number: 55818-57-0	EC number: 500-130-2	
Classification Skin Sens. 1 - H317	Classification (67/548/EEC or 1999/45/EC) R43,R53.	
ACRYLIC ACID		1-5%
CAS number: 79-10-7	EC number: 201-177-9	
M factor (Acute) = 1		
Classification Flam. Liq. 3 - H226 Acute Tox. 4 - H302 Acute Tox. 4 - H312 Acute Tox. 4 - H332 Skin Corr. 1A - H314 Eye Dam. 1 - H318 STOT SE 3 - H335 Aquatic Acute 1 - H400	Classification (67/548/EEC or 1999/45/EC) R10 C;R35 Xn;R20/21/22 N;R50	

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CUMENE HYDROPEROXIDE		1 -< 2.5%
CAS number: 80-15-9	EC number: 201-254-7	REACH registration number: 01-2119475796-19-XXXX
Classification Org. Perox. E - H242 Acute Tox. 4 - H302 Acute Tox. 4 - H312 Acute Tox. 3 - H331 Skin Corr. 1B - H314 Eye Dam. 1 - H318 STOT SE 3 - H335 STOT RE 2 - H373 Aquatic Chronic 2 - H411		Classification (67/548/EEC or 1999/45/EC) O;R7 T;R23 C;R34 Xn;R21/22,R48/20/22 N;R51/53

2-PHENYLACETOHYDRAZIDE		<1%
CAS number: 114-83-0	EC number: 204-055-3	
Classification Acute Tox. 3 - H301 Skin Irrit. 2 - H315 Eye Irrit. 2 - H319 Skin Sens. 1 - H317 STOT SE 3 - H335		Classification (67/548/EEC or 1999/45/EC) Xn;R22. Xi;R36/37/38. R43.

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	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	Make sure to remove any contact lenses from the eyes before rinsing. Promptly wash eyes with plenty of water while lifting the eye lids. Continue to rinse for at least 15 minutes. Get medical attention.

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

Inhalation	May cause irritation.
Skin contact	Skin irritation. Mild dermatitis, allergic skin rash.
Eye contact	Causes serious eye damage.

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	Foam, carbon dioxide or dry powder.
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Unsuitable extinguishing media Water.

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.

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

Storage precautions Store in closed original container at temperatures between 5°C and 25°C. Never return unused material to storage receptacle.

7.3. Specific end use(s)

Specific end use(s) This product is not recommended for use in joints which will be in contact with either pure oxygen or steam.

Usage description Adhesive. Sealant.

SECTION 8: Exposure Controls/personal protection

8.1. Control parameters

Occupational exposure limits

ETHANEDIOL

Long-term exposure limit (8-hour TWA): WEL 20 ppm 52 mg/m³ vapour

Short-term exposure limit (15-minute): WEL 40 ppm 104 mg/m³ vapour

Sk

Long-term exposure limit (8-hour TWA): WEL 10 mg/m³ particulate

Sk

WEL = Workplace Exposure Limit

Sk = Can be absorbed through the skin.

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8.2. Exposure controls

Protective equipment



Appropriate engineering controls

Provide adequate 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

Hand protection

Nitrile rubber or Viton™ gloves are recommended. 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	Green.
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.
Vapour density	Not available.
Relative density	1.1
Solubility(ies)	Slightly soluble in water. Soluble in the following materials: Organic solvents.
Auto-ignition temperature	Not available.
Decomposition Temperature	Not available.
Viscosity	≈9000 mPa s @ 23°C Thixotropic
Oxidising properties	Not available.

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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 Avoid the absence of air, and metal contamination.

10.5. Incompatible materials

Materials to avoid Metals and their salts. Free radical initiators.

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 Causes serious eye damage.

Skin sensitisation

Skin sensitisation May cause sensitisation by skin contact.

Aspiration hazard

Aspiration hazard None under normal conditions.

Inhalation

In high concentrations, vapours may irritate throat and respiratory system and cause coughing.

Toxicological information on ingredients.

HYDROXYPROPYL METHACRYLATE

Acute toxicity - oral

Acute toxicity oral (LD₅₀) 2,000.1
mg/kg)

Species Rat

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ATE oral (mg/kg) 2,000.1

Acute toxicity - dermal

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

Species Rabbit

Skin corrosion/irritation

Animal data Slightly irritating.

Serious eye damage/irritation

Serious eye damage/irritation Moderately irritating.

Respiratory sensitisation

Respiratory sensitisation There is no evidence that the material can lead to respiratory hypersensitivity.

Skin sensitisation

Skin sensitisation Epidemiological studies have shown evidence of skin sensitisation.

Germ cell mutagenicity

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

BISPHENOL A EPOXY DIACRYLATE

Acute toxicity - oral

Acute toxicity oral (LD₅₀ mg/kg) 2,000.1

Species Rat

ATE oral (mg/kg) 2,000.1

ACRYLIC ACID

Acute toxicity - oral

Acute toxicity oral (LD₅₀ mg/kg) 1,405.0

Species Rat

ATE oral (mg/kg) 500.0

Acute toxicity - dermal

Acute toxicity dermal (LD₅₀ mg/kg) 2,000.0

Species Rabbit

ATE dermal (mg/kg) 1,100.0

Acute toxicity - inhalation

Acute toxicity inhalation (LC₅₀ dust/mist mg/l) 3.6

Species Rat

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ATE inhalation (dusts/mists mg/l)	3.6
<u>Carcinogenicity</u>	
IARC carcinogenicity	IARC Group 3 Not classifiable as to its carcinogenicity to humans.
<u>Reproductive toxicity</u>	
Reproductive toxicity - fertility	- NOAEL 460 mg/l, Oral, Rat P, F1
Reproductive toxicity - development	Fetotoxicity: - NOAEC: >= 0.673 mg/l, Inhalation, Rabbit

CUMENE HYDROPEROXIDE

<u>Acute toxicity - oral</u>	
Acute toxicity oral (LD₅₀ mg/kg)	382.0
Species	Rat
ATE oral (mg/kg)	500.0
<u>Acute toxicity - dermal</u>	
ATE dermal (mg/kg)	1,100.0
<u>Acute toxicity - inhalation</u>	
ATE inhalation (vapours mg/l)	3.0
<u>Skin corrosion/irritation</u>	
Animal data	Highly irritating.
<u>Serious eye damage/irritation</u>	
Serious eye damage/irritation	Irritating to eyes.
<u>Skin sensitisation</u>	
Skin sensitisation	Not sensitising.

2-PHENYLACETOHYDRAZIDE

<u>Acute toxicity - oral</u>	
Acute toxicity oral (LD₅₀ mg/kg)	270.0
Species	Mouse
ATE oral (mg/kg)	270.0

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.

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HYDROXYPROPYL METHACRYLATE

Acute toxicity - fish	LC ₅₀ , 48 hours: 493 mg/l, Leuciscus idus (Golden orfe)
Acute toxicity - aquatic invertebrates	EC ₅₀ , 48 hours: 380 mg/l, Daphnia magna
Acute toxicity - aquatic plants	EC ₅₀ , 72 hours: > 97.2 mg/l, Pseudokirchneriella subcapitata NOEC, 72 hours: 97.2 mg/l, Pseudokirchneriella subcapitata
Chronic toxicity - aquatic invertebrates	NOEC, 21 days: 24.1 mg/l, Daphnia magna

BISPHENOL A EPOXY DIACRYLATE

Acute toxicity - fish	LL ₅₀ , 96 hours: > 100 mg/l, Cyprinus carpio (Common carp)
Acute toxicity - aquatic invertebrates	EC ₅₀ , 48 hours: > 16 mg/l, Daphnia magna
Acute toxicity - aquatic plants	EC ₅₀ , 72 hours: 17 mg/l, Pseudokirchneriella subcapitata
Acute toxicity - microorganisms	EC ₅₀ , 3 hours: > 1000 mg/l, Activated sludge

ACRYLIC ACID

Acute aquatic toxicity

LE(C)₅₀	0.1 < L(E)C ₅₀ ≤ 1
M factor (Acute)	1
Acute toxicity - fish	LC ₅₀ , 96 hours: 222 mg/l, Brachydanio rerio (Zebra Fish)
Acute toxicity - aquatic invertebrates	LC ₅₀ , 24 hours: 270 mg/l, Daphnia magna EC ₅₀ , 48 hours: 95 mg/l, Daphnia magna
Acute toxicity - aquatic plants	EC ₅₀ , 72 hours: 0.04 mg/l, Desmodium subspicatus EC ₅₀ , 96 hours: 0.17 mg/l, Pseudokirchneriella subcapitata
Acute toxicity - microorganisms	EC ₂₀ , 30 minutes: 900 mg/l, Activated sludge
Chronic toxicity - aquatic invertebrates	NOEC, 21 days: 19 mg/l, Daphnia magna

CUMENE HYDROPEROXIDE

Acute toxicity - fish	LC ₅₀ , 96 hour: 3.9 mg/l, Onchorhynchus mykiss (Rainbow trout)
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12.2. Persistence and degradability

Persistence and degradability No data available.

Ecological information on ingredients.

HYDROXYPROPYL METHACRYLATE

Biodegradation	Water - Degradation 94.2%: 28 days
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ACRYLIC ACID

Biodegradation Water - Degradation 81%: 28 days

CUMENE HYDROPEROXIDE

Biodegradation The substance is readily biodegradable.

12.3. Bioaccumulative potential

Bioaccumulative potential No data available on bioaccumulation.

Ecological information on ingredients.

ACRYLIC ACID

Partition coefficient log Kow: 0.46

12.4. Mobility in soil

Mobility No data available.

Ecological information on ingredients.

ACRYLIC ACID

Surface tension 69.6 mN/m @ 20°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.

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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

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. 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	18/09/2015
Revision	4
Supersedes date	09/04/2015

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Risk phrases in full

R10 Flammable.
R20/21/22 Harmful by inhalation, in contact with skin and if swallowed.
R21/22 Harmful in contact with skin and if swallowed.
R22 Harmful if swallowed.
R23 Toxic by inhalation.
R34 Causes burns.
R35 Causes severe burns.
R36 Irritating to eyes.
R36/37/38 Irritating to eyes, respiratory system and skin.
R37 Irritating to respiratory system.
R43 May cause sensitisation by skin contact.
R48/20/22 Harmful: danger of serious damage to health by prolonged exposure through inhalation and if swallowed.
R50 Very toxic to aquatic organisms.
R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R53 May cause long-term adverse effects in the aquatic environment.
R7 May cause fire.

Hazard statements in full

H226 Flammable liquid and vapour.
H242 Heating may cause a fire.
H301 Toxic if swallowed.
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.
H331 Toxic if inhaled.
H332 Harmful if inhaled.
H335 May cause respiratory irritation.
H373 May cause damage to organs through prolonged or repeated exposure.
H400 Very toxic to aquatic life.
H411 Toxic 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.