SAFETY DATA SHEET
Permabond MT3821A

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

1.1. Product identifier

Product name Permabond MT3821A

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

Identified uses Two-component, epoxy-based adhesive.

1.3. Details of the supplier of the safety data sheet

Supplier

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

1.4. Emergency telephone number

Emergency telephone 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 Not Classified

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

Environmental hazards Aquatic Chronic 3 - H412

2.2. Label elements

Hazard pictograms

Signal word Warning

Hazard statements

H315 Causes skin irritation.
H319 Causes serious eye irritation.
H317 May cause an allergic skin reaction.
H412 Harmful to aquatic life with long lasting effects.

Permabond MT3821A

Precautionary statements	P273 Avoid release to the environment. 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.
Supplemental label information	EUH205 Contains epoxy constituents. May produce an allergic reaction.
Contains	EPOXY RESIN (Number average MW <= 700)
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. This substance is not classified as PBT or vPvB according to current EU criteria.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

EPOXY RESIN (Number average MW <= 700) **10-<25%**

CAS number: 1675-54-3 EC number: 216-823-5 REACH registration number: 01-2119456619-26-XXXX

Classification
Skin Irrit. 2 - H315
Eye Irrit. 2 - H319
Skin Sens. 1 - H317
Aquatic Chronic 2 - H411

[3-(2,3-EPOXYPROPOXY)PROPYL]TRIMETHOXYSILANE **1-<3%**

CAS number: 2530-83-8 EC number: 219-784-2 REACH registration number: 01-2119513212-58-XXXX

Classification
Eye Dam. 1 - H318

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 immediately and wash skin with soap and water. If symptoms develop, obtain medical attention
Eye contact	Rinse immediately with plenty of water for 15 minutes holding the eyelids open. Remove any contact lenses and open eyelids wide apart. Get medical attention if any discomfort continues.

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

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 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

Hazardous combustion products Burning produces irritating, toxic and obnoxious fumes. Nitrous gases (NOx). Carbon monoxide, carbon dioxide, and unknown hydrocarbons.

5.3. Advice for firefighters

Special protective equipment for firefighters Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions Wear protective clothing as described in Section 8 of this safety data sheet.

6.2. Environmental precautions

Environmental precautions Do not discharge into drains or watercourses or onto the ground.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up Absorb spillage with sand or other inert absorbent. Transfer to suitable, labelled containers for disposal. Wash area with soap and water.

6.4. Reference to other sections

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

SECTION 7: Handling and storage

7.1. Precautions for safe handling

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

7.2. Conditions for safe storage, including any incompatibilities

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

7.3. Specific end use(s)

Specific end use(s) Adhesive. Sealant.

SECTION 8: Exposure controls/Personal protection

8.1. Control parameters

EPOXY RESIN (Number average MW <= 700) (CAS: 1675-54-3)

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DNEL	Workers - Inhalation; Long term systemic effects: 12.25 mg/m³ Workers - Dermal; Long term systemic effects: 8.33 mg/kg/day Workers - Inhalation; Short term systemic effects: 12.25 mg/m³ Workers - Dermal; Short term systemic effects: 8.33 mg/kg/day
PNEC	- Fresh water; Long term 0.006 mg/l - Sediment (Freshwater); Long term 0.996 mg/l - Sediment (Marinewater); 0.0996 mg/l - STP; Long term 10 mg/l - Soil; Long term 0.196 mg/l - marine water; 0.0006 mg/l - Water; 0.0018 mg/l

[3-(2,3-EPOXYPROPOXY)PROPYL]TRIMETHOXYSILANE (CAS: 2530-83-8)

DNEL	Workers - Inhalation; Long term systemic effects: 147 mg/m³ Workers - Dermal; Long term systemic effects: 21 mg/kg/day
PNEC	Fresh water; 1 mg/l Intermittent release; 1 mg/l marine water; 0.1 mg/l STP; 10 mg/l Sediment (Freshwater); 3.6 mg/kg Sediment (Marinewater); 0.36 mg/kg

8.2. Exposure controls

Protective equipment

Appropriate engineering controls	Provide adequate ventilation.
Eye/face protection	The following protection should be worn: Chemical splash goggles or face shield. Personal eye protection should conform to EN 166
Hand protection	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. 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.

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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	Coloured paste.
Colour	Black.
Odour	Mild.
Odour threshold	Not available.
pH	Not available.
Melting point	Not determined.
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 determined.
Vapour density	Not available.
Relative density	1.3
Solubility(ies)	Insoluble in water. Soluble in the following materials: Organic solvents.
Partition coefficient	Not available.
Auto-ignition temperature	Not determined.
Decomposition Temperature	Not available.
Viscosity	≈200000 mPa s @ 23°C Thixotropic
Explosive properties	Not determined.
Oxidising properties	Not determined.

9.2. Other information

Other information	Not relevant.

SECTION 10: Stability and reactivity

10.1. Reactivity

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

10.2. Chemical stability

Stability	Stable at normal ambient temperatures.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions	Reactions with the following materials may generate heat: Amines.

Permabond MT3821A

10.4. Conditions to avoid

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

10.5. Incompatible materials

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

10.6. Hazardous decomposition products

Hazardous decomposition products Thermal decomposition could produce carbon monoxide, carbon dioxide, and unidentified organic compounds.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Toxicological effects The 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 Unlikely to be hazardous by inhalation because of the low vapour pressure of the product at ambient temperature. In high concentrations, vapours may irritate throat and respiratory system and cause coughing.

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

Skin contact Irritating to skin.

Eye contact Irritating and may cause redness and pain.

Toxicological information on ingredients.

EPOXY RESIN (Number average MW <= 700)

Acute toxicity - oral

Acute toxicity oral (LD_{50} mg/kg)	11,400.0
Species	Rat

Acute toxicity - dermal

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

Acute toxicity - inhalation

Notes (inhalation LC_{50})	No specific test data are available.

Skin corrosion/irritation

Skin corrosion/irritation	Not irritating.
Animal data	Oedema score: Very slight oedema - barely perceptible (1).

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Serious eye damage/irritation

Serious eye damage/irritation	Not irritating.

Respiratory sensitisation

Respiratory sensitisation	No specific test data are available.

Skin sensitisation

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

Germ cell mutagenicity

Genotoxicity - in vitro	Conclusive data but not sufficient for classification.

Carcinogenicity

Carcinogenicity	Conclusive data but not sufficient for classification.
IARC carcinogenicity	IARC Group 3 Not classifiable as to its carcinogenicity to humans.

Reproductive toxicity

Reproductive toxicity - fertility	Fertility - NOAEL 750 mg/kg/day, Oral, Rat
Reproductive toxicity - development	Developmental toxicity: - NOAEL: 180 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	Conclusive data but not sufficient for classification.

Aspiration hazard

Aspiration hazard	Based on available data the classification criteria are not met.

[3-(2,3-EPOXYPROPOXY)PROPYL]TRIMETHOXYSILANE

Acute toxicity - oral

Acute toxicity oral (LD_{50} mg/kg)	7,010.0
Species	Rat

Acute toxicity - dermal

Acute toxicity dermal (LD_{50} mg/kg)	6,800.0
Species	Rabbit

Acute toxicity - inhalation

Acute toxicity inhalation (LC_{50} dust/mist mg/l)	5.3
Species	Rat

Skin corrosion/irritation

Animal data	Method: OECD 404, Rabbit Not irritating.

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Serious eye damage/irritation

Serious eye damage/irritation	Method: OECD 405, Rabbit Irritating to eyes.

Skin sensitisation

Skin sensitisation	Buehler test - Guinea pig: Not sensitising.

Germ cell mutagenicity

Genotoxicity - in vitro	Read-across data. Chromosome aberration: Negative.
Genotoxicity - in vivo	Chromosome aberration: Positive.

Carcinogenicity

Carcinogenicity	NOAEL >=5 mg/kg/day, Dermal, Mouse

Reproductive toxicity

Reproductive toxicity - fertility	- NOAEL 500 mg/kg/day, Oral, Rat P
Reproductive toxicity - development	Maternal toxicity: - NOAEL: 200 mg/kg/day, Oral, Rabbit

Specific target organ toxicity - single exposure

STOT - single exposure	No information available.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure	No information available.

Aspiration hazard

Aspiration hazard	Not available.

SECTION 12: Ecological information

Ecotoxicity Harmful to aquatic life with long lasting effects. Avoid release 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.

EPOXY RESIN (Number average MW <= 700)

Acute aquatic toxicity

Acute toxicity - fish	LC_{50}, 24 hours: 4.4 mg/l, Oncorhynchus mykiss (Rainbow trout)
Acute toxicity - aquatic invertebrates	LC_{50}, 24 hours: 4.9 mg/l, Daphnia magna
Acute toxicity - aquatic plants	EC_{50}, 48 hours: 9.1 mg/l, Selenastrum capricornutum
Acute toxicity - microorganisms	IC_{50}, 3 hours: > 100 mg/l, Activated sludge

Chronic aquatic toxicity

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Chronic toxicity - aquatic invertebrates	NOEC, 21 days: 0.3 mg/l, Daphnia magna

[3-(2,3-EPOXYPROPOXY)PROPYL]TRIMETHOXYSILANE

Acute aquatic toxicity

Acute toxicity - fish	LC_{50}, 96 hours: 55 mg/l, Cyprinus carpio (Common carp)
Acute toxicity - aquatic invertebrates	NOEC, 48 hours: < 250 mg/l, Daphnia magna
Acute toxicity - aquatic plants	NOEC, 96 days: 130 mg/l, Pseudokirchneriella subcapitata
Acute toxicity - microorganisms	NOEC, 3 hours: > 100 mg/l, Activated sludge

Chronic aquatic toxicity

Chronic toxicity - aquatic invertebrates	NOEC, 21 days: >= 100 mg/l, Daphnia magna

12.2. Persistence and degradability

Persistence and degradability The product is not readily biodegradable.

Ecological information on ingredients.

EPOXY RESIN (Number average MW <= 700)

Biodegradation	Water - 6 - 12%: 28 days

[3-(2,3-EPOXYPROPOXY)PROPYL]TRIMETHOXYSILANE

Biodegradation	Water - 37%: 28 days

12.3. Bioaccumulative potential

Partition coefficient Not available.

Ecological information on ingredients.

EPOXY RESIN (Number average MW <= 700)

Bioaccumulative potential	BCF: 100 - 3000,
Partition coefficient	log Pow: 3.242

12.4. Mobility in soil

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

Ecological information on ingredients.

EPOXY RESIN (Number average MW <= 700)

Adsorption/desorption coefficient	Water - log Koc: 2.65 @ 20°C

12.5. Results of PBT and vPvB assessment

Results of PBT and vPvB assessment This substance is not classified as PBT or vPvB according to current EU criteria.

Permabond MT3821A

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.

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)

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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	21/06/2019
Revision	7
Supersedes date	20/08/2018
Hazard statements in full	H315 Causes skin irritation. H317 May cause an allergic skin reaction. H318 Causes serious eye damage. H319 Causes serious eye irritation. H411 Toxic to aquatic life with long lasting effects. H412 Harmful to aquatic life with long lasting effects.

SAFETY DATA SHEET
Permabond MT3821B

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

1.1. Product identifier

Product name Permabond MT3821B

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

Identified uses Two-component, epoxy-based adhesive.

1.3. Details of the supplier of the safety data sheet

Supplier

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

1.4. Emergency telephone number

Emergency telephone 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 Not Classified

Health hazards Skin Irrit. 2 - H315 Eye Dam. 1 - H318

Environmental hazards Not Classified

2.2. Label elements

Hazard pictograms

Signal word Danger

Hazard statements

H315 Causes skin irritation.
H318 Causes serious eye damage.

Permabond MT3821B

Precautionary statements	P280 Wear protective gloves/ protective clothing/ eye protection/ face protection. P302+P352 IF ON SKIN: Wash with plenty of 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	1,4-DIAZABICYCLOOCTANE, POLYOXYPROPYLENEDIAMINE
Supplementary precautionary statements	P264 Wash contaminated skin thoroughly after handling. P332+P313 If skin irritation occurs: Get medical advice/ attention. P362+P364 Take off contaminated clothing and wash it before reuse.

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

TRIS-2,4,6-(DIMETHYLAMINOMETHYL)PHENOL **5-10%**

CAS number: 90-72-2 EC number: 202-013-9 REACH registration number: 01-2119560597-27-XXXX

Classification
Acute Tox. 4 - H302
Skin Irrit. 2 - H315
Eye Irrit. 2 - H319

1,4-DIAZABICYCLOOCTANE **1-5%**

CAS number: 280-57-9 EC number: 205-999-9 REACH registration number: 01-2119980944-22-XXXX

Classification
Flam. Sol. 1 - H228
Acute Tox. 4 - H302
Skin Irrit. 2 - H315
Eye Dam. 1 - H318

POLYOXYPROPYLENEDIAMINE **1-5%**

CAS number: 9046-10-0 REACH registration number: 01-2119557899-12-XXXX

Classification
Skin Corr. 1B - H314
Eye Dam. 1 - H318
Aquatic Chronic 3 - H412

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.

Permabond MT3821B

Ingestion	Never give anything by mouth to an unconscious person. 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. 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

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

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

Notes for the doctor	No specific recommendations. If in doubt, get medical attention promptly. 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. Wash area with soap and water.

6.4. Reference to other sections

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

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Usage precautions	Avoid contact with skin and eyes. Do not ingest or inhale. Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling.

Permabond MT3821B

7.2. Conditions for safe storage, including any incompatibilities

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

7.3. Specific end use(s)

Specific end use(s) Adhesive. Sealant.

SECTION 8: Exposure controls/Personal protection

8.1. Control parameters

TRIS-2,4,6-(DIMETHYLAMINOMETHYL)PHENOL (CAS: 90-72-2)

PNEC
Fresh water; 0.084 mg/l
marine water; 0.008 mg/l
STP; 0.2 mg/l

POLYOXYPROPYLENEDIAMINE (CAS: 9046-10-0)

DNEL
Workers - Inhalation; Long term systemic effects: 1.36 mg/m³
Workers - Dermal; Long term systemic effects: 2.5 mg/kg/day

PNEC
Fresh water; 0.015 mg/l
marine water; 0.014 mg/l
STP; 7.5 mg/l
Sediment (Freshwater); 0.132 mg/kg
Sediment (Marinewater); 0.125 mg/kg
Soil; 0.018 mg/kg

8.2. Exposure controls

Protective equipment

Appropriate engineering controls Provide adequate general and local exhaust ventilation.

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

Hand protection 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.

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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	Black.
Odour	Amine.
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.
Upper/lower flammability or explosive limits	Not available.
Vapour pressure	Not determined.
Vapour density	Not determined.
Relative density	1.7
Solubility(ies)	Insoluble in water.
Partition coefficient	Not available.
Auto-ignition temperature	Not determined.
Decomposition Temperature	Not determined.
Viscosity	≈100000 mPa s @ 23°C Thixotropic
Explosive properties	Not determined.
Oxidising properties	Not applicable.

9.2. Other information

Other information	Not relevant.

SECTION 10: Stability and reactivity

10.1. Reactivity

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

10.2. Chemical stability

Stability	Stable at normal ambient temperatures.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions	Reactions with the following materials may generate heat: Epoxy resin

Permabond MT3821B

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 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.

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. Gas or vapour in high concentrations may irritate the respiratory system. Symptoms following overexposure may include the following: Coughing.

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

Skin contact Irritating to skin.

Eye contact May cause serious eye damage.

Toxicological information on ingredients.

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

Acute toxicity - oral

Acute toxicity oral (LD_{50} mg/kg) 2,169.0

Species Rat

Acute toxicity - inhalation

Notes (inhalation LC_{50}) No information available.

Skin corrosion/irritation

Skin corrosion/irritation Method: OECD 404, Rabbit Corrosive

Serious eye damage/irritation

Serious eye damage/irritation Rabbit Causes serious eye irritation.

Skin sensitisation

Skin sensitisation Guinea pig maximization test (GPMT) - Guinea pig: Mild dermatitis, allergic skin rash.

Germ cell mutagenicity

Genotoxicity - in vitro Gene mutation: Negative.

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Genotoxicity - in vivo	No information available.

Carcinogenicity

Carcinogenicity	No information available.

Reproductive toxicity

Reproductive toxicity - fertility	Screening - NOAEL 15 mg/kg/day, Oral, Rat F1
Reproductive toxicity - development	Developmental toxicity: - NOAEL: >150 mg/kg/day, Oral, Rat

Specific target organ toxicity - single exposure

STOT - single exposure	No information available.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure	No information available.

Aspiration hazard

Aspiration hazard	No information available.

1,4-DIAZABICYCLOOCTANE

Acute toxicity - oral

Acute toxicity oral (LD_{50} mg/kg)	700.0
Species	Rat

Acute toxicity - dermal

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

Reproductive toxicity

Reproductive toxicity - fertility	Screening - NOAEL 100 mg/kg/day, Oral, Rat P

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Acute toxicity - oral

Acute toxicity oral (LD_{50} mg/kg)	2,885.3
Species	Rat

Acute toxicity - dermal

Acute toxicity dermal (LD_{50} mg/kg)	2,979.7
Species	Rabbit

Skin corrosion/irritation

Animal data	Corrosive.

Serious eye damage/irritation

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Serious eye damage/irritation	Corrosive

Germ cell mutagenicity

Genotoxicity - in vitro	Negative.
Genotoxicity - in vivo	Negative.

Reproductive toxicity

Reproductive toxicity - development	Developmental toxicity: - NOAEL: 30 mg/kg, Dermal, Rat

Specific target organ toxicity - single exposure

STOT - single exposure	Not available.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure	Not available.

Aspiration hazard

Aspiration hazard	Not available.

Ingestion	May cause burns in mucous membranes, throat, oesophagus and stomach.
Skin contact	Causes severe burns.
Eye contact	Causes serious eye damage.

SECTION 12: Ecological information

Ecotoxicity The product is not expected to be toxic to aquatic organisms.

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.

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

Acute aquatic toxicity

Acute toxicity - fish	LC_{50}, 96 hours: 175 mg/l, Cyprinus carpio (Common carp)
Acute toxicity - aquatic invertebrates	LC_{50}, 96 hours: 718 mg/l, Palaemonetes vulgaris
Acute toxicity - aquatic plants	EC_{50}, 72 hours: 84 mg/l, Scenedesmus subspicatus
Acute toxicity - microorganisms	NOEC, 28 days: 2 mg/l, Activated sludge

1,4-DIAZABICYCLOOCTANE

Acute aquatic toxicity

Acute toxicity - fish	LC_{0}, 96 hours: >100 mg/l, Cyprinus carpio (Common carp)

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Acute toxicity - aquatic invertebrates	EC_{50}, 48 hours: >100 mg/l, Daphnia magna
Acute toxicity - aquatic plants	EC_{50}, 72 hours: 110 mg/l, Selenastrum capricornutum
Acute toxicity - microorganisms	EC_{50}, 17 hours: 355.6 mg/l, Pseudomonas putida

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Acute aquatic toxicity

Acute toxicity - fish	EC_{50}, 96 hours: 15 mg/l, Oncorhynchus mykiss (Rainbow trout) LC_{50}, 96 hours: 772.14 mg/l, Cyprinodon variegatus (Sheepshead minnow)
Acute toxicity - aquatic invertebrates	EC_{50}, 48 hours: 80 mg/l, Daphnia magna
Acute toxicity - aquatic plants	IC_{50}, 72 hours: 141.72 mg/l, Algae EC_{50}, 72 hours: 15 mg/l, Pseudokirchneriella subcapitata

12.2. Persistence and degradability

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

Ecological information on ingredients.

1,4-DIAZABICYCLOOCTANE

Stability (hydrolysis)	pH7 - 100: 5 days @ 50°C

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Persistence and degradability	The product is not biodegradable.

12.3. Bioaccumulative potential

Bioaccumulative potential No data available on bioaccumulation.

Partition coefficient Not available.

12.4. Mobility in soil

Mobility No data available.

Ecological information on ingredients.

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Mobility	No data available.
Adsorption/desorption coefficient	Not 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.

Ecological information on ingredients.

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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.

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).
Control of Substances Hazardous to Health Regulations 2002 (as amended).

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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. 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

Revision date	09/07/2020
Revision	7
Supersedes date	20/08/2018
Hazard statements in full	H228 Flammable solid. H302 Harmful if swallowed. H314 Causes severe skin burns and eye damage. H315 Causes skin irritation. H318 Causes serious eye damage. H319 Causes serious eye irritation. H412 Harmful to aquatic life with long lasting effects.