

SAFETY DATA SHEET Permabond ET530B

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

1.1. Product identifier

Product name Permabond ET530B

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

Identified usesTwo-component, epoxy-based 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

National emergency telephone CHEMTREC Ireland: +(353)-19014670

number 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 Corr. 1A - H314 Eye Dam. 1 - H318 Resp. Sens. 1 - H334 Skin Sens. 1 - H317 Repr. 2 -

H361fd STOT RE 2 - H373

Environmental hazards Aquatic Chronic 3 - H412

2.2. Label elements

Hazard pictograms





Signal word Danger

Hazard statements H314 Causes severe skin burns and eye damage.

H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

H317 May cause an allergic skin reaction.

H361fd Suspected of damaging fertility. Suspected of damaging the unborn child. H373 May cause damage to organs through prolonged or repeated exposure.

H412 Harmful to aquatic life with long lasting effects.

Precautionary statements P273 Avoid release to the environment.

P280 Wear protective gloves/ protective clothing/ eye protection/ face protection. P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

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 4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane,

reaction products with 3-aminomethyl-3,5,5-trimethylcyclohexylamine, 2,2,4(OR 2,4,4)-TRIMETHYLHEXANE-1,6-DIAMINE, PIPERAZINE, 2-PIPERAZIN-1-YLETHYLAMINE

Supplementary precautionary

statements

P261 Avoid breathing vapour/ spray.

P264 Wash contaminated skin thoroughly after handling.

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.

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.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, reaction products with 3-

aminomethyl-3,5,5-trimethylcyclohexylamine

CAS number: 38294-64-3 EC number: 500-101-4 REACH registration number: 01-

2119965165-33-XXXX

30-60%

Classification

Skin Corr. 1B - H314 Eye Dam. 1 - H318 Skin Sens. 1 - H317 Aquatic Chronic 3 - H412

BENZYL ALCOHOL

CAS number: 100-51-6

EC number: 202-859-9

REACH registration number: 01-2119492630-38-XXXX

Classification

Acute Tox. 4 - H302

Acute Tox. 4 - H332

Eye Irrit. 2 - H319

2,2,4(OR 2,4,4)-TRIMETHYLHEXANE-1,6-DIAMINE

10-30%

CAS number: 25513-64-8 EC number: 247-063-2 REACH registration number: 01-

2119560598-25-XXXX

Classification

Acute Tox. 4 - H302 Skin Corr. 1A - H314 Eye Dam. 1 - H318 Skin Sens. 1A - H317

PIPERAZINE 1-5%

CAS number: 110-85-0 EC number: 203-808-3

Classification

Skin Corr. 1B - H314 Eye Dam. 1 - H318 Resp. Sens. 1B - H334 Skin Sens. 1B - H317 Repr. 2 - H361fd

2-PIPERAZIN-1-YLETHYLAMINE 1-5%

CAS number: 140-31-8 EC number: 205-411-0 REACH registration number: 01-

2119471486-30-XXXX

Classification

Acute Tox. 4 - H302 Acute Tox. 3 - H311 Skin Corr. 1B - H314 Eye Dam. 1 - H318 Skin Sens. 1 - H317 Repr. 2 - H361

STOT RE 1 - H372 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.

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Ingestion Never give anything by mouth to an unconscious person. Rinse mouth thoroughly with water.

Give plenty of water to drink. DO NOT induce vomiting. Get medical attention immediately.

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. Show this Safety Data

Sheet to the medical personnel.

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

Inhalation Irritation of nose, throat and airway.

Ingestion May cause chemical burns in mouth and throat.

Skin contact Chemical burns. 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. 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 eat, drink or smoke when using this product.

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7.2. Conditions for safe storage, including any incompatibilities

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

Storage class Corrosive storage.

7.3. Specific end use(s)

Specific end use(s) Adhesive. Sealant.

SECTION 8: Exposure controls/Personal protection

8.1. Control parameters

Occupational exposure limits

PIPERAZINE

Long-term exposure limit (8-hour TWA): WEL 0.1 mg/m3(Sen) Short-term exposure limit (15-minute): WEL 0.3 mg/m3(Sen)

WEL = Workplace Exposure Limit.

4,4'-lsopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, reaction products with 3-aminomethyl-3,5,5-trimethylcyclohexylamine (CAS: 38294-64-3)

DNEL Workers - Inhalation; Long term systemic effects: 0.493 mg/m³

Workers - Dermal; Long term systemic effects: 0.14 mg/kg/day

PNEC Fresh water; 0.011 mg/l

marine water; 0.001 mg/l

STP; 10 mg/l

Sediment (Freshwater); 4320 mg/kg, dw Sediment (Marinewater); 432 mg/kg, dw

Soil; 864 mg/kg, dw

BENZYL ALCOHOL (CAS: 100-51-6)

DNEL Workers - Inhalation; Long term systemic effects: 22 mg/m³

Workers - Inhalation; Short term systemic effects: 110 mg/m³ Workers - Dermal; Long term systemic effects: 8 mg/kg/day

PNEC Fresh water; 1 mg/l

marine water; 0.1 mg/l

STP; 39 mg/l

Sediment (Freshwater); 5.27 mg/kg, dw Sediment (Marinewater); 0.527 mg/kg, dw

Soil; 0.456 mg/kg, dw

2,2,4(OR 2,4,4)-TRIMETHYLHEXANE-1,6-DIAMINE (CAS: 25513-64-8)

PNEC Fresh water; 0.102 mg/l

marine water; 0.01 mg/l

STP; 72 mg/l

Sediment (Freshwater); 0.622 mg/kg Sediment (Marinewater); 0.062 mg/kg

Soil; 10 mg/kg

2-PIPERAZIN-1-YLETHYLAMINE (CAS: 140-31-8)

DNEL Workers - Inhalation; Long term systemic effects: 10.6 mg/m³

> Workers - Inhalation; Short term systemic effects: 10.6 mg/m3 Workers - Inhalation; Long term local effects: 15 µg/m3 Workers - Inhalation; Short term local effects: 80 mg/m³

Workers - Dermal; Long term systemic effects: 3.33 mg/kg/day

PNEC Fresh water; 0.058 mg/l

marine water; 0.006 mg/l

STP; 250 mg/l

Sediment (Freshwater); 215 mg/kg Sediment (Marinewater); 21.5 mg/kg Intermittent release; 0.58 mg/l

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

Nitrile rubber or Viton™ gloves are recommended. Cotton or other absorbent gloves should Hand protection

> 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 at the end of each work shift and before eating, smoking and using the toilet. Promptly

remove any clothing that becomes contaminated. Use appropriate skin cream to prevent drying of skin. When using do not eat, drink or smoke. Use of good industrial hygiene

practices is required.

Respiratory protection No specific recommendations. Respiratory protection may be required if excessive airborne

contamination occurs.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Liquid. **Appearance**

Colour Colourless.

Odour Amine.

Odour threshold Not determined.

pН Not determined.

Melting point Not determined.

Not determined. Initial boiling point and range

>100°C Flash point

Evaporation rate Not available.

Vapour pressure Not determined.

Vapour density Not determined.

Relative density 1.0

Solubility(ies) Slightly soluble in water. Soluble in the following materials: Organic solvents.

Auto-ignition temperature Not determined.

Decomposition Temperature Not determined.

Viscosity ≈250 mPa s @ 23°C

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

10.4. Conditions to avoid

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

10.5. Incompatible materials

Materials to avoid Avoid contact with the following materials: Acids. Oxidising agents.

10.6. Hazardous decomposition products

Hazardous decomposition

products

Thermal decomposition could produce carbon monoxide, carbon dioxide, and unidentified

organic compounds.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Toxicological effects The toxicological properties of this product have not been fully evaluated. Avoid direct contact

with skin or eyes. Do not ingest or inhale.

Other health effects Suspected of damaging fertility.

Skin sensitisation

Skin sensitisation May cause sensitisation by skin contact.

Aspiration hazard

Aspiration hazard None under normal conditions.

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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 Causes burns. May cause chemical burns in mouth and throat. May cause stomach pain or

vomiting.

Skin contact This product is strongly irritating. Prolonged contact may cause burns.

Eye contact Causes serious eye damage.

Toxicological information on ingredients.

4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, reaction products with 3-aminomethyl-3,5,5-trimethylcyclohexylamine

Acute toxicity - oral

Notes (oral LD₅₀) No information available.

Acute toxicity - dermal

Notes (dermal LD₅₀) No information available.

Acute toxicity - inhalation

Notes (inhalation LC₅₀) No information available.

Skin corrosion/irritation

Human skin model test Corrosive.

Serious eye damage/irritation

Serious eye Scientifically unjustified.

damage/irritation

Skin sensitisation

Skin sensitisation May cause an allergic skin reaction.

Germ cell mutagenicity

Genotoxicity - in vitroGene mutation: Negative.

Carcinogenicity

Carcinogenicity No information available.

Reproductive toxicity

Reproductive toxicity -

Developmental toxicity: - NOAEL: 100 mg/kg/day, Oral, Rat

development

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.

BENZYL ALCOHOL

Acute toxicity - oral

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Acute toxicity oral (LD50

mg/kg)

1,620.0

Species Rat

Acute toxicity - dermal

Acute toxicity dermal (LD₅₀ 2,000.1

mg/kg)

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Species Rabbit

Acute toxicity - inhalation

Acute toxicity inhalation 4.178

(LC50 dust/mist mg/l)

Species Rat

Skin corrosion/irritation

Animal data Method: OECD 404, Rabbit Not irritating.

Serious eye damage/irritation

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

damage/irritation

Skin sensitisation

Skin sensitisation Local Lymph Node Assay (LLNA) - Mouse: Not sensitising.

Germ cell mutagenicity

Genotoxicity - in vivo Chromosome aberration: Negative.

Carcinogenicity

Carcinogenicity No information available.

Reproductive toxicity

Reproductive toxicity -

development

Developmental toxicity: - NOAEL: 510 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.

2,2,4(OR 2,4,4)-TRIMETHYLHEXANE-1,6-DIAMINE

Acute toxicity - oral

Acute toxicity oral (LD50

mg/kg)

910.0

Species Rat

Acute toxicity - dermal

Notes (dermal LD₅₀) No information available.

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Acute toxicity - inhalation

Notes (inhalation LC₅₀) No information available.

Skin corrosion/irritation

Animal data Corrosive.

Serious eye damage/irritation

Serious eye Method: OECD 405, Rabbit Corrosive

damage/irritation

Skin sensitisation

Skin sensitisation Guinea pig maximization test (GPMT) - Guinea pig: Sensitising.

Germ cell mutagenicity

Genotoxicity - in vitro Chromosome aberration: Negative.

Genotoxicity - in vivoChromosome aberration: Negative.

Carcinogenicity

Carcinogenicity No information available.

Reproductive toxicity

Reproductive toxicity -

Two-generation study - NOAEL 10 mg/kg/day, Oral, Rat F1

fertility

Reproductive toxicity -

development

Developmental toxicity: - NOAEL: 120 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.

SECTION 12: Ecological information

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

12.1. Toxicity

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

Ecological information on ingredients.

4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, reaction products with 3-aminomethyl-3,5,5-trimethylcyclohexylamine

Acute aquatic toxicity

Acute toxicity - fish LL₅₀, 96 hours: 70.7 mg/l, Oncorhynchus mykiss (Rainbow trout)

Acute toxicity - aquatic

invertebrates

NOELR, 48 hours: 4.3 mg/l, Daphnia magna

Acute toxicity - aquatic

plants

NOELR, 72 hours: 3.1 mg/l, Pseudokirchneriella subcapitata

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Acute toxicity - microorganisms

EC₅₀, 3 hours: >= 1000 mg/l, Activated sludge

BENZYL ALCOHOL

Acute aquatic toxicity

Acute toxicity - fish LC₅₀, 96 hours: 460 mg/l, Pimephales promelas (Fat-head Minnow)

LC₅₀, 48 hours: 646 mg/l, Leuciscus idus (Golden orfe)

Acute toxicity - aquatic

invertebrates

EC₅₀, 24 hours: 400 mg/l, Daphnia magna

Acute toxicity - aquatic

plants

NOEC, 72 hours: 310 mg/l, Pseudokirchneriella subcapitata

2,2,4(OR 2,4,4)-TRIMETHYLHEXANE-1,6-DIAMINE

Acute aquatic toxicity

Acute toxicity - fish LC₅₀, 48 hours: 174 mg/l, Leuciscus idus (Golden orfe)

Acute toxicity - aquatic

invertebrates

EC₅o, 24 hours: 31.5 mg/l, Daphnia magna

Acute toxicity - aquatic

plants

EC₅o, 72 hours: 29.5 mg/l, Pseudokirchneriella subcapitata

Acute toxicity - microorganisms

EC₅o, 16 hours: 89 mg/l, Pseudomonas putida

12.2. Persistence and degradability

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

12.3. Bioaccumulative potential

Bioaccumulative potential No data available on bioaccumulation.

Ecological information on ingredients.

4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, reaction products with 3-aminomethyl-3,5,5-trimethylcyclohexylamine

Bioaccumulative potential BCF: 5.13,

12.4. Mobility in soil

Mobility No data available.

Ecological information on ingredients.

4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, reaction products with 3-aminomethyl-3,5,5-trimethylcyclohexylamine

Adsorption/desorption

coefficient

Water - log Koc: > 5.6 @ 30°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

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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 methodsDo 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

14.1. UN number

2735

14.2. UN proper shipping name

POLYAMINES, LIQUID, CORROSIVE, N.O.S. (contains 4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, reaction products with 3-aminomethyl-3,5,5-trimethylcyclohexylamine)

14.3. Transport hazard class(es)

8

Transport labels



14.4. Packing group

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14.5. Environmental hazards

Environmentally hazardous substance/marine pollutant

No

14.6. Special precautions for user

EmS F-A, S-B

Tunnel restriction code (E)

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).

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 15/07/2021

Revision 5

Supersedes date 19/10/2018

Hazard statements in full H302 Harmful if swallowed.

H311 Toxic in contact with skin.

H314 Causes severe skin burns and eye damage.

H317 May cause an allergic skin reaction.

H318 Causes serious eye damage.

H319 Causes serious eye irritation.

H332 Harmful if inhaled.

H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

H361 Suspected of damaging fertility or the unborn child.

H361fd Suspected of damaging fertility. Suspected of damaging the unborn child.

H372 Causes damage to organs through prolonged or repeated exposure.

H373 May cause damage to organs through prolonged or repeated exposure.

H412 Harmful to aquatic life with long lasting effects.

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty, guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.