

Permabond®

Engineering Adhesives

SAFETY DATA SHEET

Permabond 2050

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

1.1. Product identifier

Product name Permabond 2050

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

Identified uses Adhesive.

1.3. Details of the supplier of the safety data sheet

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

1.4. Emergency telephone number

Emergency telephone UK +44 (0)1962 711 661 USA 0800 640 7599 Asia +86 (0)21 5773 4913

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification

Physical hazards Not Classified

Health hazards Skin Irrit. 2 - H315 Eye Irrit. 2 - H319 STOT SE 3 - H335

Environmental hazards Not Classified

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

2.2. Label elements

Pictogram



Signal word Warning

Hazard statements H315 Causes skin irritation.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.

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Precautionary statements	P280 Wear protective gloves, eye and face protection. P302+P352a IF ON SKIN: Wash with plenty of soap and water 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.
Supplemental label information	EUH202 Cyanoacrylate. Danger. Bonds skin and eyes in seconds. Keep out of the reach of children.
Contains	ETHYL 2-CYANOACRYLATE
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. P332+P313 If skin irritation occurs: Get medical advice/attention. P337+P313 If eye irritation persists: Get medical advice/attention. P362+P364 Take off contaminated clothing and wash it before reuse. P403+P233 Store in a well-ventilated place. Keep container tightly closed. P501 Dispose of contents/container in accordance with existing Community, National and local regulations.

2.3. Other hazards

None under normal conditions.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

ETHYL 2-CYANOACRYLATE	60-100%
CAS number: 7085-85-0	EC number: 230-391-5
Classification	Classification (67/548/EEC or 1999/45/EC)
Skin Irrit. 2 - H315	Xi;R36/37/38
Eye Irrit. 2 - H319	
STOT SE 3 - H335	

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	On contact, immediate bonding of mouth could occur. Do not induce vomiting. Get medical attention.
Skin contact	On contact, immediate bonding of the skin will occur. No attempt should be made to remove material from skin or to remove contaminated clothing, as the bonded skin can be easily torn. Wash skin thoroughly with soap and water.
Eye contact	Rinse immediately with plenty of water. Continue to rinse for at least 10 minutes. If adhesive bonding occurs, do not force eyelids apart. Apply a pad soaked in warm water and allow the eyelids to separate. Get medical attention. Cured adhesive will not bond well to surface of eye, but corneal damage from abrasion may result.

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

Inhalation	Irritation of nose, throat and airway.
Ingestion	On contact, immediate bonding of mouth could occur.

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Skin contact Prolonged skin contact may cause redness and irritation.

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 SKIN BONDING. Prise the skin apart slowly working from the edge of the bonded area. This can be eased by using warm soapy water. EYE BONDING. DO NOT force eyelids apart. Apply a pad soaked in warm water and allow the eye to separate itself.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media Extinguish with foam, carbon dioxide, dry powder or water fog.

5.2. Special hazards arising from the substance or mixture

Specific hazards Cloths used to wipe up spills may cause rapid polymerization that could generate sufficient heat to ignite the cloth.

Hazardous combustion products Decomposes upon heating to release toxic fumes of nitrogen oxides, carbon monoxide, carbon dioxide, and hydrogen cyanide.

5.3. Advice for firefighters

Protective actions during firefighting Avoid breathing fire gases or vapours.

Special protective equipment for firefighters Use air-supplied respirator, gloves and protective goggles.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions For personal protection, see Section 8. Provide adequate ventilation.

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 Small spills: wipe up with cloth. Immediately soak cloth with water to polymerize the adhesive. Caution! Cloth containing adhesive may undergo autoignition if not soaked with water Large spills: flood area with water. When cured, remove film with a scraper.

6.4. Reference to other sections

Reference to other sections Collect and dispose of spillage as indicated in Section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Usage precautions Ensure adequate ventilation of the working area. Avoid contact with skin and eyes. Always replace cap after use.

7.2. Conditions for safe storage, including any incompatibilities

Storage precautions Store in tightly-closed, original container in a dry and cool place. Keep containers upright.

7.3. Specific end use(s)

Specific end use(s) Adhesive.

SECTION 8: Exposure Controls/personal protection

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8.1. Control parameters

Occupational exposure limits

ETHYL 2-CYANOACRYLATE

Short-term exposure limit (15-minute): WEL 0.3 ppm 1.5 mg/m³

WEL = Workplace Exposure Limit

8.2. Exposure controls

Protective equipment



Appropriate engineering controls

Normal (mechanical) room ventilation should be adequate for small volumes. For higher volume activities, or if needed for worker comfort, local mechanical exhaust should be provided.

Eye/face protection

Use approved safety goggles or face shield. Personal eye protection should conform to EN 166

Hand protection

Nitrile rubber or Viton™ gloves are recommended. Cotton or other absorbent gloves should not be worn. Gloves should conform to EN 374. The most suitable glove should be chosen in consultation with the glove supplier/manufacture, who can provide information about the breakthrough time of the glove material.

Other skin and body protection

Uniforms, coveralls, or a lab coat should be worn

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. Wash promptly if skin becomes contaminated. Use of good industrial hygiene practices is required.

Respiratory protection

No specific recommendations. Respiratory protection must be used if the airborne contamination exceeds the recommended occupational exposure limit.

SECTION 9: Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Appearance	Liquid.
Colour	Colourless.
Odour	Pungent.
pH	Not applicable.
Melting point	Not applicable.
Initial boiling point and range	>100°C
Flash point	83°C
Evaporation rate	Not available.
Vapour pressure	~0.6 mbar @ 25°C
Vapour density	Not applicable.
Relative density	1.1
Bulk density	Not applicable.

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Solubility(ies)	Hardens in contact with water. Insoluble in water. Miscible with the following materials: Organic solvents.
Partition coefficient	Not applicable.
Auto-ignition temperature	Not available.
Decomposition Temperature	Not available.
Viscosity	≈1500 mPa s @ 23°C
Oxidising properties	Not applicable.

9.2. Other information

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity The product reacts with water and will generate heat.

10.2. Chemical stability

Stability Stable at normal ambient temperatures and when used as recommended.

10.3. Possibility of hazardous reactions

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

10.4. Conditions to avoid

Conditions to avoid Do not add water directly to the product. It may cause a violent reaction.

10.5. Incompatible materials

Materials to avoid Water. Amines. Alkalis. Alcohols.

10.6. Hazardous decomposition products

Hazardous decomposition products Heating may generate the following products: Toxic gases/vapours/fumes of: Carbon dioxide (CO₂). Carbon monoxide (CO). Nitrous gases (NO_x). Hydrogen cyanide (HCN).

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Toxicological effects Under EU legislation the cyanoacrylates do not require classification as sensitisers and the rapid polymerisation caused on contact with moisture makes this unlikely. However the American Conference of Governmental Industrial Hygienists (ACGIH) has reported some limited evidence of skin and respiratory sensitisation. May cause allergic reactions in susceptible people.

Inhalation Irritating to respiratory system.

Ingestion On contact, immediate bonding of mouth could occur.

Skin contact Irritating to skin. On contact, immediate bonding of the skin will occur.

Eye contact Irritating to eyes. On contact, will bond eyelids together. Vapours are lachrymatory.

Toxicological information on ingredients.

ETHYL 2-CYANOACRYLATE

Acute toxicity - oral

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

Species Rat

ATE oral (mg/kg) 5,000.0

Acute toxicity - dermal

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

Species Rabbit

ATE dermal (mg/kg) 2,000.1

Skin corrosion/irritation

Animal data Dose: 0.5g, 24 hours, Rabbit Slightly irritating.

Serious eye damage/irritation

Serious eye damage/irritation Not irritating.

Germ cell mutagenicity

Genotoxicity - in vitro Gene mutation: Negative. Chromosome aberration: Negative. Bacterial reverse mutation test: Negative.

SECTION 12: Ecological Information

Ecotoxicity Not regarded as dangerous for the environment.

12.1. Toxicity

Toxicity No information available.

Acute toxicity - aquatic invertebrates Not available.

Acute toxicity - aquatic plants Not available.

Acute toxicity - terrestrial Not available.

12.2. Persistence and degradability

Persistence and degradability No data available.

Biological oxygen demand Not known.

Chemical oxygen demand Not known.

12.3. Bioaccumulative potential

Bioaccumulative potential No data available on bioaccumulation.

Partition coefficient Not applicable.

Ecological information on ingredients.

ETHYL 2-CYANOACRYLATE

Partition coefficient log Kow: 0.776

12.4. Mobility in soil

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Mobility The product hardens to a solid, immobile substance.

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

Road transport notes Not classified.

Rail transport notes Not classified.

Sea transport notes Not classified.

Air transport notes Applies only to inner containers > 500ml.

14.1. UN number

UN No. (ADR/RID) Not applicable

UN No. (IMDG) Not applicable

UN No. (ICAO) 3334

UN No. (ADN) Not applicable

14.2. UN proper shipping name

Proper shipping name (ADR/RID) Not applicable

Proper shipping name (IMDG) Not applicable

Proper shipping name (ICAO) AVIATION REGULATED LIQUID, N.O.S. (contains ethyl cyanoacrylate)

Proper shipping name (ADN) Not applicable

14.3. Transport hazard class(es)

ICAO class/division 9

Transport labels



14.4. Packing group

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ICAO packing group III

14.5. Environmental hazards

Environmentally hazardous substance/marine pollutant

No.

14.6. Special precautions for user

None under normal conditions.

14.7. Transport in bulk according to Annex II of MARPOL73/78 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

Health and Safety at Work etc. Act 1974 (as amended).
The Control of Substances Hazardous to Health Regulations 2002 (SI 2002 No. 2677) (as amended).
Rivers (Prevention of Pollution) Act 1961.
Control of Pollution (Special Waste) Regulations 1980 (as amended).
Control of Pollution Act 1974.
The Chemicals (Hazard Information and Packaging for Supply) Regulations 2009 (SI 2009 No. 716).
Control of Substances Hazardous to Health Regulations 2002 (as amended).

EU legislation

Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures (as amended).
Commission Regulation (EU) No 453/2010 of 20 May 2010 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).

Guidance

Workplace Exposure Limits EH40.
Introduction to Local Exhaust Ventilation HS(G)37.
CHIP for everyone HSG228.
Approved Classification and Labelling Guide (Sixth edition) L131.
Safety Data Sheets for Substances and Preparations.

Water hazard classification WGK 0

15.2. Chemical safety assessment

No chemical safety assessment has been carried out.

SECTION 16: Other information

Revision date 14/09/2015

Revision 4

Supersedes date 23/04/2015

Risk phrases in full R36/37/38 Irritating to eyes, respiratory system and skin.

Hazard statements in full H315 Causes skin irritation.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.

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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.