SAFETY DATA SHEET
Permabond 105

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

1.1. Product identifier

Product name Permabond 105

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 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 STOT SE 3 - H335

Environmental hazards Not Classified

2.2. Label elements

Hazard pictograms

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 skin thoroughly after handling. P271 Use only outdoors or in a well-ventilated area. P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing. P333+P313 If skin irritation or rash occurs: Get medical advice/ attention. P337+P313 If eye irritation persists: Get medical advice/ attention. P362+P364 Take off contaminated clothing and wash it before reuse. 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. This substance is not classified as PBT or vPvB according to current EU criteria.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

ethyl 2-cyanoacrylate		**60-100%**
CAS number: 7085-85-0	EC number: 230-391-5	REACH registration number: 01-2119527766-29-XXXX
Classification Skin Irrit. 2 - H315 Eye Irrit. 2 - H319 STOT SE 3 - H335		

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	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.

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Ingestion On contact, immediate bonding of mouth could occur.

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.

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SECTION 8: Exposure controls/Personal protection

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.

ethyl 2-cyanoacrylate (CAS: 7085-85-0)

DNEL	Workers - Inhalation; Long term systemic effects: 9.25 mg/m³ Workers - Inhalation; Long term local effects: 9.25 mg/m³
PNEC	Technically not feasible.

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	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	Uniforms, coveralls, or a lab coat should be worn
Hygiene measures	Wash 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	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	Liquid.
Colour	Colourless.

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Odour	Pungent.
Odour threshold	Not available.
pH	Not applicable.
Melting point	Not applicable.
Initial boiling point and range	>100°C
Flash point	83°C
Evaporation rate	Not available.
Upper/lower flammability or explosive limits	Not applicable.
Vapour pressure	~0.6 mbar @ 25°C
Vapour density	Not applicable.
Relative density	1.1
Bulk density	Not applicable.
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	≈40 mPa s @ 23°C
Explosive properties	Not determined.
Oxidising properties	Not applicable.

9.2. Other information

Volatile organic compound	This product contains a maximum VOC content of 1 %.

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

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Hazardous decomposition products Heating may generate the following products: Toxic gases/vapours/fumes of: Carbon dioxide (CO_2). Carbon monoxide (CO). Nitrous gases (NOx). Hydrogen cyanide (HCN).

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.

Other health 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 - inhalation

Notes (inhalation LC_{50}) Not available.

Skin corrosion/irritation

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

Serious eye damage/irritation

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

Skin sensitisation

Skin sensitisation - Guinea pig: Not sensitising.

Germ cell mutagenicity

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

Carcinogenicity

Carcinogenicity No evidence of carcinogenicity in animal studies.

Reproductive toxicity

Reproductive toxicity - fertility Technically not feasible.

Reproductive toxicity - development Technically not feasible.

Specific target organ toxicity - single exposure

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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 Not regarded as dangerous for 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.

Acute aquatic toxicity

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

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

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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

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 MARPOL and the IBC Code

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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) 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. 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	22/07/2020
Revision	7
Supersedes date	05/07/2018
Hazard statements in full	H315 Causes skin irritation. H319 Causes serious eye irritation. H335 May cause respiratory irritation.