

Features & Benefits

- Ultra-low viscosity
- Suitable for bonding pre-assembled parts
- Ideal for close-fitting plastic components
- Withstands EtO sterilisation

ISO10993 Cytotoxicity Approval

Description

Permabond[®] cyanoacrylates are single component adhesives which polymerise rapidly when pressed into a thin film between components. Strong bonds are developed extremely quickly, making Permabond[®] 4C10 an ideal choice for high-speed production lines for increased productivity. Permabond[®] 4C10 is suitable for a wide range of applications on most of the plastic, rubber and metal materials used in the medical device industry.

Physical Properties of Uncured Adhesive

Chemical composition	Ethyl cyanoacrylate
Appearance	Colourless
Viscosity @ 25°C	30-50 mPa.s (cP)
Specific Gravity	1.05

Typical Curing Properties

Maximum gap fill	0.1 mm 0.004 in
Fixture / handling time*	5-15 seconds (Steel) 5-15 seconds (Nitrile Rubber) 5-10 seconds (Phenolic)
Full strength	24 hours

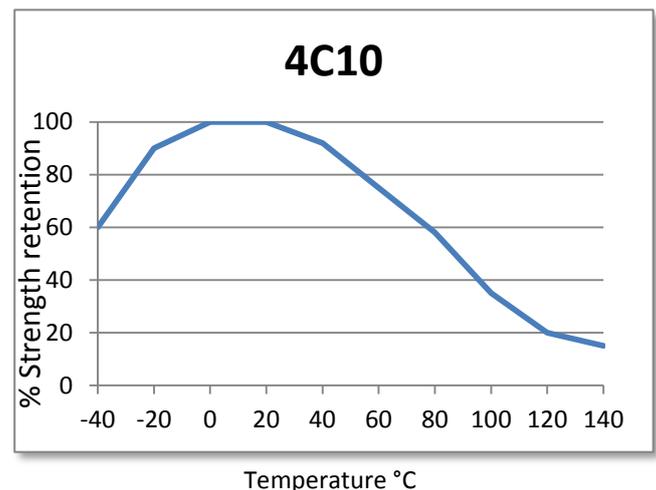
*Handling times can be affected by temperature, humidity and specific surfaces being bonded. Larger gaps or acidic surfaces will also reduce cure speed but this can be overcome by the use of Permabond[®] C Surface Activator (CSA) or Permabond[®] QFS 16.

Typical Performance of Cured Adhesive

Shear strength* ISO4587	Steel	13-15 N/mm ² (1900-2200 psi)
	Aluminium	6-8 N/mm ² (900-1200 psi)
	Polystyrene	>1 N/mm ² (>150 psi) SF
	PVC	>3.6 N/mm ² (>500psi) SF
Hardness (ISO 868)	85 Shore D	
Elongation at break (DIN53504)	<5%	
Water absorption (ISO 62)	<2%	
Glass transition temperature (Tg)	+120°C (240°F)	

*Strength results will vary depending on the level of surface preparation and gap.
SF = Substrate failure

Temperature Resistance



"Hot strength" shear strength tests performed on mild steel. 24hr cure at room temperature and conditioned to pull temperature for 30 minutes before testing.

4C10 can withstand higher temperatures for brief periods (such as for paint baking and wave soldering processes) providing the joint is not unduly stressed. The minimum temperature the cured adhesive can be exposed to is -55°C (-65°F) depending on the materials being bonded.

The information given and the recommendations made herein are based on our research and are believed to be accurate but no guarantee of their accuracy is made. In every case we urge and recommend that purchasers before using any product in full-scale production make their own tests to determine to their own satisfaction whether the product is of acceptable quality and is suitable for their particular purpose under their own operating conditions. THE PRODUCTS DISCLOSED HEREIN ARE SOLD WITHOUT ANY WARRANTY AS TO MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED.

No representative of ours has any authority to waive or change the foregoing provisions but, subject to such provisions, our engineers are available to assist purchasers in adapting our products to their needs and to the circumstances prevailing in their business. Nothing contained herein shall be construed to imply the non-existence of any relevant patents or to constitute a permission, inducement or recommendation to practice any invention covered by any patent, without authority from the owner of this patent. We also expect purchasers to use our products in accordance with the guiding principles of the Chemical Manufacturers Association's Responsible Care[®] program.

Additional Information

This product is not recommended for use in contact with strong oxidizing materials and polar solvents although will withstand a solvent wash without any bond strength deterioration. Users are reminded that all materials, whether innocuous or not, should be handled in accordance with the principles of good industrial hygiene. Full information can be obtained from the Material Safety Data Sheet.

Surface Preparation

Surfaces should be clean, dry and grease-free before applying the adhesive. Use a suitable solvent (such as acetone or isopropanol) for the degreasing of surfaces. Some metals such as aluminium, copper and its alloys will benefit from light abrasion with emery cloth (or similar), to remove the oxide layer.

Directions for Use

- 1) Apply the adhesive sparingly to one surface (usually 1 drop is sufficient).
- 2) Bring the components together quickly and correctly aligned.
- 3) Apply sufficient pressure to ensure the adhesive spreads into a thin film.
- 4) Do not disturb or re-align until curing is achieved, normally in a few seconds.
- 5) Any surplus adhesive can be removed with a suitable solvent.

NB:

For difficult or porous surfaces using a Permabond® activator is recommended. If bonding polypropylene, polyethylene, PTFE or silicone, prime first with Permabond® Polyolefin Primer.

Storage & Handling

Storage Temperature	2 to 7°C (35 to 45°F)
Shelf Life Stored in original unopened containers	12 months

Allow adhesive to reach room temperature before opening bottle to prevent condensation inside the bottle which can reduce shelf life.

Contact Permabond:

Europe: Tel. +44 (0)1962 711661
UK Helpline: 0800 975 9800
Deutschland: 0800 10 13 177
France: 0805 11 13 88
info.europe@permabond.com

US: Tel. +1 732-868-1372
Helpline: 800-640-7599
info.americas@permabond.com
Asia: Tel. +86 21 5773 4913
info.asia@permabond.com

www.permabond.com

The information given and the recommendations made herein are based on our research and are believed to be accurate but no guarantee of their accuracy is made. In every case we urge and recommend that purchasers before using any product in full-scale production make their own tests to determine to their own satisfaction whether the product is of acceptable quality and is suitable for their particular purpose under their own operating conditions. THE PRODUCTS DISCLOSED HEREIN ARE SOLD WITHOUT ANY WARRANTY AS TO MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED.

No representative of ours has any authority to waive or change the foregoing provisions but, subject to such provisions, our engineers are available to assist purchasers in adapting our products to their needs and to the circumstances prevailing in their business. Nothing contained herein shall be construed to imply the non-existence of any relevant patents or to constitute a permission, inducement or recommendation to practice any invention covered by any patent, without authority from the owner of this patent. We also expect purchasers to use our products in accordance with the guiding principles of the Chemical Manufacturers Association's Responsible Care® program.