

Permabond Cyanoacrylates

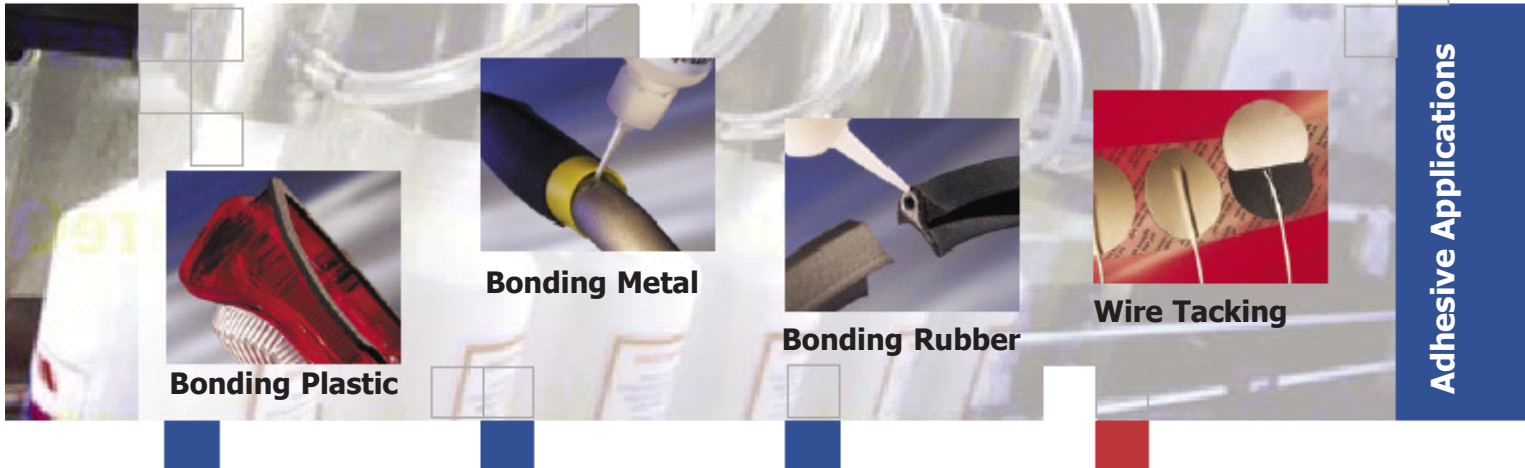
Permabond cyanoacrylate adhesives bring a wide variety of performance benefits to the production environment. These benefits include joining dissimilar and hard-to-bond materials, quick curing with very strong adhesion and a wide range of viscosities. Permabond one-part cyanoacrylates are a versatile solution for even the most demanding manufacturing and assembly applications.

How Do Cyanoacrylate Adhesives Work?

Permabond cyanoacrylate adhesives are one-part adhesives that cure by reacting with minute traces of moisture on the surface of the material being bonded. Permabond cyanoacrylates cure in seconds at ambient temperatures and have been formulated to bond flexible or rigid surfaces made from a wide range of plastics, rubbers or metals.

Why Use Cyanoacrylates?

- ▶ One-part adhesive chemistry speeds preparation and application.
- ▶ Join dissimilar materials, such as rubber to metal, with no compromise in bond strength.
- ▶ Cures in seconds at room temperature; eliminates need for costly jigs or ovens; accelerates assembly rates.
- ▶ Gap fill capability up to 0.5mm.
- ▶ Solvent free; non flammable.
- ▶ Superior bond strength; often exceeds that of substrate material.



Permabond cyanoacrylates are available in a range of viscosities and material adhesion capabilities. These adhesives are formulated to bond a variety of porous and non-porous surfaces and to rigid or flexible materials.

Permabond low and medium viscosity cyanoacrylate formulations provide:

- ▶ Superior bonding to plastic, wood and rubber materials.
- ▶ Excellent bond strength when joining metal to plastic, or rubber to metal.
- ▶ Inherent corrosion resistance; protects part assembly from degradation.

Permabond high viscosity cyanoacrylate adhesives provide:

- ▶ Formulations for use in vertical applications or on porous surfaces.
- ▶ Gap filling ability up to 0.5 mm.
- ▶ Fast, 30-second cure time; speeds production rates.
- ▶ High-strength adhesion, up to 25 MPa; shear strength, exceeds that of many substrate materials.

Permabond wire tacking cyanoacrylate adhesives utilize a proprietary activator developed specifically for wire tacking applications. Wires are tacked with greater adhesion but without a damaging rigid seal. When the wire tack is sprayed with the activator, the exposed surface fully cures. The adhesive surface not exposed to the activator works to tack the wire in place within a secure yet flexible bond.

Permabond wire tacking cyanoacrylate adhesives provide:

- ▶ Application-specific curing technology; improves assembly in-use performance.
- ▶ Bonding of dissimilar surfaces; simplifies assembly preparation and production.
- ▶ Inherent corrosion resistance; protects part assembly from degradation.
- ▶ Formulations for vertical applications; eliminates dripping and running.
- ▶ Gap filling ability up to 0.5mm.
- ▶ Fast, 30-second cure time; speeds production rates.
- ▶ High-strength adhesion; up to 25MPa shear strength, exceeds that of many substrate materials.

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Engineering Adhesives

Permabond Cyanoacrylate Adhesives Comparison Chart

This table represents a selection of the complete range of Permabond cyanoacrylate adhesives. For more detailed technical information and product Material Safety Data Sheets, visit www.permabondllc.com. To discuss your specific application requirements, call the Permabond Helpline and our technical advisors will recommend the best adhesive for you.

Grade	Primary Application	Viscosity (mPa.s)	Maximum Gap Fill (mm)	Tensile Strength Steel (MPa)	Handling Times (secs)			Service Temperature
					Rubber	Plastic	Metal	(°C)
C1	Low viscosity, penetrating grade	2	0.025	20	7	12	40	-30 to +85
C2	General Purpose	100	0.125	25	10	20	40	-30 to +85
C4	High viscosity, slow cure	2200	0.375	25	15	30	55	-30 to +85
C6	Difficult rubbers (e.g. EPDM)	45	0.100	20	6	12	50	-30 to +85
C737	Toughened - impact and peel resistant. Black.	3000	0.500	25	10	10	30	-40 to +120
C791	Ultra fast cure, low viscosity	40	0.100	20	2	4	7	-30 to +85
C792	Ultra fast cure, general purpose	75	0.125	20	2	4	7	-30 to +85
C910	Metal bonding	100	0.125	30	15	20	40	-30 to +95
C920	High temperature resistance	100	0.125	20	15	15	20	-30 to +250*
C2010	Very fast cure, thixotropic	Thixotropic	0.375	20	4	6	15	-30 to +85
C2048	Low odour, low bloom	50	0.100	15	5	30	30	-30 to +70
C2050	Flexible - improved peel strength	1500	0.200	18	5	10	15	-30 to +85

* To achieve maximum temperature resistance, a secondary heat cure is required.

When using the cyanoacrylate adhesives to bond to acidic or porous surfaces, the use of Permabond CSA prior to bonding may be beneficial. Post assembly application of the CSA may also assist in the curing of adhesive fillets outside the bond area or in preventing the 'blooming' phenomena sometimes associated with the use of this type of adhesive.

Full strength will generally be achieved within 24 hours at room temperature. The properties quoted here are nominal values: please consult our technical group or refer to the Technical Data Sheet if more detail is required. The shelf life of the cyanoacrylate adhesives varies from grade to grade but can be maximised by storage under refrigerated conditions (~5°C); more specific information can be obtained from the individual Technical Data sheet.

Other Products in the Permabond Range...

Anaerobic adhesives...

Threadlocking	High temperature resistance
Pipe-sealing	Toughened
Retaining	Variety of viscosities and strengths available.

If you require help with an application, please contact the Permabond team for technical advice on surface preparation, joint design, adhesive selection and how to optimise your production process.



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 discussed herein are sold without any warranty, expressed 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 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 recommendations to practice any invention covered by any patent without authority from the owner of the patent.

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