

Features & Benefits

-  Rapid development of high strength
-  Ease of use – no mixing or heat cure
-  Bonds most materials
-  100% reactive, no solvents

Approved to MIL-A-46050C Type V Class 2

Description

PERMABOND 920 is the original allyl cyanoacrylate adhesive. It is a single part, low viscosity liquid that will cure rapidly at room temperature when pressed into a thin film between parts.

PERMABOND 920 will cure to fixture strength in 10 seconds on most surfaces, and rapidly develops high strength with full cure obtained in 24 hours. The adhesive was specifically designed to meet the high temperature resistance required by certain applications. It provides excellent bond strength to steel, aluminum, and most metal surfaces. The cyanoacrylate will also adhere well to a wide variety of other materials including most types of plastic and rubber.

In order to withstand high temperature environments, **PERMABOND 920** was designed with a secondary curing mechanism that is activated at temperatures higher than 150°C (302°F). The procedure to activate this mechanism is as follows:

- 1) Parts are bonded and clamped at room temperature for four hours.
- 2) The clamped parts are then heated at 150°C (302°F) for two hours.
- 3) After the two hours, the bond will be thermally resistant up to 250°C (482°).

Physical Properties of Uncured Adhesive

Chemical composition	Allyl cyanoacrylate
Appearance	Colourless
Viscosity @ 25°C	70-90 mPa.s (cP)
Density	1.05

Typical Curing Properties

Maximum gap fill	0.15 mm 0.006 in
Cure speed*	15-20 seconds (Steel) 10-15 seconds (Buna N Rubber) 10-15 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.

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.**

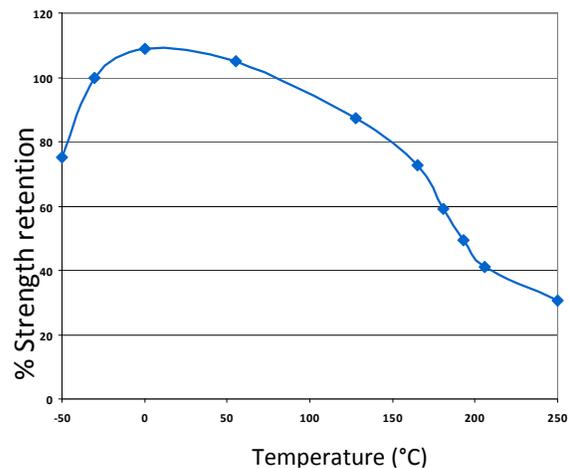
No representative of ours has any authority to waive or change the foregoing provisions but, subject to such provisions, our engineers are available to assist purchasers in adapting our products to their needs and to the circumstances prevailing in their business. Nothing contained herein shall be construed 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.

Typical Performance of Cured Adhesive

Shear strength* ASTM D-1002	Steel	19-23 N/mm ² (2800-3300 psi)
	Aluminium	8-9 N/mm ² (1200-1300 psi)
	Zinc	10 N/mm ² (1450 psi)
	ABS	>6 N/mm ² (900psi) SF
	PVC	>6 N/mm ² (900psi) SF
	PC	>5 N/mm ² (700 psi) SF
	Phenolic	14N/mm ² (2000psi)
Impact Strength (ASTM D-950)	6-14 kJ/m ² (3-7 ft-lb/in²)	
Hardness	85 Shore A	
Coefficient of thermal expansion	90 x 10 ⁻⁶ mm/mm/°C	
Coefficient of thermal conductivity	0.1 W/(m.K)	

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

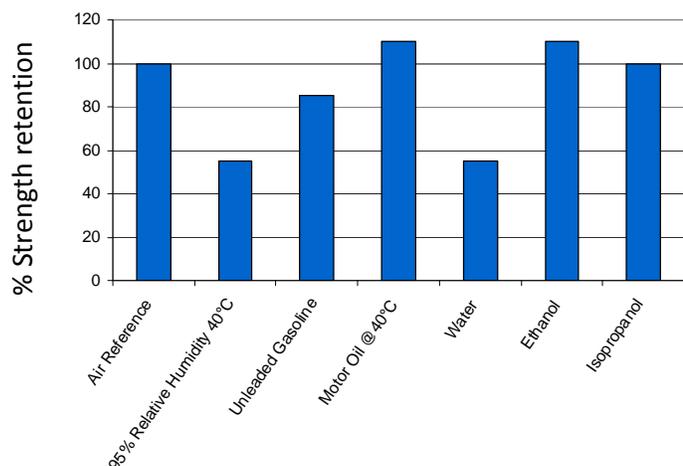
Temperature Resistance



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

920 can withstand 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.

Chemical Resistance



Specimens were immersed for 1000 hours at 22°C (unless otherwise stated).

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.