





Features & Benefits

-  Excellent adhesion to metal surfaces
-  Fast cure
-  Easy to apply and dispense
-  No mixing required

Approved to MIL-A-46050C Type I Class 1 (existing designs) & CID A-A-3097 Type I Class 1 (new designs)

Description

PERMABOND® 910FS is the original 100%-methyl 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® 910FS** will cure to a fixture strength in 5 seconds on most surfaces and strength develops rapidly. The adhesive was designed specifically for the bonding of metal surfaces, and provides excellent bond strength to steel, aluminum and most metal surfaces. The methyl cyanoacrylate will also adhere well to a wide variety of other materials including most plastics and rubbers.

Physical Properties of Uncured Adhesive

Chemical composition	Methyl cyanoacrylate
Appearance	Colourless
Viscosity @ 25°C	2-4 mPa.s (cP)
Specific gravity	1.1

Typical Curing Properties

Maximum gap fill	0.05 mm 0.002 in
Fixture / handling time*	<5 seconds (Steel) (0.3 N/mm ² shear strength is achieved) <10 seconds (Buna N Rubber) <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.

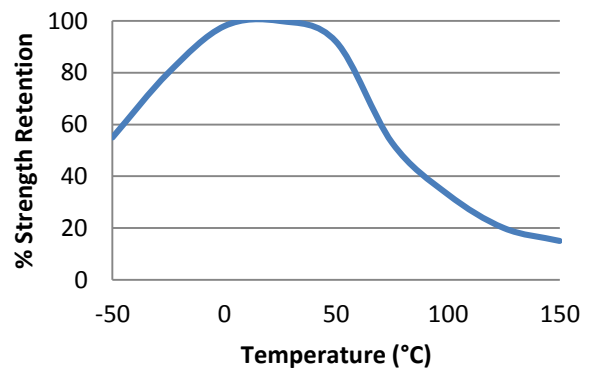
Typical Performance of Cured Adhesive

Shear strength* (ISO4587)	Steel	23-29 N/mm ² (3300-4200psi)
	Aluminium	13-15 N/mm ² (1900-2200psi)
	Brass	21 N/mm ² (3000psi)
	Stainless Steel	21 N/mm ² (3000psi)
	Butyl Rubber	>2 N/mm ² (300psi) SF**
	Nitrile Rubber	>4 N/mm ² (600psi) SF**
	Phenolic	>9 N/mm ² (1400psi) SF**
	ABS	>9 N/mm ² (1300psi) SF**
	Acrylic	>14 N/mm ² (2000psi)
Impact strength (ASTM D-950)	3-5 kJ/m ² (1.4-2.4 ft-lb/in ²)	
Dielectric constant @10kHz	2.5	
Dielectric strength	25 kV/mm	
Coefficient of thermal expansion	90 x 10 ⁻⁶ mm/mm/°C	
Coefficient of thermal conductivity	0.1 W/(m.K)	
Hardness (ISO868)	85 Shore D	

*Strength results will vary depending on the level of surface preparation and gap.

**SF = Substrate failure

Hot Strength



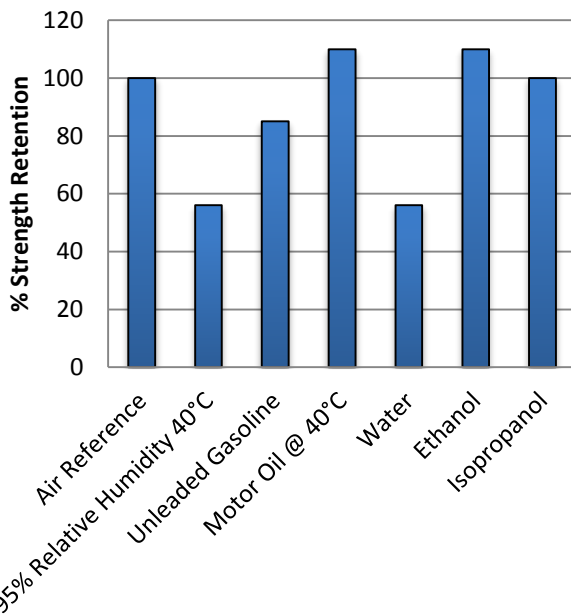
"Hot strength" shear strength tests performed on mild steel. 24hr cure at room temperature and conditioned to pull temperature for 30 minutes before testing.

910FS 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.

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Chemical Resistance



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

Directions for Use

- 1) Apply the adhesive sparingly to one surface.
- 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 sufficient strength is achieved, normally in a few seconds.
- 5) Any surplus adhesive can be removed with Permabond CA solvent, nitromethane or acetone.

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 (POP).

Storage & Handling

Storage Temperature	2 to 7°C (35 to 45°F)
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Allow adhesive to reach room temperature before opening bottle to prevent condensation inside the bottle which can reduce shelf life.

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 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.

Contact Permabond:

- Americas +1 732 868 1372
- US 800-640-7599
- Asia + 86 21 5773 4913
- Europe +44 (0) 1962 711661
- UK 0800 975 9800
- Deutschland 0800 111 388
- France 0805 111 388

info.americas@permabond.com

info.europe@permabond.com

info.asia@permabond.com

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