Cyanoacrylate

Permabond Engineering Adhesives

Features & Benefits

- Extremely fast setting
- Rapid development of high strength
- High temperature resistance
- Surface insensitive
- 100% reactive, no solvents

Approved to CID A-A-3097 Type II Class 2 and MIL-A-46050C Type II Class 2

Description

PERMABOND 792 is a low viscosity, surface insensitive adhesive that will rapidly bond substrates with acidic surfaces such as wood and plated surfaces. Plastics, Metals, Ceramics and elastomers are also rapidly bonded. The fast cure minimizes the occurrence of frosting and fogging.
Cyanoacrylate adhesives are single component adhesives that polymerize rapidly when pressed into a thin film between parts. The moisture adsorbed on the surface initiates the curing of the adhesive. Strong bonds are developed extremely fast and on a great variety of materials. These properties make **PERMABOND** cyanoacrylates the ideal adhesives for high speed production lines.

Physical Properties of Uncured Adhesive

Chemical composition	Ethyl cyanoacrylate
Appearance	Colourless
Viscosity @ 25°C	65-125 mPa.s (cP)
Specific Gravity	1.05

Typical Curing Properties

Maximum gap fill	0.15 mm ***0.006 in***
Cure speed*	2-3 seconds (Steel) 2-3 seconds (Buna N Rubber) 2-3 seconds (Phenolic)
Full strength	24 hours

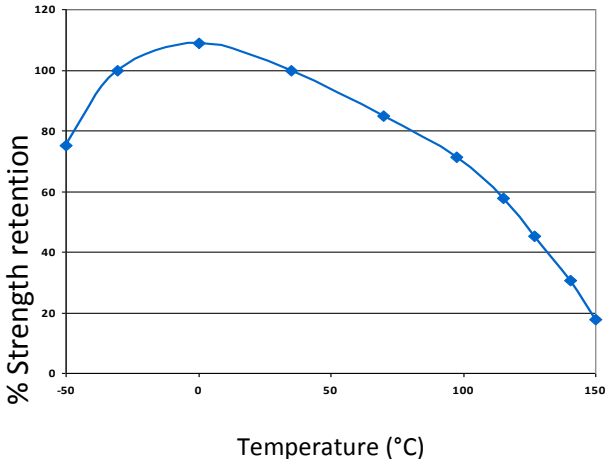
**Handling times can be affected by temperature, humidity and specific surfaces being bonded. Larger gaps or acidic surfaces will also reduce cure speed but this can be overcome by the use of Permabond C Surface Activator (CSA) or Permabond QFS 16.*

Typical Performance of Cured Adhesive

Shear strength* ISO 4587	Steel 18-22 N/mm² ***(2600-3200 psi)***
Tensile Strength	17 N/mm² ***(2500 psi)***
Hardness	85 Shore D
Coefficient of thermal expansion	90 x 10^{-6} mm/mm/°C
Dielectric Strength	10 mV/mm
Coefficient of thermal conductivity	0.1 W/(m.K)
Glass Transition Temperature	58°C ***(140°F)***

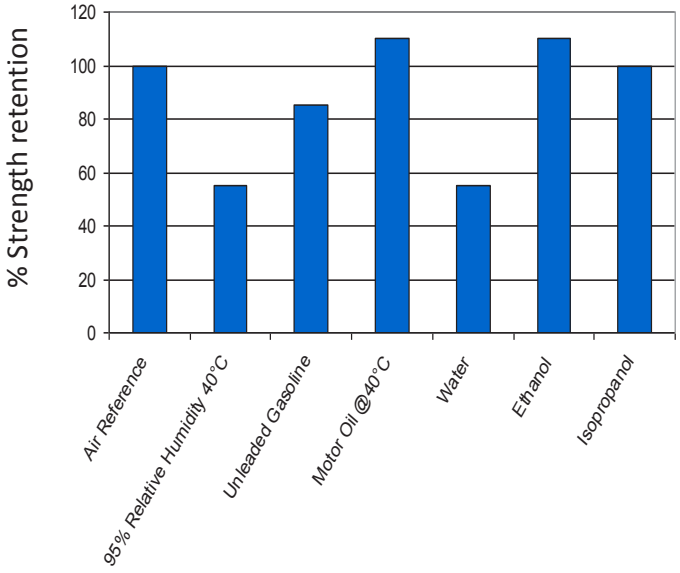
**Strength results will vary depending on the level of surface preparation and gap.*
SF = Substrate failure

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.

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.