

Features & Benefits

- 💧 Thixotropic
- 💧 Surface insensitive
- 💧 Fast cure
- 💧 Easy to apply and dispense
- 💧 High temperature resistance
- 💧 Maximum gap filling capability

Approved to CID A-A-3097 Type II Class 5
NSF Approved:
Non-food Compound Category Code P1 Reg. No 155298.

Description

PERMABOND® 2011 is a thixotropic, fast-setting cyanocrylate particularly suitable for use on vertical and porous substrates. This material can be used on metals, plastics, elastomers, ceramics and wood. Cyanocrylate 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 cyanocrylates the ideal adhesives for high speed production lines.

Physical Properties of Uncured Adhesive

Chemical composition	Ethyl cyanoacrylate
Appearance	Colourless
Viscosity @ 25°C	Gel
Specific gravity	1.1

Typical Curing Properties

Maximum gap fill	0.5 mm 0.02 in
Fixture / handling time* (0.3 N/mm ² shear strength is achieved)	5-10 seconds (Steel) 5-10 seconds (Buna N 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.

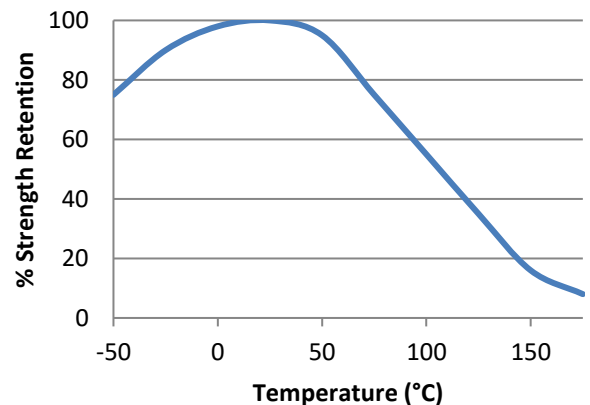
Typical Performance of Cured Adhesive

Shear strength* (ISO4587)	Steel	20-24 N/mm ² (2900-3500 psi)
	Aluminium	8-9 N/mm ² (1200-1300 psi)
	Zinc	10 N/mm ² (1500 psi)
	ABS	>8 N/mm ² (1200psi) SF**
	PVC	>10 N/mm ² (1450psi) SF**
	PC	>6 N/mm ² (900 psi) SF**
	Phenolic	14 N/mm ² (2000 psi)
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.

2011 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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