PERMABOND® 102

Cyanoacrylate

Technical Datasheet

Features & Benefits

- Plastic and rubber bonding
- Applications requiring fast fixturing
- Ease of use – no mixing or heat cure
- Bonds most materials
- 100% reactive, no solvents

Approved to MIL-A-46050C Type II Class 2 (existing designs)

Description

PERMABOND® 102 is a low viscosity general purpose cyanoacrylate adhesive suitable for bonding close-fitting components. It is fast setting and suitable for use on plastics, rubber and metals.

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 ideal adhesives for high speed production lines.

Physical Properties of Uncured Adhesive

Chemical composition	Ethyl cyanoacrylate
Appearance	Colourless
Viscosity @ 25°C	70-90 mPa.s *(cP)*
Specific gravity	1.1

Typical Curing Properties

Maximum gap fill	0.15 mm *0.006 in*
Fixture / handling time* *(0.3 N/mm² shear strength is achieved)*	10-15 seconds (Steel) 5-10 seconds (Buna N Rubber) 10-15 seconds (Phenolic) 7-10 seconds (PVC) 7-10 seconds (ABS)
Full strength	24 hours

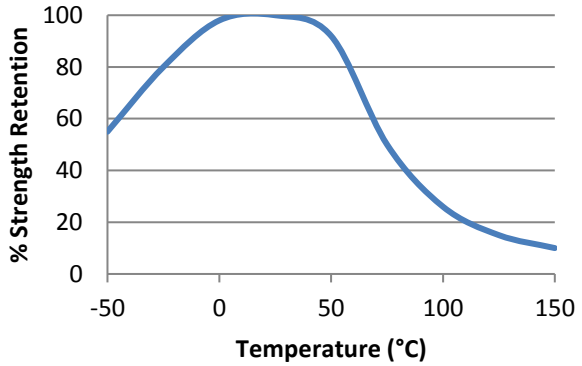
**Handling times can be affected by temperature, humidity and specific surfaces being bonded. Larger gaps or acidic surfaces will also reduce cure speed but this can be overcome by the use of Permabond C Surface Activator (CSA) or Permabond QFS 16.*

Typical Performance of Cured Adhesive

Shear strength* (ISO4587)	Steel 19-23 N/mm² *(2800-3300 psi)* Aluminium 7-9 N/mm² *(1000-1300 psi)* Zinc 8-10 N/mm² *(1200-1500 psi)* ABS >6 N/mm² *(900psi)* SF** PVC >6 N/mm² *(900psi)* SF** PC >5 N/mm² *(700 psi)* SF** Phenolic 12-14N/mm² *(1700-2000 psi)*
Impact strength (ASTM D-950)	3-5 kJ/m² *(1.4-2.4 ft-lb/in²)*
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.

102 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.