

## Permabond 170 Cyanoacrylate, gap filling

Category : Polymer , Adhesive , Thermoset , Acrylic/Cyanoacrylate Adhesive

### Material Notes:

PERMABOND® 170 is a methyl cyanoacrylate adhesive. It is a single part, high viscosity liquid that will cure rapidly at room temperature when pressed into a thin film between parts. Permabond 170 will cure to a fixture strength in 15 seconds on most surfaces and strength development is rapid. The adhesive was designed specifically for the bonding of metal surfaces and provides excellent bond strength to steel, aluminum and most metal surface. The methyl cyanoacrylate will also adhere well to a wide variety of other materials including most plastics and rubbers. Permabond® 170 has been formulated to be less aggressive to sensitive plastic surfaces such as Styrofoam™, polycarbonate and ABS. Features & Benefits: Fast-setting Ideal for bonding metals Rapid development of high strength Less aggressive to sensitive plastics Information provided by Permabond.

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_Permabond-170-Cyanoacrylate-gap-filling.php](http://www.lookpolymers.com/polymer_Permabond-170-Cyanoacrylate-gap-filling.php)

Physical Properties	Metric	English	Comments
Specific Gravity	1.10 g/cc	1.10 g/cc	Uncured
Viscosity	1500 cP	1500 cP	Uncured
	@Temperature 25.0 °C	@Temperature 77.0 °F	
Storage Temperature	2.00 - 7.00 °C	35.6 - 44.6 °F	

Mechanical Properties	Metric	English	Comments
Hardness, Shore D	85	85	ISO 868
Adhesive Bond Strength	>= 2.00 MPa	>= 290 psi	Butyl rubber, Substrate Failure, Shear; ISO 4587
	>= 4.00 MPa	>= 580 psi	Nitrile rubber, Substrate Failure, Shear; ISO 4587
	>= 9.00 MPa	>= 1310 psi	ABS, Substrate Failure, Shear; ISO 4587
	>= 10.0 MPa	>= 1450 psi	Phenolic, Substrate Failure, Shear; ISO 4587
	13.0 - 15.0 MPa	1890 - 2180 psi	Acrylic, Shear; ISO 4587
	13.0 - 15.0 MPa	1890 - 2180 psi	Aluminum, Shear; ISO 4587
	20.0 - 22.0 MPa	2900 - 3190 psi	Brass, Shear; ISO 4587
	20.0 - 22.0 MPa	2900 - 3190 psi	Stainless Steel, Shear; ISO 4587
	23.0 - 25.0 MPa	3340 - 3630 psi	Steel, Shear; ISO 4587
Impact	3.0 - 5.0	3.0 - 5.0	kJ/m <sup>2</sup> Adhesive Impact Strength; ASTM D950

Mechanical Properties	Metric	English	Comments
CTE, linear	90.0 $\mu\text{m}/\text{m}\cdot^{\circ}\text{C}$	50.0 $\mu\text{in}/\text{in}\cdot^{\circ}\text{F}$	
Thermal Conductivity	0.100 W/m-K	0.694 BTU-in/hr-ft <sup>2</sup> -°F	
Maximum Service Temperature, Air	90.6 °C	195 °F	
Minimum Service Temperature, Air	-62.2 °C	-80.0 °F	

Electrical Properties	Metric	English	Comments
Dielectric Constant	2.5	2.5	
	@Frequency 10000 Hz	@Frequency 10000 Hz	
Dielectric Strength	25.0 kV/mm	635 kV/in	

Processing Properties	Metric	English	Comments
Cure Time	0.250 min	0.00417 hour	Steel, handling time
	0.250 min	0.00417 hour	Buna N Rubber, handling time
	0.250 min	0.00417 hour	Phenolic, handling time
	1440 min	24.0 hour	full strength

Descriptive Properties	Value	Comments
Appearance	Colorless to slightly cloudy	Uncured
Maximum Gap Fill (mm)	0.38	
Strength Retention	100% at 0°C	Relative to 0°C
	15% at 150°C	Relative to 0°C
	30% at 100°C	Relative to 0°C
	55% at -50°C	Relative to 0°C
	90% at 50°C	Relative to 0°C

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