

Permabond 2011 Cyanoacrylate, gel

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

Material Notes:

PERMABOND® 2011 is a thixotropic, fast-setting cyanoacrylate particularly suitable for use on vertical and porous substrates. This material can be used on metals, plastics, elastomers, ceramics and wood. 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. Features & Benefits: Thixotropic Surface insensitive Fast cure Easy to apply and dispense High temperature resistance Maximum gap filling capability Information provided by Permabond.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Permabond-2011-Cyanoacrylate-gel.php

Physical Properties	Metric	English	Comments
Specific Gravity	1.10 g/cc	1.10 g/cc	Uncured
	1.10 g/cc	1.10 g/cc	Uncured
Viscosity	70 - 90 cP	70 - 90 cP	Uncured
	@Temperature 25.0 °C	@Temperature 77.0 °F	
Storage Temperature	2.00 - 7.00 °C	35.6 - 44.6 °F	
	2.00 - 7.00 °C	35.6 - 44.6 °F	

Mechanical Properties	Metric	English	Comments
Hardness, Shore D	85	85	ISO 868
	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
	>= 5.00 MPa	>= 725 psi	PC, Substrate Failure, Shear; ISO 4587
	>= 6.00 MPa	>= 870 psi	ABS, Substrate Failure, Shear; ISO 4587
	>= 6.00 MPa	>= 870 psi	PVC, Substrate Failure, Shear; ISO 4587
	8.00 - 9.00 MPa	1160 - 1310 psi	Aluminum, Shear; ISO 4587
	>= 9.00 MPa	>= 1310 psi	ABS, Substrate Failure, Shear; ISO 4587

Mechanical Properties	Metric	English	Comments
	10.0 MPa	1450 psi	Zinc, Shear; ISO 4587
	>= 14.0 MPa	>= 2030 psi	Acrylic, Shear; ISO 4587
	14.0 MPa	2030 psi	Phenolic, Shear; ISO 4587
	13.0 - 15.0 MPa	1890 - 2180 psi	Aluminum, Shear; ISO 4587
	21.0 MPa	3050 psi	Brass, Shear; ISO 4587
	21.0 MPa	3050 psi	Stainless Steel, Shear; ISO 4587
	20.0 - 24.0 MPa	2900 - 3480 psi	Steel, Shear; ISO 4587
	23.0 - 29.0 MPa	3340 - 4210 psi	Steel, Shear; ISO 4587
Impact	3.0 - 5.0	3.0 - 5.0	kJ/m^2 Adhesive Impact Strength; ASTM D950
	3.0 - 5.0	3.0 - 5.0	kJ/m^2 Adhesive Impact Strength; ASTM D950

Thermal Properties	Metric	English	Comments
CTE, linear	90.0 $\mu\text{m/m}\cdot^\circ\text{C}$	50.0 $\mu\text{in/in}\cdot^\circ\text{F}$	
	90.0 $\mu\text{m/m}\cdot^\circ\text{C}$	50.0 $\mu\text{in/in}\cdot^\circ\text{F}$	
Thermal Conductivity	0.100 W/m-K	0.694 BTU-in/hr-ft ² -°F	
	0.100 W/m-K	0.694 BTU-in/hr-ft ² -°F	
Maximum Service Temperature, Air	82.2 °C	180 °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	
	2.5	2.5	
	@Frequency 10000 Hz	@Frequency 10000 Hz	
Dielectric Strength	25.0 kV/mm	635 kV/in	
	25.0 kV/mm	635 kV/in	

Processing Properties	Metric	English	Comments
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Cure Time Processing Properties	0.0833 - 0.167 min Metric	0.00139 - 0.00278 hour English	Steel handling time Comments
	0.0833 - 0.167 min	0.00139 - 0.00278 hour	Buna N Rubber, handling time
	0.0833 - 0.167 min	0.00139 - 0.00278 hour	Phenolic, handling time
	0.167 - 0.250 min	0.00278 - 0.00417 hour	Steel, handling time
	0.167 - 0.250 min	0.00278 - 0.00417 hour	Buna N Rubber, handling time
	0.167 - 0.250 min	0.00278 - 0.00417 hour	Phenolic, handling time
	1440 min	24.0 hour	full strength
	1440 min	24.0 hour	full strength

Descriptive Properties	Value	Comments
Appearance	Colorless	Uncured
	Colorless Gel	Uncured
Maximum Gap Fill (mm)	0.15	
	0.5	
Strength Retention	100% at 0°C	Relative to 0°C
	100% at 0°C	Relative to 0°C
	15% at 150°C	Relative to 0°C
	15% at 150°C	Relative to 0°C
	30% at 100°C	Relative to 0°C
	50% at 100°C	Relative to 0°C
	55% at -50°C	Relative to 0°C
	75% at -50°C	Relative to 0°C
	90% at 50°C	Relative to 0°C
	90% at 50°C	Relative to 0°C

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