

Permabond TA4590 Toughened Acrylic Adhesive

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

Material Notes:

Permabond TA4590 is a structural acrylic adhesive designed primarily for bonding metals, ferrites, ceramics and some thermoplastics. This product was specifically designed to be non-corrosive to sensitive copper parts or other electrically conductive surfaces. TA4590 is a no-mix system which has a 15-30 sec. handling time on metal surfaces when used with Initiator 44. Mix ratio 10:1.5 (adhesive:initiator).

Features & Benefits: Adhesion to a wide variety of substrates Fast cure at room temperature Non-drip formulation Acid-free and non-corrosive No mix application High shear strength Good impact strength Good chemical resistance Information provided by Permabond.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Permabond-TA4590-Toughened-Acrylic-Adhesive.php

Physical Properties	Metric	English	Comments
Density	1.14 g/cc	0.0412 lb/in ³	uncured
Viscosity	17000 - 25000 cP	17000 - 25000 cP	at 20 rpm vibration
	@Temperature 25.0 °C	@Temperature 77.0 °F	
	110000 - 125000 cP	110000 - 125000 cP	at 2.5 rpm vibration
	@Temperature 25.0 °C	@Temperature 77.0 °F	
Storage Temperature	5.00 - 25.0 °C	41.0 - 77.0 °F	

Mechanical Properties	Metric	English	Comments
Tensile Strength	20.0 - 30.0 MPa	2900 - 4350 psi	stainless steel after 24 hours
	@Temperature 25.0 °C	@Temperature 77.0 °F	
Adhesive Bond Strength	4.00 MPa	580 psi	Ferrite/steel after 3 mins, Shear
	9.00 MPa	1310 psi	Steel/steel after 3 mins, Shear
	>= 14.0 MPa	>= 2030 psi	Ferrite/steel after 24 hours, Shear
	12.0 - 18.0 MPa	1740 - 2610 psi	Zinc Plated after 24 hours, Shear
	20.0 - 25.0 MPa	2900 - 3630 psi	Steel/steel after 24 hours, Shear
Impact	10 - 20	10 - 20	kJ/m ² Adhesive Impact Strength

Processing Properties	Metric	English	Comments
Cure Time	0.250 - 0.500 min	0.00417 - 0.00833 hour	zinc, fixture time with initiator 44
	1440 min	24.0 hour	full cure

Processing Properties	<small><= 2.00 min</small> Metric	<small><= 0.0333 hour</small> English	Comments
	@Temperature 25.0 °C	@Temperature 77.0 °F	at 44, 50% rh
Shelf Life	12.0 Month	12.0 Month	

Descriptive Properties	Value	Comments
Appearance	Blue, thixotropic	Uncured
Maximum Gap Fill (mm)	0.5	
Strength Retention	100% at 0°C	Relative to 0°C
	30% at 150°C	Relative to 0°C
	5% at 200°C	Relative to 0°C
	80% at 100°C	Relative to 0°C
	95% at 50°C	Relative to 0°C

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