

Master Bond EP46HT Epoxy Adhesive for Structural Bonding

Category : Polymer , Adhesive , Thermoset , Epoxy , Epoxy Adhesive

Material Notes:

Description: Master Bond System EP46HT is a newly formulated two component high performance heat resistant epoxy resin system with excellent mechanical strength and chemically resistant properties for structural bonding, sealing and casting. This low viscosity polymer composition offers the convenience of a long pot life at ambient temperatures for ease of processing and cures readily at elevated temperatures. It is 100% reactive and does not contain any volatiles. The cured EP46HT epoxy polymer features outstanding heat resistance and exceptionally good long term high temperature structural strength retention even after prolonged exposure to moisture, aggressive chemicals and other severe environmental conditions. Master Bond Polymer System EP46HT is formulated for use by mixing the two components with a noncritical 100/25 mix ratio by wt. and has a pot life of 12-24 hours at 75°F. A typical cure schedule comprises heating 2-3 hours at 250°F followed by an optional post cure of 2 hours at 350-400°F to achieve optimum properties. There are no solvents or diluents present in EP46HT. The color of Part A is clear, Part B is amber. A non-drip paste version called EP46HTND-2 is also available. Master Bond Polymer System EP46HT is being used in a number of applications requiring excellent retention of structural strength along with chemically resistant properties at high service temperatures. Specific uses include structural bonding, sealing, potting, casting, filament windings, and composite structures comprising glass, polyimide, and graphite fiber reinforcements. Particularly noteworthy are the excellent moisture and fuel resistance properties of the cured EP46HT material. The product exhibits outstanding electrical insulation properties. The service temperature range extends from -150°F to 500°F. The low viscosity of EP46HT allows it to be used in many potting and casting applications requiring high temperatures and/or good chemical resistance. **Product Advantages:** Convenient mixing; product properties relatively unaffected by small changes in mix ratio. Low viscosity, excellent system for high temperature casting & potting. High bonding strength to similar and dissimilar substrates. Good long term durability, thermal shock and chemical resistance. 100% reactive; no volatiles emitted during cure. Resists steam autoclaving, fuels, and many solvents, acids, bases. Excellent electrical insulation properties. Good physical properties even at high temperatures. Long pot life at room temperature. Information provided by MasterBond®

Order this product through the following link:

http://www.lookpolymers.com/polymer_Master-Bond-EP46HT-Epoxy-Adhesive-for-Structural-Bonding.php

Physical Properties	Metric	English	Comments
Viscosity	4000 - 6000 cP	4000 - 6000 cP	

Mechanical Properties	Metric	English	Comments
Hardness, Shore D	75 - 90	75 - 90	
Tensile Strength at Break	58.6 MPa	8500 psi	
	@Temperature 149 °C	@Temperature 300 °F	
Tensile Modulus	75.8 MPa	11000 psi	
	@Temperature 23.9 °C	@Temperature 75.0 °F	
Tensile Modulus	2.14 GPa	310 ksi	
	@Temperature 149 °C	@Temperature 300 °F	

Mechanical Properties	Metric	English	Comments
	2.59 GPa @Temperature 23.9 °C	375 ksi @Temperature 75.0 °F	
Flexural Strength	100 MPa	14500 psi	
Shear Strength	>= 8.96 MPa @Temperature 149 °C	>= 1300 psi @Temperature 300 °F	Tensile lap, Al to Al
	>= 13.8 MPa @Temperature 23.9 °C	>= 2000 psi @Temperature 75.0 °F	Tensile lap, Al to Al

Thermal Properties	Metric	English	Comments
Maximum Service Temperature, Air	260 °C	500 °F	
Minimum Service Temperature, Air	-101 °C	-150 °F	
Glass Transition Temp, Tg	190 °C	374 °F	

Electrical Properties	Metric	English	Comments
Volume Resistivity	1.40e+16 ohm-cm	1.40e+16 ohm-cm	
Dielectric Constant	4.8 @Frequency 100 Hz	4.8 @Frequency 100 Hz	
Dielectric Strength	17.1 kV/mm	435 kV/in	
Dissipation Factor	0.015 @Frequency 100 Hz	0.015 @Frequency 100 Hz	

Processing Properties	Metric	English	Comments
Cure Time	120 - 180 min @Temperature 121 °C	2.00 - 3.00 hour @Temperature 250 °F	optional post cure 2 hours at 350-400°F
Pot Life	720 - 1440 min	720 - 1440 min	100 gram batch
Shelf Life	12.0 Month	12.0 Month	unopened containers

Descriptive Properties	Value	Comments
Mixing Ratio (A to B)	100/25	by weight

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