

Master Bond EP112LS Two part, heat curing epoxy for potting, encapsulation, coating, sealing and impregnation

Category : Polymer , Thermoset , Epoxy , Epoxy Encapsulant, Unreinforced

Material Notes:

Master Bond EP112LS is a low viscosity two component epoxy resin system for potting, encapsulation, sealing, coating and impregnation. The mix ratio is an easy to use 100:80 by weight. EP112LS offers an long open time of 2-3 days or longer. It does require oven curing for a number of hours. A typical cure schedule would be 1-2 hours at 200-210°F followed by 3-4 hours at 250°F and then 4-6 hours at 300°F. Post curing at 350°F will further enhance product properties. Some of the more noteworthy attributes of EP112LS are good electrical insulation properties, physical strength values as well as optical clarity. It bonds very well to a wide variety of substrates, including glass fibers and ceramics, along with metals, composites, glass and many rubbers and plastics. It features good resistance to a variety of chemicals, including water, oils, fuels, acids and bases. EP112LS is serviceable over the wide temperature range of -60°F to +450°F. It is used for potting, sealing, coating and encapsulation applications as well as for impregnating especially when non-yellowing is an important consideration. This is a common issue in electronic, aerospace and opto-electronic environments. Another feature is its ability to retain its electrical insulation profile over a wide temperature range. Even though the cure schedule is somewhat long, EP112LS is a "go to" material for epoxy applications where superior non-yellowing properties are needed.

Product Advantages: Low viscosity, long working life at ambient temperatures; very low exotherm
 Good physical strength properties. Solid dimensional stability
 Good electrical insulation characteristics
 Great adhesion to similar and dissimilar substrates
 Thermal stability, service temperature range -60°F to +450°F
 Ideal for impregnation applications
 Excellent optical clarity and non-yellowing properties
 Information provided by MasterBond®

Order this product through the following link:

http://www.lookpolymers.com/polymer_Master-Bond-EP112LS-Two-part-heat-curing-epoxy-for-potting-encapsulation-coating-sealing-and-impregnation.php

Physical Properties	Metric	English	Comments
Viscosity	20 - 80 cP	20 - 80 cP	Part B
	@Temperature 23.9 °C	@Temperature 75.0 °F	
	50 - 200 cP	50 - 200 cP	mixed compound
	@Temperature 23.9 °C	@Temperature 75.0 °F	
	100 - 500 cP	100 - 500 cP	Part A
	@Temperature 23.9 °C	@Temperature 75.0 °F	

Mechanical Properties	Metric	English	Comments
Hardness, Shore D	>= 85	>= 85	
Tensile Strength at Break	>= 75.8 MPa	>= 11000 psi	
Elongation at Break	<= 3 %	<= 3 %	
Tensile Modulus	>= 2.07 GPa	>= 300 ksi	
	@Temperature 149 °C	@Temperature 300 °F	

Mechanical Properties	Metric	English	Comments
	@Temperature 23.9 °C	@Temperature 75.0 °F	
Compressive Strength	>= 138 MPa	>= 20000 psi	

Thermal Properties	Metric	English	Comments
Maximum Service Temperature, Air	232 °C	450 °F	
Minimum Service Temperature, Air	-51.1 °C	-60.0 °F	

Optical Properties	Metric	English	Comments
Refractive Index	1.55	1.55	

Electrical Properties	Metric	English	Comments
Volume Resistivity	>= 1.00e+10 ohm-cm	>= 1.00e+10 ohm-cm	
	@Temperature 150 °C	@Temperature 302 °F	
	>= 1.00e+12 ohm-cm	>= 1.00e+12 ohm-cm	
Dielectric Constant	@Temperature 100 °C	@Temperature 212 °F	
	>= 1.00e+14 ohm-cm	>= 1.00e+14 ohm-cm	
	@Temperature 25.0 °C	@Temperature 77.0 °F	
	3.1	3.1	
	@Frequency 60.0 Hz, Temperature 25.0 °C	@Frequency 60.0 Hz, Temperature 77.0 °F	
	3.2	3.2	
	@Frequency 60.0 Hz, Temperature 100 °C	@Frequency 60.0 Hz, Temperature 212 °F	
	3.2	3.2	
	@Frequency 1.00e+6 Hz, Temperature 25.0 °C	@Frequency 1.00e+6 Hz, Temperature 77.0 °F	
	3.3	3.3	
	@Frequency 1000 Hz, Temperature 25.0 °C	@Frequency 1000 Hz, Temperature 77.0 °F	
	3.4	3.4	
	@Frequency 1000 Hz, Temperature 100 °C	@Frequency 1000 Hz, Temperature 212 °F	
	3.4	3.4	

Electrical Properties	@Frequency 1.00e+6 Hz, Metric	@Frequency 1.00e+6 Hz, English	Comments
	Temperature 100 °C	Temperature 212 °F	
	3.6	3.6	
	@Frequency 1.00e+6 Hz, Temperature 150 °C	@Frequency 1.00e+6 Hz, Temperature 302 °F	
	3.7	3.7	
	@Frequency 60.0 Hz, Temperature 150 °C	@Frequency 60.0 Hz, Temperature 302 °F	
	4.0	4.0	
	@Frequency 1000 Hz, Temperature 150 °C	@Frequency 1000 Hz, Temperature 302 °F	
Dissipation Factor	0.0030	0.0030	
	@Frequency 60.0 Hz, Temperature 100 °C	@Frequency 60.0 Hz, Temperature 212 °F	
	0.0030	0.0030	
	@Frequency 60.0 Hz, Temperature 150 °C	@Frequency 60.0 Hz, Temperature 302 °F	
	0.0040	0.0040	
	@Frequency 1000 Hz, Temperature 100 °C	@Frequency 1000 Hz, Temperature 212 °F	
	0.0050	0.0050	
	@Frequency 60.0 Hz, Temperature 25.0 °C	@Frequency 60.0 Hz, Temperature 77.0 °F	
	0.0070	0.0070	
	@Frequency 1000 Hz, Temperature 25.0 °C	@Frequency 1000 Hz, Temperature 77.0 °F	
	0.013	0.013	
	@Frequency 1.00e+6 Hz, Temperature 25.0 °C	@Frequency 1.00e+6 Hz, Temperature 77.0 °F	
	0.015	0.015	
	@Frequency 1.00e+6 Hz, Temperature 100 °C	@Frequency 1.00e+6 Hz, Temperature 212 °F	
	0.020	0.020	
	@Frequency 1.00e+6 Hz, Temperature 150 °C	@Frequency 1.00e+6 Hz, Temperature 302 °F	

Electrical Properties	0.070 Metric	0.070 English	Comments
	@Frequency 1000 Hz, Temperature 150 °C	@Frequency 1000 Hz, Temperature 302 °F	

Processing Properties	Metric	English	Comments
Cure Time	60.0 - 120 min	1.00 - 2.00 hour	first
	@Temperature 93.3 - 98.9 °C	@Temperature 200 - 210 °F	
Pot Life	180 - 240 min	3.00 - 4.00 hour	second, Post Curing 350°F
	@Temperature 121 °C	@Temperature 250 °F	
Shelf Life	2880 - 4320 min	2880 - 4320 min	100 gram batch
	@Temperature 23.9 °C	@Temperature 75.0 °F	
Shelf Life	12.0 Month	12.0 Month	in original unopened containers
	@Temperature 23.9 °C	@Temperature 75.0 °F	

Descriptive Properties	Value	Comments
Mixing Ratio (A to B)	100:80	by weight

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