

## Resinlab® EP1112NC Clear Electronic Grade Epoxy Encapsulant

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

### Material Notes:

Resinlab™ EP1112NC Clear is a two part unfilled fast curing electronic grade epoxy encapsulant designed for small to medium sized castings. EP1112NC Clear is a modified version of the standard EP1112, which utilizes a higher molecular weight aromatic diluent to significantly reduce the tendency for crystallization in the epoxy resin. It cures completely at room temperature to a tough, flexible polymer. Its low viscosity allows for good wicking and penetration into components and circuitry and also gives good air release. It has very good resistance to water, acids and bases and most organic solvents. Thermal shock and cycling properties are also enhanced by its high elongation giving it the ability to absorb difference in CTE's of substrates. It was especially formulated to a 1A:1B volume mix ratio for use in side-by-side dispensing cartridges and meter/mix and dispense equipment. EP1112NC Clear will reach full cure at room temperature within 6 to 12 hours. Cure time can be accelerated by the application of heat after product has gelled. Times and temperatures from 1 hour at 65°C to 10 minutes at 100°C are typical for small castings (less than 50 grams). Information Provided by Resinlab L.L.C., an Ellsworth Adhesives Company.

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_Resinlab-EP1112NC-Clear-Electronic-Grade-Epoxy-Encapsulant.php](http://www.lookpolymers.com/polymer_Resinlab-EP1112NC-Clear-Electronic-Grade-Epoxy-Encapsulant.php)

Physical Properties	Metric	English	Comments
Specific Gravity	0.960 g/cc	0.960 g/cc	Part B; TM R050-16
	1.04 g/cc	1.04 g/cc	Mixed; TM R050-16
	1.12 g/cc	1.12 g/cc	Part A; TM R050-16
Water Absorption	0.40 %	0.40 %	TM R050-35
	@Time 86400 sec	@Time 24.0 hour	
Viscosity	1200 cP	1200 cP	Part A, RVT, #2, 20 rpm; TM R050-12
	1200 cP	1200 cP	Part B, RVT, #2, 20 rpm; TM R050-12
	1200 cP	1200 cP	Mixed; TM R050-12

Mechanical Properties	Metric	English	Comments
Hardness, Shore D	70	70	TM R050-17
Tensile Strength at Break	11.0 MPa	1600 psi	TM R050-36
Tensile Strength, Ultimate	11.7 MPa	1700 psi	TM R050-36
Tensile Strength, Yield	6.21 MPa	900 psi	TM R050-36
Elongation at Break	50 %	50 %	TM R050-36
Tensile Modulus	0.414 GPa	60.0 ksi	TM R050-36

Compressive Yield Strength Mechanical Properties	8.27 MPa Metric	1200 psi English	TM R050-38 Comments
Compressive Strength	124 MPa	18000 psi	Break; TM R050-38
	128 MPa	18500 psi	Ultimate; TM R050-38
Compressive Modulus	0.483 GPa	70.0 ksi	TM R050-38
Adhesive Bond Strength	6.89 MPa	1000 psi	Lap shear; 2024 T3 Al Abraded / MEK Wipe; TM R050-37

Thermal Properties	Metric	English	Comments
CTE, linear	60.0 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$	33.3 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$	
Thermal Conductivity	0.140 W/m-K	0.972 BTU-in/hr-ft <sup>2</sup> -°F	
Maximum Service Temperature, Air	121 °C	250 °F	
Minimum Service Temperature, Air	-40.0 °C	-40.0 °F	
Glass Transition Temp, Tg	48.0 °C	118 °F	TM R050-25

Optical Properties	Metric	English	Comments
Transmission, Visible	90 %	90 %	clear; thickness not quantified

Electrical Properties	Metric	English	Comments
Volume Resistivity	8.00e+14 ohm-cm	8.00e+14 ohm-cm	
Dielectric Constant	4.2	4.2	
	@Frequency 100 Hz, Temperature 25.0 °C	@Frequency 100 Hz, Temperature 77.0 °F	
Dielectric Strength	16.1 kV/mm	410 kV/in	

Processing Properties	Metric	English	Comments
Pot Life	8.0 - 12 min	8.0 - 12 min	Mass: 50g; TM R050-19

Descriptive Properties	Value	Comments
Color	Clear	
Mix Ratio	1:1	Volume
	100:85	Weight

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