

Resinlab® EP1385 Clear Epoxy Formulation

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

Material Notes:

Resinlab™ EP1385 Clear is an epoxy formulation designed for applications requiring resistance to E-85 type fuels. It has good wetting and adhesion to most surfaces. It has very good resistance to water, acids and bases and most organic solvents. The EP1385 Clear is a two part unfilled electronic grade epoxy encapsulating material designed for small to medium sized castings. It has a pot life of about one hour, cures quickly to a tack free handle strength at room temperature within 3 to 4 hours, and reaches a tough, semi-rigid state within 48 hours. Cure can be accelerated by the addition of heat. Times and temperatures from ½ hour at 100°C to 1 hour at 80°C or 4 hours at 50°C will bring the product to full cure. Information Provided by Resinlab L.L.C., an Ellsworth Adhesives Company.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Resinlab-EP1385-Clear-Epoxy-Formulation.php

Physical Properties	Metric	English	Comments
Specific Gravity	1.09 g/cc	1.09 g/cc	Part B; TM R050-16
	1.14 g/cc	1.14 g/cc	Mixed; TM R050-16
	1.16 g/cc	1.16 g/cc	Part A; TM R050-16
Water Absorption	0.35 %	0.35 %	TM R050-35
	@Time 86400 sec	@Time 24.0 hour	
Viscosity	1000 cP	1000 cP	Part B, RVT, #2, 2.5 rpm; TM R050-12
	5000 cP	5000 cP	Mixed; TM R050-12
	14000 cP	14000 cP	Part A, RVT, #5, 2.5 rpm; TM R050-12

Mechanical Properties	Metric	English	Comments
Hardness, Shore D	75	75	TM R050-17
Tensile Strength at Break	55.2 MPa	8000 psi	TM R050-36
Tensile Strength, Ultimate	56.5 MPa	8200 psi	TM R050-36
Tensile Strength, Yield	31.0 MPa	4500 psi	TM R050-36
Elongation at Break	3.0 %	3.0 %	TM R050-36
Tensile Modulus	3.10 GPa	450 ksi	TM R050-36
Compressive Yield Strength	68.9 MPa	10000 psi	TM R050-38
Compressive Strength	138 MPa	20000 psi	Ultimate; TM R050-38
	138 MPa	20000 psi	Break; TM R050-38

Mechanical Properties	Metric ^{Pa}	English	Comments
Adhesive Bond Strength	3.10 MPa	450 psi	Lap shear; 2024 T3 Al Abraded / MEK Wipe; TM R050-37

Thermal Properties	Metric	English	Comments
CTE, linear	60.0 $\mu\text{m}/\text{m}\cdot\text{°C}$	33.3 $\mu\text{in}/\text{in}\cdot\text{°F}$	
Thermal Conductivity	0.140 W/m-K	0.972 BTU-in/hr-ft ² -°F	
Maximum Service Temperature, Air	150 °C	302 °F	
Minimum Service Temperature, Air	-40.0 °C	-40.0 °F	
Glass Transition Temp, Tg	92.0 °C	198 °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	4.5	4.5	
	@Frequency 100 Hz, Temperature 25.0 °C	@Frequency 100 Hz, Temperature 77.0 °F	
Dielectric Strength	17.3 kV/mm	440 kV/in	

Processing Properties	Metric	English	Comments
Pot Life	45 min	45 min	Mass: 100g; TM R050-19

Descriptive Properties	Value	Comments
Color	Clear	
E-85 Fuel Resistance (%)	-2	Hardness change, 1 year
	4.6	Weight gain, 1 year
Mix Ratio	100:47	Weight
	2:1	Volume

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