

Resinlab® EP1390 Medium Viscosity, Self Extinguishing Flame Retardant Epoxy Casting Resin System

Category : Polymer , Thermoset , Epoxy , Epoxy Cure Resin

Material Notes:

Resinlab™ EP1390 is a RoHS compliant, medium viscosity, self extinguishing flame retardant epoxy casting resin system. It is recognized under the Component Recognition Program of Underwriters Laboratories Inc., (File# E186034) for UL Standard 94. EP1390 qualifies for a vertical burn rating of V-0 at 3mm thickness. It gives very good resistance to water, salt spray, inorganic acids and bases and most organic solvents. It cures quickly at room temperature to a tough, semi-rigid polymer. It has good wetting and adhesion to most surfaces and is free flowing to penetrate voids and give good air release. EP1390 was formulated to a 4/1 volume mix ratio for ease of use in automatic mixing equipment with static mixers. It contains soft, low-abrasion fillers which can separate over time, although they have good resistance to hard settling. If used in side-by-side cartridge format, they should be stored horizontally in a cool place (5C), rotating stock on a FIFO basis. EP1390 will generally reach handle cure at room temperature within 1 to 4 hours depending upon mass and ambient temperature. Full cure usually achieved within 24 – 48 hours. Cure time can be accelerated by the application of heat after product has gelled. Times and temperatures from 2 hours at 60°C to 30 minutes at 100°C are typical for most castings (less than 100 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-EP1390-Medium-Viscosity-Self-Extinguishing-Flame-Retardant-Epoxy-Casting-Resin-System.php

Physical Properties	Metric	English	Comments
Specific Gravity	0.970 g/cc	0.970 g/cc	Part B; TM R050-16
	1.25 g/cc	1.25 g/cc	Mixed; TM R050-16
	1.32 g/cc	1.32 g/cc	Part A; TM R050-16
Water Absorption	0.13 %	0.13 %	TM R050-35
	@Time 86400 sec	@Time 24.0 hour	
Viscosity	300 cP	300 cP	Part B, RVT, #2, 20 rpm; TM R050-12
	7000 cP	7000 cP	Mixed; TM R050-12
	9000 cP	9000 cP	Part A, RVT, #6, 20 rpm; TM R050-12

Mechanical Properties	Metric	English	Comments
Hardness, Shore D	85	85	TM R050-17
Tensile Strength at Break	44.8 MPa	6500 psi	TM R050-36
Tensile Strength, Ultimate	44.8 MPa	6500 psi	TM R050-36
Tensile Strength, Yield	20.7 MPa	3000 psi	TM R050-36

Elongation at Break Mechanical Properties	1.0 - 2.0 % Metric	1.0 - 2.0 % English	TM R050-36 Comments
Tensile Modulus	4.14 GPa	600 ksi	TM R050-36
Compressive Yield Strength	68.9 MPa	10000 psi	TM R050-38
Compressive Strength	103 MPa	15000 psi	Break; TM R050-38
	117 MPa	17000 psi	Ultimate; TM R050-38
Compressive Modulus	2.76 GPa	400 ksi	TM R050-38
Adhesive Bond Strength	15.2 MPa	2200 psi	Lap shear; 2024 T3 Al Abraded / MEK Wipe; TM R050-37

Thermal Properties	Metric	English	Comments
CTE, linear	40.0 $\mu\text{m}/\text{m}\cdot\text{°C}$	22.2 $\mu\text{in}/\text{in}\cdot\text{°F}$	
Thermal Conductivity	0.500 W/m-K	3.47 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	66.0 °C	151 °F	TM R050-25

Electrical Properties	Metric	English	Comments
Volume Resistivity	8.10e+15 ohm-cm	8.10e+15 ohm-cm	
Dielectric Constant	4.8 @Frequency 100 Hz, Temperature 25.0 °C	4.8 @Frequency 100 Hz, Temperature 77.0 °F	
Dielectric Strength	16.1 kV/mm	410 kV/in	

Processing Properties	Metric	English	Comments
Cure Time	120 min @Temperature 60.0 °C	2.00 hour @Temperature 140 °F	
	1440 - 2880 min @Temperature 25.0 °C	24.0 - 48.0 hour @Temperature 77.0 °F	
Pot Life	45 min	45 min	Mass: 200g; TM R050-19

Descriptive Properties	Value	Comments
Color	Black	

Mix Ratio Descriptive Properties	100:18 Value	Weight Comments
	4:1	Volume

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