



Technical Data Sheet

Electronic & Engineering Materials

ELAN-Cast[®] E 494 RQ

Two-Component Epoxy Casting Resin

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ELAN-Cast[®] E 494 RQ Epoxy

Product Description

ELAN-Cast[®] E 494 RQ Resin / C 494 RQ Hardener is a two-component, heat curing, 100%-solids epoxy resin system.

Areas of Application

Potting and casting of electrical and electronic equipment including high voltage distribution and metering transformers

Features and Benefits

- Convenient 1:1 mix ratio
- Chemical and moisture-resistant
- Long pot life
- Suitable for Class 180 service
- Reinforced for thermal shock resistance

Application Methods

- Vacuum casting / potting
- Bench casting / potting

Transportation / Storage

Store below 25°C / 77°F in a dry controlled environment out of direct sunlight. This material should be suitable for use stored under these conditions in the original sealed containers for six (6) months from the date of shipment.

Failure to store this product as recommended above may lead to deterioration in product performance.

Mix individual components thoroughly before use.

Health / Safety

Refer to the Material Safety Data Sheet.

Typical Properties of Material as Supplied

Property	Conditions	Value		Units
		ELAN-Cast [®] E 494 RQ Resin	ELAN-Cast [®] C 494 RQ Hardener	
Viscosity	25°C / 77°F	100,000 – 200,000	10,000 – 25,000	cP
Weight per Gallon	25°C / 77°F	12.4 – 12.8	11.2 – 11.6	pounds
Flash Point	ASTM D93	> 94 > 201	> 94 > 201	°C °F
Mix Ratio	Parts by weight	100	100	



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Typical Properties of Mixed Materials

Property	Conditions	Value	Units
Viscosity	25°C / 77°F	20,000 – 50,000	cP
Viscosity	75°C / 167°F	4,000 – 9,000	cP
Pot Life	25°C / 77°F	2 – 3	days
Sunshine Gel Time	135°C / 275°C	10 – 15	minutes

Application and Curing Schedule

ELAN-Cast[®] E 494 RQ Resin may be preheated to 70 – 75°C / 158 – 167°F prior to addition of Hardener for easier handling. Mix Resin and Hardener in ratio above with mechanical agitation until homogeneous.

Mixture may be heated to 50 – 60°C / 122 - 140°F for casting. Best results will be obtained using vacuum to remove entrapped air.

Optimum performance will be achieved with a step cure of 4 hours at 80°C / 176°F plus 4 hours at 120°C / 248°F plus four hours at 150°C / 302°F.

For less critical applications cure for 4 – 6 hours at 135°C / 257°F.

The cure schedules above are based on time after the unit reaches the specified temperature and are recommendations only. The user is responsible for determining the optimum cure conditions for his application.

Typical Mechanical Properties

Specimens cured 4 h at 80°C / 176°F + 4 h at 120°C / 248°F + 4 h at 150°C / 302°F.

Property	Method	Conditions	Value	Units
Hardness		Shore D	80	
Glass Transition Temp.	ASTM E831	TMA	22	°C
Coefficient of Thermal Expansion	ASTM E831	Below Tg	95	ppm / °C
		Above Tg	345	ppm / °C
Tensile Strength	ASTM D638	25°C / 77°F	2900	psi
Elongation	ASTM D638	25°C / 77°F	13	%
Thermal Conductivity	ASTM C518		0.4	W/m·K



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Typical Electrical Properties

Specimens cured 4 h at 80°C / 176°F + 4 h at 120°C / 248°F + 4 h at 150°C / 302°F.

Property	Method	Conditions	Value	Units
Dielectric Strength	ASTM D149	25°C / 77°F – 100 mils	450	volts / mil
Dielectric Strength	ASTM D149	25°C / 77°F – 100 mils After 24 hours in water	450	volts / mil
Dielectric Constant	ASTM D150	1 kHz – 25°C / 77°F	3.5	
		1 kHz – 100°C / 212°F	4.9	
		1 kHz – 150°C / 302°F	4.9	
		1 kHz – 200°C / 392°F	4.6	
Dissipation Factor	ASTM D150	1 kHz – 25°C / 77°F	0.01	
		1 kHz – 100°C / 212°F	0.02	
		1 kHz – 150°C / 302°F	0.06	
		1 kHz – 200°C / 392°F	0.17	
Surface Resistivity		25°C / 77°F	2.2 X 10 ¹⁶	ohms / sq.
Volume Resistivity	ASTM D257	25°C / 77°F	1.1 X 10 ¹⁵	ohm-cm

The above properties are typical values and are not intended for specification use.

ELANTAS PDG, Inc. warrants the chemical composition of its products within stated tolerances, but does not guarantee that a product will be appropriate for any particular application. Any recommendation, performance of tests or suggestion is offered merely as a guide and is not a substitute for a thorough evaluation by the user. No representative of ELANTAS PDG, Inc. has the authority to offer a warranty that a product will perform satisfactorily in manufacturing a product and no such representation should be relied upon.