ELANTAS
Electrical Insulation

Technical Data Sheet

Electronic & Engineering Materials

ELAN-Cast® E 297 Resin
ELAN-Cast® C 110 Hardener

Two-Component Epoxy Potting Compound

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ELAN-Cast® E 297 / C 110 Epoxy

Product Description

ELAN-Cast® E 297 / C 110 Epoxy is a two-component, room temperature curing, 100%-solids resin system.

Areas of Application

Potting and sealing of electrical and electronic equipment

Features and Benefits

- Excellent electrical properties
- Mineral-filled for improved heat dissipation
- Low shrinkage
- Fast curing at room temperature

Application Methods

- Bench Casting / Potting
- Vacuum 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 twelve (12) 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. See technical bulletin TI-4000 for additional information on handling of epoxy resins and hardeners

Health / Safety

Refer to the Material Safety Data Sheet.

Typical Properties of Material as Supplied

Property	Conditions	Value		Units
		ELAN-Cast® E 297 Resin	**ELAN-Cast® C 110 Hardener**	
Viscosity	25°C / 77°F	8,500 - 13,500	200 - 300	cP
Weight per Gallon	25°C / 77°F	13.8 - 14.2	7.8 - 8.1	pounds
Flash Point	ASTM D93	94 201	> 94 > 201	°C °F
Mix Ratio	Parts by weight Parts by volume	100 100	20 35	

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Typical Properties of Mixed Materials

Property	Conditions	Value	Units
Viscosity	25°C / 77°F	1,500 - 2,500	cP
Gel Time (200 mL)	25°C / 77°F	30 - 50	minutes

Curing Schedule

Mix ELAN-Cast® E 297 Resin and ELAN-Cast® C 110 Hardener in ratio specified above until homogeneous. Pot life of the mixture is less than 50 minutes. Mix only as much as needed for the job at hand.

Mixture will harden within 24 hours. Allow 3 - 5 days to develop full properties.

Cure can be accelerated by baking for 16 hours at 60°C / 140°F or 2 hours at 100°C / 212°F after mixture has gelled.

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 24 hours at 25°C / 77°F + 16 hours at 60°C / 140°F

Property	Conditions	Value	Units
Hardness	Shore D	85	
Tensile Strength	ASTM D638	5,050	psi
Tensile Modulus	ASTM D638	93,000	psi
Elongation	ASTM D638	5	%
Glass Transition Temp. (Tg)	DSC	57	°C
Coefficient of Thermal Expansion	Below Tg Above Tg	50 155	ppm/°C ppm/°C
Thermal Conductivity	ASTM C518	0.4	w/m·K

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Typical Electrical Properties

Specimens cure 24 hours at 25°C / 77°F + 16 hours at 60°C / 140°F

Property	Conditions	Value	Units
Dielectric Strength - ASTM D149	25°C / 77°C (50 mils)	580	volts/mil
Dielectric Strength - ASTM D149	25°C / 77°C (50 mils) After 24 hours in water	560	volts/mil
Dissipation Factor - ASTM D150	1 kHz – 25°C / 77°F 1 kHz – 100°C / 212°F 1 kHz – 150°C / 302°F	0.01 0.06 0.21	
Dielectric Constant - ASTM D150	1 kHz – 25°C / 77°F 1 kHz – 100°C / 212°F 1 kHz – 150°C / 302°F	3.5 4.7 6.8	
Volume Resistivity - ASTM D257	25°C / 77°F	4.2×10^{15}	ohm-cm

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