

**Technical Data Sheet**

**Electronic & Engineering Materials**

**ELAN-Cast<sup>®</sup> E 471-5LL FR Black Resin**  
**ELAN-Cast<sup>®</sup> C 471-5LL Hardener**

**Two-Component Epoxy Potting Compound**

## ELAN-Cast<sup>®</sup> E 471-5LL FR Black Epoxy

### Product Description

ELAN-Cast<sup>®</sup> E 471-5LL FR Black is a two-component, room temperature curing, 100%-solids epoxy resin system.

### Areas of Application

Potting and sealing of electrical and electronic equipment

### Features and Benefits

- Low stress, low exotherm cure
- UL 94 V0 Listed - 2.9 mm
- Low shrinkage
- Long pot life

### Application Methods

- Bench casting
- Meter-Mix

### 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 the 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.

See ELANTAS PDG Technical Bulletin *TI-100 - Handling Precautions for Epoxy Resins*.

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### Typical Properties of Material as Supplied

Property	Conditions	Value		Units
		ELAN-Cast <sup>®</sup> E 471-5LL FR Black Resin	ELAN-Cast <sup>®</sup> C 471-5LL Hardener	
Viscosity	25°C / 77°F	12,500 - 25,000	20 – 50	cP
Color		Black	Amber	
Weight per Gallon	25°C / 77°F	13.8 - 14.0	7.8 – 8.2	pounds
Flash Point	ASTM D93	> 94 > 201	90 194	°C °F
Mix Ratio	Parts by weight Parts by volume	100 100	15 26	

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### Typical Properties of Mixed Materials

Property	Conditions	Value	Units
Viscosity	25°C / 77°F	2,000 - 3,000	cP
Gel Time	25°C / 77°F – 150 grams	6 - 10	hours

### Curing Schedule

Mixed resin will cure for handling purposes within 24 - 72 hours at room temperature and will develop full properties after seven days.

Alternatively, the resin may be cured for 4 hours at 80°C after it has gelled. Room temperature cure is recommended for minimal stress on components.

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

Property	Conditions	Value	Units
Hardness	Shore D	80	
Tensile Strength	ASTM D229	5,700	psi
Elongation at Break	ASTM D229	5	%
Flexural Strength	ASTM D790	17,000	psi
Glass Transition Temperature (Tg)		50	°C
Coefficient of Thermal Expansion	Below Tg	40	ppm/°C
	Above Tg	195	ppm/°C
Thermal Conductivity		0.5	w/m-K
Water Absorption	168 hours @ 25°C / 77°F	0.4	%
Weight Loss	168 hours @ 135°C / 275°F	0.5	%

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### Typical Electrical Properties

Property	Conditions	Value	Units
Dielectric Strength	ASTM D149 – 125 mils	510	volts/mil
Dielectric Strength	ASTM D149 – 125 mils After 24 hours in water	480	volts/mil
Volume Resistivity	ASTM D257 – 25°C / 77°C	1.5 x 10 <sup>14</sup>	ohm-cm
Dielectric Constant	1 kHz – 25°C / 77°F	4.2	
Dissipation Factor	1 kHz – 25°C / 77°F	0.03	

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.