

**Technical Data Sheet**

**Electronic & Engineering Materials**

## **EpoxyLite<sup>®</sup> E 810-1 Hi Temp**

**Three-Component Epoxy Adhesive**

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## Epoxylite® E 810-1 Hi Temp Epoxy

### Product Description

Epoxylite® E 810-1 Hi Temp Epoxy is a heat-cured, three-component system consisting of a viscous liquid resin, a finely divided powder hardener and a liquid accelerator. It is provided in pre-measured kits.

The liquid accelerator enables the system to set quickly at room temperature for part placement prior to a final heat cure.

### Areas of Application

High temperature sealant and adhesive for metal-to-metal bonds

### Features and Benefits

- Maintains excellent electrical properties and maintains non-load bearing seals to at least 260°C / 500°F for short durations.
- Suitable for continuous service in most applications up to 200°C / 392°F
- Excellent adhesion to metals, ceramics and most plastics
- Resistant to acids, alkalis and solvents.

### Application Methods

- Spatula / Wire-wrapped Rod

### 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 the product as recommended above may lead to deterioration in product performance.

This product is sensitive to moisture and atmospheric humidity. Containers, once opened, should be used immediately or blanketed with dry nitrogen before resealing.

Mix individual components thoroughly before use.

### Health / Safety

Refer to the Safety Data Sheet.

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

### Typical Properties of Material as Supplied

Property	Conditions	Value			Units
		Epoxylite® E 810-1 Hi Temp Resin	Epoxylite® C 810-1 Hi Temp Hardener	Epoxylite® C 810-1 Hi Temp Accelerator	
Viscosity / Form	25°C / 77°F	10,000 - 30,000	Powder	50 – 150	cP
Weight per Gallon	25°C / 77°F	9.6 – 10.0	20.0 – 20.6	9.3 – 9.7	pounds
Flash Point	ASTM D93	> 94 > 201	> 94 > 201	74 165	°C °F
Mix Ratio	Parts by weight	100	125	11	

## Epoxylite® E 810-1 Hi Temp Epoxy

### Regulatory Information

Property	Test Method	Value	Units
Volatile Organic Content	ASTM D6053	0.2 <sup>[1]</sup>	pounds / gallon
RoHS Compliance	Epoxylite® E 810-1 Hi Temp Resin, Epoxylite® C 810-1 Hi Temp Hardener and Epoxylite® C 810-1 Hi Temp Accelerator comply with Directive 2011/65/EU of the European Parliament and of the Council of 8 June 2011 (RoHS 2.0) as amended 31 March 2015.		

<sup>[1]</sup> VOC test methods and limits vary widely by regulatory jurisdiction and product application. The value above was obtained by curing a thin film under specific laboratory conditions (2 grams - 1 hour - 150°C). Contact your ELANTAS PDG representative regarding alternate methods.

### Mixing / Application

Mix the Hardener into the Resin with mechanical agitation until homogeneous (approximately three minutes). It is critical to achieve a complete, homogeneous mixture.

**Do not use less than the prepackaged amounts of Resin and Hardener as the Hardener is a dry mixture and may vary in composition within the container.**

The mixture of Resin and Hardener will have a working time of approximately 45 minutes before the addition of Epoxylite® C 810-1 Hi Temp Accelerator.

When ready to apply, quickly add and thoroughly mix in the Accelerator per the ratio above. **Do not add Accelerator to more mixture than can be used immediately for the job at hand.** The mixture will begin to set within 3 - 5 minutes and will become extremely hot. Do not use more than the amount of Accelerator supplied to avoid a violent exothermic reaction.

A lesser amount of Accelerator will provide a longer time to set:

50% of kit amount	8 – 12 minutes
10% of kit amount	15 – 25 minutes

Once applied, the mixture will start to harden within 30 – 60 minutes. Metal surfaces acting as a heat sink may slow the hardening process.

### Curing Schedule

For non-load bearing applications, allow to cure for 24 hours at room temperature.

A post-cure of 4 hours at 121°C / 250°F – or – 2 hours at 150°C / 302°F is necessary to develop full properties. Heat lamps may be used in place of a curing oven.

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.

NOTE: Proper surface preparation is critical to obtaining optimum product performance. See ELANTAS PDG Technical Bulletin TI-3000 *Surface Preparation Recommendations*.

Epoxylite® E 810-1 Hi Temp Epoxy is highly adhesive. Surfaces that may come into accidental contact with it during processing should be pretreated with a suitable release agent.

## Epoxylite® E 810-1 Hi Temp Epoxy

### Typical Mechanical Properties – specimens cured 4 hours at 121°C / 250°F

Property	Method	Conditions	Value	Units
Shore Hardness	ASTM D2240	25°C / 77°F	D 90	
Lap Shear Strength Aluminum to aluminum	ASTM D1002	25°C / 77°F	1,700	psi
Tensile Strength	ASTM D638	25°C / 77°F	2,300	psi
Compressive Strength	ASTM D695	25°C / 77°F	40,000	psi

### Typical Electrical Properties

Property	Method	Conditions	Value	Units
Dielectric Strength	ASTM D149	25°C / 77°F – 125 mils	560	volts/mil
Dielectric Constant	ASTM D150	60 Hz – 25°C / 77°F	4.4	
Dissipation Factor	ASTM D150	60 Hz – 25°C / 77°F	0.005	
Volume Resistivity	ASTM D257	25°C / 77°F	4 x 10 <sup>15</sup>	ohm-cm

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

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