

Technical Data Sheet

Electrical Insulation Materials

CONAPOXY® FR-1080

Two-Component Epoxy Potting Compound

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CONAPOXY® FR-1080

Product Description

CONAPOXY® FR-1080 is a two-component, unfilled epoxy potting system.

Areas of Application

Potting and encapsulation of electrical / electronic devices such as modules, transformers, and coils as well as strain sensitive applications.

Features and Benefits

- Class H (180°C) rated
- Long work life
- Elevated temperature cure

Application Methods

- Hand-mix bench potting / casting
- Meter-mix bench potting / casting
- Meter-mix vacuum potting / casting

Transportation / Storage

Store at or 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.

This product is sensitive to moisture and atmospheric humidity. Containers, once opened, should be used immediately or blanketed with dry air or nitrogen (CONAP® Dri-Purge) before resealing.

Mix and degas individual components thoroughly, prior to use.

Health / Safety

Refer to the Safety Data Sheet.

See ELANTAS PDG Technical Bulletins *TI-100 - Handling Precautions for Epoxy Resins* and *TI-4005 - Epoxy Reaction Potential Hazards* for additional information.

Typical Properties of Material as Supplied

Property	Conditions	Value	
		CONAPOXY® FR-1080 Part A Resin	CONAPOXY® FR-1080 Part B Hardener
Viscosity	25°C / 77°F	4,000 cP	300 cP
Specific Gravity	25°C / 77°F	1.03	1.23
Color		amber	dark brown
Mix Ratio	Parts by weight Parts by volume	100 100	83 67
Flash Point	ASTM D93	>94°C >201°F	>94°C >201°F

CONAPOXY® FR-1080

Typical Properties of Mixed Materials

Property	Conditions	Value	Units
Viscosity (initial)	25°C / 77°F	2,500	cP
Work Life	25°C / 77°F	>1	hours
Gel Time	100°C / 77°F	1 – 2	hours

Application / Curing Schedule

Mix the CONAPOXY® FR-1080 Part A Resin and FR-1080 Part B Hardener in the ratio specified above until homogeneous. Components may be preheated up to 60°C if reduced viscosity is required. If hand-mixing, degas at >27 in. Hg vacuum before use.

Cure 4 - 16 hours at 120°C / 248°F and post cure 2 hours at 180°C / 356°F for maximum properties.

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

Typical Physical Properties

Property	Test Method	Conditions	Value	Units
Shore Hardness	ASTM D2240	25°C / 77°F	D 90	
Tensile Strength	ASTM D412	25°C / 77°F	8,200	psi
Ultimate Elongation	ASTM D412	25°C / 77°F	2	%
Tear Strength	ASTM D412	25°C / 77°F	250	pli
Flexural Strength	ASTM D790	25°C / 77°F	12,800	psi
Flexural Modulus	ASTM D790	25°C / 77°F	390,000	psi
Compressive Strength	ASTM D695	25°C / 77°F	4,200	psi
Linear Shrinkage	ASTM D2566	25°C / 77°F	1.4	%

CONAPOXY® FR-1080**Typical Electrical Properties**

Property	Test Method	Conditions	Value	Units
Dielectric Strength	ASTM D149	1/16" - 25°C / 77°F	600	volts / mil
		1/16" - 105°C / 221°F	450	volts / mil
Dielectric Constant	ASTM D150	1 kHz @ 25°C / 77°F	3.1	
		1 kHz @ 105°C / 221°F	3.3	
Dissipation Factor	ASTM D150	1 kHz @ 25°C / 77°F	0.004	
		1 kHz @ 105°C / 221°F	0.004	
Volume Resistivity	ASTM D257	1 kHz @ 25°C / 77°F	9.7×10^{16}	ohm-cm
		1 kHz @ 105°C / 221°F	2.9×10^{14}	ohm-cm
Surface Resistivity	ASTM D257	1 kHz @ 25°C / 77°F	5.5×10^{16}	ohm
		1 kHz @ 105°C / 221°F	5.7×10^{14}	ohm

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

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