

Technical Data Sheet

Electrical Insulation

CONAPOXY® FR-1830

Two-Component Epoxy Potting Compound



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CONAPOXY® FR-1830

Product Description

CONAPOXY® FR-1830 is a two-component, mineral-filled, flame-retardant epoxy potting system.

Areas of Application

Potting and encapsulation of electronic components, modules, circuit boards, assemblies and related devices.

Features and Benefits

- UL94 V-0
- Low viscosity
- Non-abrasive filler for reduced wear of equipment

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.

CONAPOXY® FR-1830 Part A Resin contains fillers and should be well mixed prior to use until the filler is redistributed homogeneously.

Health / Safety

Refer to the Safety Data Sheet.

Typical Properties of Material as Supplied

Property	Conditions	Value	
		CONAPOXY® FR-1830 Part A Resin	CONAPOXY® FR-1830 Part B Hardener
Viscosity	25°C / 77°F	14,000 cP	85 cP
Specific Gravity	25°C / 77°F	1.59	0.97
Color		Black	Amber
Mix Ratio	Parts by weight Parts by volume	100 100	20 33
Flash Point	ASTM D93	> 94°C > 201°F	> 94°C > 201°F

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Typical Properties of Mixed Materials

Property	Conditions	Value	Units
Viscosity (initial)	25°C / 77°F	2,200	cP
Work Life (100,000 cP)	150 g @ 25°C / 77°F	50	minutes
Peak Exotherm	225 g @ 25°C / 77°F	73 164	°C °F

Regulatory Information

Property	
RoHS Compliance	CONAPOXY® FR-1830 Part A Resin and CONAPOXY® FR-1830 Part B Hardener 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.

Application / Curing Schedule

Mix the FR-1830 Part A and FR-1830 Part B 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 24 - 36 hours at 25°C / 77°F for maximum properties. Alternatively, cure 3 – 4 hours @ 60°C / 140°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 Electrical Properties

Property	Test Method	Conditions	Value	Units
Dielectric Strength	ASTM D149	25°C / 77°F - 1/16"	510	volts / mil
Dielectric Constant	ASTM D150	100 Hz @ 25°C / 77°F	4.4	
		1 kHz @ 25°C / 77°F	4.1	
		1 MHz @ 25°C / 77°F	3.8	
Dissipation Factor	ASTM D150	100 Hz @ 25°C / 77°F	0.04	
		1 kHz @ 25°C / 77°F	0.02	
		1 MHz @ 25°C / 77°F	0.02	
Volume Resistivity	ASTM D257	25°C / 77°F	6.9 x 10 ¹⁴	ohm-cm
Surface Resistivity	ASTM D257	25°C / 77°F	2.0 x 10 ¹⁵	ohm

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Typical Physical Properties

Property	Test Method	Conditions	Value	Units
Color		25°C / 77°F	Black	
Shore Hardness	ASTM D2240	25°C / 77°F	D 80	
Tensile Strength	ASTM D412	25°C / 77°F	5200	psi
Linear Shrinkage	ASTM D2566	25°C / 77°F	0.1	%
Moisture Absorption	ASTM D570	after 24 h @ 25°C	0.3	%
Flammability	UL94	4.8 mm	V-0	
Thermal Conductivity	ASTM D5930		0.5	W / m·K

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

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