Technical Data Sheet

Electrical Insulation

CONAPOXY® FR-1810

Two-Component Epoxy Potting Compound

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CONAPOXY® FR-1810

Product Description

CONAPOXY® FR-1810 is a two-component, filled, flame-retardant epoxy potting system.

It consists of CONAPOXY® FR-1810 Part A Resin and CONAPOXY® FR-1810 Part B Hardener.

Areas of Application

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

Features and Benefits

- UL94 V-0
- Cartridge-friendly 1:1 volume ratio
- Non-abrasive filler for reduced wear of equipment
- High elongation for reduced stress on components

Application Methods

- Hand-mix Bench Potting / Casting
- Meter-mix Bench Potting / Casting
- Meter-mix Vacuum Potting / Casting

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.

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-1810 Part A Resin and CONAPOXY® FR-1810 Part B Hardener contain fillers that must be redistributed homogeneously.

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-1810 Part A Resin	**CONAPOXY® FR-1810 Part B Hardener**
Viscosity	25°C / 77°F	7,000 cP	14,000 cP
Specific Gravity	25°C / 77°F	1.55	1.54
Color		Black	Tan
Mix Ratio	Parts by weight Parts by volume	100 100	100 100
Flash Point	ASTM D93	>94°C >201°F	>94°C >201°F

CONAPOXY® FR-1810

Typical Properties of Mixed Materials

Property	Conditions	Value	Units
Viscosity (initial)	25°C / 77°F	8,000	cP
Work Life (100,000 cP)	200 g @ 25°C / 77°F	80	minutes
Gel Time	200 g @ 25°C / 77°F	130	minutes
Peak Exotherm	225 g @ 25°C / 77°F	36 97	°C °F

Regulatory Information

RoHS Compliance	CONAPOXY® FR-1810 Part A Resin and CONAPOXY® FR-1810 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 FR-1810 Part A and FR-1810 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 before use.

Cure 32 - 48 hours at 25°C / 77°F for maximum properties **– or –** 3 – 4 hours @ 80°C / 176°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”	530	volts / mil
Dielectric Constant	ASTM D150	100 Hz @ 25°C / 77°F 1 kHz @ 25°C / 77°F 1 MHZ @ 25°C / 77°F	4.8 4.4 3.9	
Dissipation Factor	ASTM D150	100 Hz @ 25°C / 77°F 1 kHz @ 25°C / 77°F 1 MHZ @ 25°C / 77°F	0.03 0.04 0.02	
Volume Resistivity	ASTM D257	25°C / 77°F	7.1×10^{13}	ohm-cm
Surface Resistivity	ASTM D257	25°C / 77°F	4.7×10^{15}	ohm

CONAPOXY® FR-1810

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	1300	psi
Elongation	ASTM D412	25°C / 77°F	22	%
Linear Shrinkage	ASTM D2566	25°C / 77°F	0.06	%
Moisture Absorption	ASTM D570	24 h @ 25°C	0.41	%
Flammability	UL94	4.8 mm	V-0	
Thermal Conductivity	ASTM D5930		0.7	W / m·K

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 an article and no such representation should be relied upon.