

Technical Data Sheet

Electrical Insulation

CONATHANE® EN-2521

Two-Component Polyurethane Potting Compound

ELANTAS PDG, Inc.

1405 Buffalo Street
Olean, NY 14760
USA
Tel +1 716 372-9650
Fax +1 716 372-1594
info.elantas.pdg@altana.com
www.elantas.com

5200 North Second Street
St. Louis, MO 63147
USA
Tel +1 314 621-5700
Fax +1 314 436-1030
info.elantas.pdg@altana.com
www.elantas.com

CONATHANE® EN-2521

Product Description

CONATHANE® EN-2521 is a two-component, mineral-filled, polyurethane potting system.

Areas of Application

Potting and encapsulation of electronic components, modules, strain sensitive circuitry, transformers and coils.

Features and Benefits

- UL RTI 120 ^[1]
- UL94 HB ^[1]
- Low stress cure for protection of sensitive components
- Excellent moisture and thermal shock resistance
- Room temperature or low heat cure

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® EN-2521 Part B contains filler that must be redistributed homogeneously.

Health / Safety

Refer to the Safety Data Sheet.

Typical Properties of Material as Supplied

Property	Conditions	Value	
		CONATHANE® EN-2521 Part A Urethane Prepolymer	CONATHANE® EN-2521 Part B Curative
Viscosity	25°C / 77°F	200 cP	8,500 cP
Specific Gravity	25°C / 77°F	1.24	1.55
Color		Brown	Tan or Black
Mix Ratio	Parts by weight	20	100
	Parts by volume	24	100

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Typical Properties of Mixed Materials

Property	Conditions	Value	Units
Viscosity (initial)	25°C / 77°F	4,000	cP
	60°C / 140°F	2,800	cP
Work Life (450 g / 1 lb.)	25°C / 77°F	80	minutes
	60°C / 140°F	15	minutes
Peak Exotherm	25°C / 77°F	45	°C
	60°C / 140°F	96	°C

Regulatory Information

Property	
RoHS Compliance	CONATHANE® EN-2521 Part A Urethane Prepolymer and CONATHANE® EN-2521 Part B Curative 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 EN-2521 Part A and EN-2521 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 > 690 mm (27 in.) Hg vacuum before use.

Cure 7 days at 25°C / 77°F – or – 16 hours at 80°C / 176°F

Demold time 8 – 10 hours at 25°C / 77°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 – 60 mils	650	volts / mil
Arc Resistance	ASTM D495		130	seconds
Insulation Resistance	ASTM D257	25°C / 77°F	2.6 x 10 ¹³	ohms
		90°C / 194°F	2.6 x 10 ¹⁰	
Volume Resistivity	ASTM D257	25°C / 77°F	3.4 x 10 ¹³	ohm-cm
Surface Resistivity	ASTM D257	25°C / 77°F	1.5 x 10 ¹³	ohms / sq.

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Typical Electrical Properties (cont.)

Property	Test Method	Conditions	Value	Units
Dielectric Constant	ASTM D150	100 Hz @ 25°C / 77°F	4.8	
		1 kHz @ 25°C / 77°F	4.3	
		1MHz @ 25°C / 77°F	3.7	
Dissipation Factor	ASTM D150	100 Hz @ 25°C / 77°F	0.07	
		1 kHz @ 25°C / 77°F	0.05	
		1MHz @ 25°C / 77°F	0.02	

Typical Physical Properties

Property	Test Method	Conditions	Value	Units
Color	Visual	25°C / 77°F	Tan or Black	
Specific Gravity		25°C / 77°F	1.53	
Shore Hardness	ASTM D2240	25°C / 77°F	D 65	
Tensile Strength	ASTM D412	25°C / 77°F	1,600	psi
Ultimate Elongation	ASTM D412	25°C / 77°F	40	%
Linear Shrinkage		25°C / 77°F	0.7	%
Coefficient of Thermal Expansion	ASTM E831		160	ppm / °C
Thermal Shock Resistance		-65°C to 130°C	pass 10	cycles
Thermal Conductivity	ASTM D5930		0.3	W / m·K
Water Absorption	ASTM D570	24 h @ 25°C / 77°F	+ 0.19	%
		7 d @ 25°C / 77°F	+ 0.55	%
		60 d @ 25°C / 77°F	+ 0.94	%
Fungus Resistance	MIL-STD-810B		Non-nutrient	
Flammability	UL94	1.5 mm	HB	
Comparative Tracking Index	UL746	> 600 drops	PLC 0	

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

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