Technical Data Sheet

Electronic Coating Materials

CONATHANE® EN-5310

(Formerly CONATHANE® DPEN-22400)

Two-Component Polyurethane Potting Compound

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CONATHANE® EN-5310

Product Description

CONATHANE® EN-5310 is a two-component, unfilled polyurethane system.

Areas of Application

Potting and encapsulation of electrical and electronic assemblies.

Features and Benefits

- Re-enterable
- UL94 V-2 flame rating
- Wide range of acceptable mix ratios, including 1:1 by volume
- Provides moisture and vibration protection

Application Methods

- Hand-mix bench potting / casting
- Cartridge-dispensed 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 before resealing.

CONATHANE® EN-5310 Part A may crystallize upon storage or during shipment. If this has occurred, heat to 60°C, mix thoroughly, and cool to room temperature before processing.

Health / Safety

Refer to the Safety Data Sheet.

Typical Properties of Material as Supplied

Property	Conditions	Value	
		CONATHANE® EN-5310 Part A Urethane Prepolymer	**CONATHANE® EN-5310 Part B Curative**
Viscosity	25°C / 77°F	8,100 cP	350 cP
Specific Gravity	25°C / 77°F	1.14	0.97
Appearance		amber	light amber or black
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	3,000	cP
Work Life	25°C / 77°F	10 - 20	minutes

Application / Curing Schedule

Combine CONATHANE® EN-5310 Part A and EN-5310 Part B in the ratio specified. The two components should be mixed thoroughly in metal or glass containers using metal or glass stirrers. Degassing of the mixed system should be accomplished at room temperature at >27 in. Hg vacuum. Containers should be large enough to allow for frothing during the degassing process.

Cure 5 – 7 days 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 their application.

Typical Physical Properties @ 25°C / 77°F

Property	Test Method	Value				Units
Mix Ratio	Weight (A / B) Volume (A / B)	100 / 140 100 / 165	100 / 126 100 / 150	100 / 110 100 / 130	100 / 80 100 / 94	
Shore Hardness	ASTM D2240	A 17	A 30	A 45	A 55	
Tensile Strength	ASTM D412	240	360	390	550	psi
Ultimate Elongation	ASTM D412	170	140	90	85	%
Tear Strength	ASTM D624	13.6	18.5	21.5	19.2	pli
Water Absorption	24 h @ 25°C 7 d @ 25°C	0.60 0.83	0.56 0.80	0.55 0.79	0.49 0.74	% %

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Typical Electrical Properties @ 25°C / 77°F

Property	Test Method	Value				Units
Mix Ratio	Weight (A / B) Volume (A / B)	100 / 140 100 / 165	100 / 126 100 / 150	100 / 110 100 / 130	100 / 80 100 / 94	
Dielectric Strength	ASTM D149	490	510	500	500	volts / mil
Dielectric Constant ASTM D150	100 Hz 1 kHz 1 MHz	6.4 5.8 3.5	6.5 5.8 3.4	6.7 5.8 3.4	6.8 5.5 3.3	
Dissipation Factor ASTM D150	100 Hz 1 kHz 1 MHz	0.10 0.06 0.10	0.10 0.07 0.09	0.09 0.10 0.08	0.11 0.13 0.07	
Volume Resistivity	ASTM D257	9.5×10^{10}	1.4×10^{11}	2.8×10^{11}	4.1×10^{11}	ohm-cm
Surface Resistivity	ASTM D257	2.8×10^{12}	5.9×10^{12}	5.6×10^{12}	2.4×10^{13}	ohms

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.