Technical Data Sheet

Electronic & Engineering Materials

CONATHANE® EN-3010

Two-Component Polyurethane Potting Compound

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CONATHANE® EN-3010

Product Description

CONATHANE® EN-3010 is a two-component, filled, polyurethane system.

Areas of Application

Potting and encapsulating surface mount technology electrical and electronic assemblies.

Features and Benefits

- UL 94 V-0 flame rating
- Cartridge friendly 1:2 mix ratio by volume
- Low stress potting for surface mount technology (SMT)

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 20 – 30°C / 68 – 85°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. CONATHANE® EN-3010 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-3010 Part A Urethane Prepolymer	**CONATHANE® EN-3010 Part B Curative**
Viscosity	25°C / 77°F	3,000 cP	18,000 cP
Specific Gravity	25°C / 77°F	1.30	1.60
Appearance		Amber	Black
Mix Ratio	Parts by weight Parts by volume	40 50	100 100
Flashpoint	ASTM D93	> 100°C > 212°F	> 100°C > 212°F

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Typical Properties of Mixed Materials

Property	Conditions	Value	Units
Mixed Viscosity (initial)	25°C / 77°F	5,000	cP
Work Life	25°C / 77°F	20 - 30	minutes

Application / Curing Schedule

Combine EN-3010 Part A and EN-3010 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 7 – 10 days at 25°C / 77°F – or – 16 hours at 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 their application.

Typical Physical Properties

Property	Test Method	Conditions	Value	Units
Color	Visual	25°C / 77°F	Black	
Shore Hardness	ASTM D2240	25°C / 77°F	A 70	
Tensile Strength	ASTM D412	25°C / 77°F 100% modulus	1050 840	psi psi
Ultimate Elongation	ASTM D412	25°C / 77°F	165	%
Tear Strength	ASTM D624	25°C / 77°F	110	pli
Linear Shrinkage	MIL-M-24041C		0.13	%
Thermal Conductivity			0.4	W/m-K
Flammability	UL94	6.3 mm	V-0	

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Typical Electrical Properties

Property	Test Method	Conditions	Value	Units
Dielectric Strength	ASTM D149	25°C / 77°F - 1/16"	685	volts / mil
Dielectric Constant	ASTM D150	100 Hz @ 25°C / 77°F 1 kHz @ 25°C / 77°F 1 MHZ @ 25°C / 77°F	6.8 6.3 4.4	
Dissipation Factor	ASTM D150	100 Hz @ 25°C / 77°F 1 kHz @ 25°C / 77°F 1 MHZ @ 25°C / 77°F	0.05 0.06 0.08	
Volume Resistivity	ASTM D257	25°C / 77°F	1.5×10^{14}	ohm-cm
Surface Resistivity	ASTM D257	25°C / 77°F	6.2×10^{15}	ohm

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.