

**Technical Data Sheet**

**Electrical Insulation**

## **CONATHANE® EN-2551**

**Two-Component Polyurethane Potting Compound**

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## CONATHANE® EN-2551

### Product Description

CONATHANE® EN-2551 is a two-component, filled, flame-retardant polyurethane potting system.

### Areas of Application

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

### Features and Benefits

- UL RTI 120
- UL94 V-0
- Low stress cure for protection of sensitive components
- Excellent thermal shock resistance

### 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.

CONATHANE® EN-2551 Part A may crystallize upon storage or during shipment. If this has occurred, heat to 60°C / 140°F, 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-2551 Part A Urethane Prepolymer	CONATHANE® EN-2551 Part B Curative
Viscosity	25°C / 77°F	300 cP	8,500 cP
Specific Gravity	25°C / 77°F	1.24	1.48
Color		Brown	Black or Blue
Mix Ratio	Parts by weight	17	100
	Parts by volume	20	100

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### Typical Properties of Mixed Materials

Property	Conditions	Value	Units
Viscosity (initial)	25°C / 77°F	4,500	cP
Gel Time	25°C / 77°F	4 - 7	minutes

### Regulatory Information

Property	
RoHS Compliance	CONATHANE® EN-2551 Part A Urethane Prepolymer and CONATHANE® EN-2551 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-2551 Part A and EN-2551 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 7 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 his application.

### Typical Electrical Properties

Property	Test Method	Conditions	Value	Units
Dielectric Strength	ASTM D149	25°C / 77°F	585	volts / mil
Dielectric Constant	ASTM D150	1 kHz @ 25°C / 77°F	4.0	
Dissipation Factor	ASTM D150	100 Hz @ 25°C / 77°F 1 kHz @ 25°C / 77°F	0.18 0.05	
Arc Resistance	ASTM D495		>120	seconds
Insulation Resistance	ASTM D257	25°C / 77°F	8.6 x 10 <sup>12</sup>	ohms
Volume Resistivity	ASTM D257	25°C / 77°F	6.8 x 10 <sup>13</sup>	ohm-cm
Surface Resistivity	ASTM D257	25°C / 77°F	2.8 x 10 <sup>17</sup>	ohms / sq.

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### Typical Physical Properties

Property	Test Method	Conditions	Value	Units
Color	Visual	25°C / 77°F	Black or Blue	
Specific Gravity		25°C / 77°F	1.47	
Shore Hardness	ASTM D2240	25°C / 77°F	A 95	
Tensile Strength	ASTM D412	25°C / 77°F	1,025	psi
Ultimate Elongation	ASTM D412	25°C / 77°F	39	%
Tear Strength	ASTM D624	25°C / 77°F	155	pli
Lap Shear		Aluminum	300	psi
Linear Shrinkage		25°C / 77°F	< 1	%
Coefficient of Thermal Expansion	ASTM E831		118	ppm / °C
Water Absorption	ASTM D570	24 h @ 25°C / 77°F 7 d @ 25°C / 77°F	0.06 0.15	% %
Thermal Conductivity	ASTM D5930		0.65	W / m·K
Fungus Resistance	MIL-STD-810B		Non-nutrient	
Flammability	UL94	3.0 mm	V-0	

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

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