

CONATHANE® EN-2521

Polyurethane

Cytec Industries Inc.

Message:

CONATHANE EN-2521 is a two-part filled polyurethane resin system. The system features good handling properties and working life. EN-2521 can be cured at room or elevated temperatures without the formation of voids. The cured compound has excellent water resistance and is exceptionally resistant to thermal shock. Other outstanding properties of this system include low exotherm, very low stresses during cure, low shrinkage, and very good electrical properties.

CONATHANE EN-2521 is recommended for potting applications where exceptional performance in the temperature range of -65°C to 130°C is required. It is particularly useful in the encapsulation of modules, strain sensitive circuitry, transformers, and coils.

General Information		
UL YellowCard	E69804-249048	
Features	Good Electrical Properties	
	Good Processability	
	Good Thermal Shock Resistance	
	Low Exotherm	
	Low Shrinkage	
Uses	Electrical Parts	
	Electrical/Electronic Applications	
Agency Ratings	MIL E-5272C	
	MIL Std. 810B	
Appearance	Black	
	Tan	
Forms	Liquid	
Processing Method	Encapsulating	
	Potting	
Physical	Nominal Value	Unit
Specific Gravity		
-- ¹	1.10 to 1.30	g/cm ³
-- ²	1.53	g/cm ³
-- ³	1.40 to 1.70	g/cm ³
Water Absorption		
24 hour immersion : 25°C	0.19	%
60 day immersion : 25°C	0.94	%
7 day immersion : 25°C	0.55	%
Solids Content		

-- 4	100	%	
-- 5	100	%	
Heat Stability			
% Wt. Loss after 7 days @ 130°C	0.24	%	
% Wt. Loss after 7 days @ 155°C	0.59	%	
Fungal Resistance	Non-nutrient		
Isocyanate Content ⁶	30 to 32	%	
Thermal Shock Test - 10 cycles, -65°C to 130°C	passes		
Work Life - 1 lb. mass			
25°C	1.3	hr	
60°C	0.3	hr	
Linear Shrinkage	0.71	%	
Hardness	Nominal Value	Unit	
Durometer Hardness (Shore D)	65		
Mechanical	Nominal Value	Unit	
Tensile Strength	11.0	MPa	
Tensile Elongation (Break)	40	%	
Thermal	Nominal Value	Unit	
CLTE - Flow	1.6E-4	cm/cm/°C	
Thermal Conductivity	0.27	W/m/K	
Electrical	Nominal Value	Unit	Test Method
Surface Resistivity			
-- 7	5.8E+9	ohms	
-- 8	3.9E+11	ohms	
-- 9	4.6E+13	ohms	
Volume Resistivity			
25°C	1.2E+14	ohms · cm	
60°C	9.0E+11	ohms · cm	
90°C	1.7E+10	ohms · cm	
Dielectric Strength			
1.59 mm	26	kV/mm	
3.18 mm	> 16	kV/mm	
Dielectric Constant			
25°C, 100 Hz	4.80		
25°C, 1 kHz	4.30		
25°C, 1 MHz	3.70		
60°C, 100 Hz	7.40		
60°C, 1 kHz	6.50		
60°C, 1 MHz	4.00		
90°C, 100 Hz	6.90		
90°C, 1 kHz	7.90		

90°C, 1 MHz	4.40		
Dissipation Factor			
25°C, 100 Hz	0.072		
25°C, 1 kHz	0.045		
25°C, 1 MHz	0.016		
60°C, 100 Hz	0.14		
60°C, 1 kHz	0.16		
60°C, 1 MHz	0.043		
90°C, 100 Hz	0.19		
90°C, 1 kHz	0.24		
90°C, 1 MHz	0.082		
Arc Resistance	130	sec	
Comparative Tracking Index (CTI)	> 600	V	UL 746
Comparative Tracking Index (CTI)	PLC 0		UL 746
Flammability	Nominal Value	Unit	Test Method
Flame Rating	HB		UL 94
Thermoset	Nominal Value	Unit	
Thermoset Components			
Hardener	Mix Ratio by Weight: 100		
Resin	Mix Ratio by Weight: 20		
Thermoset Mix Viscosity			
25°C ¹⁰	4000	cP	
25°C ¹¹	12000	cP	
25°C ¹²	200	cP	
60°C ¹³	2800	cP	
Demold Time (25°C)	480 to 600	min	
NOTE			
1.	Resin		
2.	Mix		
3.	Hardener		
4.	Resin		
5.	Hardener		
6.	Resin		
7.	90°C		
8.	60°C		
9.	25°C		
10.	Mix		
11.	Hardener		
12.	Resin		
13.	Mix		

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