

CONATHANE® EN-2523

Polyurethane

Cytec Industries Inc.

Message:

CONATHANE EN-2523 is a two-part filled polyurethane casting system. It consists of two low viscosity liquids that have low vapor pressure and good handling properties at room temperature. CONATHANE EN-2523 can be cured at room or elevated temperatures without the formation of voids. Low exotherm, low stress build-up during cure, low shrinkage, and excellent electrical properties are other outstanding features of this system. CONATHANE EN-2523 is recommended for potting electrical and electronic devices that are subjected to conditions of extreme thermal shock and exposure to adverse environments. The low viscosity of the system permits thorough impregnation of electrical and electronic assemblies.

General Information		
UL YellowCard	E69804-249049	
Features	Fungus Resistant	
	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	1.24	g/cm ³
-- 2	1.44	g/cm ³
-- 3	1.46	g/cm ³
Water Absorption		
24 hour immersion : 25°C	0.14	%
60 day immersion : 25°C	0.83	%
7 day immersion : 25°C	0.45	%

Solids Content			
-- 4	100	%	
-- 5	100	%	
Heat Stability			
% Wt. Loss after 7 days @ 130°C	0.19	%	
% Wt. Loss after 7 days @ 155°C	0.52	%	
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	50.0	min	
60°C	10.0	min	
Linear Shrinkage	0.59	%	
Hardness	Nominal Value	Unit	
Durometer Hardness (Shore D)	50		
Mechanical	Nominal Value	Unit	
Tensile Strength	11.0	MPa	
Tensile Elongation (Break)	50	%	
Thermal	Nominal Value	Unit	
CLTE - Flow	1.5E-4	cm/cm/°C	
Thermal Conductivity	0.19	W/m/K	
Electrical	Nominal Value	Unit	Test Method
Surface Resistivity			
-- 7	1.1E+11	ohms	
-- 8	1.3E+12	ohms	
-- 9	1.5E+13	ohms	
Volume Resistivity			
25°C	3.4E+13	ohms · cm	
60°C	3.7E+12	ohms · cm	
90°C	3.4E+11	ohms · cm	
Dielectric Strength			
1.59 mm	25	kV/mm	
3.18 mm	> 16	kV/mm	
Dielectric Constant			
25°C, 100 Hz	4.60		
25°C, 1 MHz	3.50		
60°C, 100 Hz	6.70		
60°C, 1 MHz	3.70		
90°C, 100 Hz	7.70		
90°C, 1 MHz	4.10		
Dissipation Factor			

25°C, 100 Hz	0.088		
25°C, 1 kHz	0.049		
25°C, 1 MHz	0.012		
60°C, 100 Hz	0.064		
60°C, 1 kHz	0.079		
60°C, 1 MHz	0.047		
90°C, 100 Hz	0.069		
90°C, 1 kHz	0.080		
90°C, 1 MHz	0.094		
Arc Resistance	130	sec	
Insulation Resistance			
25°C	2.6E+12	ohms	
90°C	6.8E+10	ohms	
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	2800	cP	
25°C ¹¹	5000	cP	
25°C ¹²	200	cP	
60°C ¹³	400	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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