Vipel® F010-TBN-28

Vinyl Ester

AOC, L.L.C.

Message:

Vipel Corrosion Resistant Bisphenol A, Epoxy Vinyl Ester Resins
AOC's Vipel F010 series is a bisphenol A epoxy-based vinyl ester resin dissolved in styrene. The Vipel F010 series is ideally suited for use in hand lay-up, sprayup, filament winding, SMC, and pultrusion processes where outstanding mechanical properties and excellent resistance to chemicals and heat are required.
Versatile
Wide formulating capabilities allow for use in many processes and for optimization
of cost/performance. Unique composition produces a tough and versatile resin with excellent crack
and craze resistance in molded parts. Vipel F010 is suitable for moldings that are subjected to particularly high static or dynamic loads, such as pipe, tanks, duct work and flooring applications. Vinyl ester resins have excellent resistance to sustained heat.
Corrosion Resistant
Vipel F010 highly resistant to hydrogen peroxide, and alkalis, and performs well in various stages of hypochlorite and chlorine production. Refer to AOC's "Corrosion Resistant Resin Guide" for corrosion resistance information or for questions regarding suitability of a resin to any particular chemical environment contact AOC.
Food and Drug
All resins in this datasheet are manufactured from raw materials that are listed in FDA regulation Title 21 CFR 177.2420. It is the fabricator's responsibility to also be sure that the final composite is well cured. All composites used for FDA applications should be post cured at 180°F/82°C for at least 4 hours. After post curing it should be washed with soap and water and rinsed.

General Information	
Features	Alkali Resistant Food Contact Acceptable Good Corrosion Resistance High Heat Resistance
Uses	Flooring Maintenance/Repair Piping Plumbing Parts Tanks
Agency Ratings	FDA 21 CFR 177.2420
Forms	Liquid
Processing Method	Filament Winding Hand Lay-up Pultrusion Spraying

Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.01	g/cm³	
Styrene Content	43	%	
Exotherm			
Gel to Peak	5.0	min	

Peak	177	°C	
Gel Time (25°C) [1]	28.0	min	
Critical Strain Energy	100	J/m²	ASTM E399
Stress Intensity Factor	0.600		ASTM E399
Thixotropic Index [2]	2.00		
Hardness	**Nominal Value**	**Unit**	**Test Method**
Barcol Hardness	39		ASTM D2583
Mechanical	**Nominal Value**	**Unit**	**Test Method**
Tensile Modulus	3170	MPa	ASTM D638
Tensile Strength (Yield)	88.3	MPa	ASTM D638
Tensile Elongation (Break)	6.2	%	ASTM D638
Flexural Modulus	3450	MPa	ASTM D790
Flexural Strength	152	MPa	ASTM D790
Thermal	**Nominal Value**	**Unit**	**Test Method**
Deflection Temperature Under Load (1.8 MPa, Unannealed)	120	°C	ASTM D648
Glass Transition Temperature	130	°C	DIN 53445
Electrical	**Nominal Value**	**Unit**	**Test Method**
Surface Resistivity	> 1.0E+13	ohms	DIN 53482
Volume Resistivity [3]	> 1.0E+16	ohms·cm	DIN 53482
Electric Strength (0.700 mm)	120	kV/mm	DIN 53481
Dielectric Constant			DIN 53483
60 Hz [4]	3.50		
60 Hz [5]	3.40		
1 kHz [6]	3.50		
1 kHz [7]	3.40		
1 MHz [8]	3.40		
1 MHz [9]	3.30		
Dissipation Factor			DIN 53483
60 Hz [10]	3.7E-3		
60 Hz [11]	2.5E-3		
1 kHz [12]	3.3E-3		
1 kHz [13]	2.2E-3		
1 MHz [14]	2.3E-3		
1 MHz [15]	1.6E-3		
Thermoset	**Nominal Value**	**Unit**	**Test Method**
Thermoset Mix Viscosity [16] (25°C)	500	cP	
Post Cure Time (82°C)	4.0	hr	
NOTE			
1.	Gel time with 1.25% MEKP		
2.	6/60 Thix Index		
3.	after 24 hrs in drinking water		

4.	after 24 hrs in drinking water
5.	Dry
6.	after 24 hrs in drinking water
7.	Dry
8.	after 24 hrs in drinking water
9.	Dry
10.	after 24 hrs in drinking water
11.	Dry
12.	after 24 hrs in drinking water
13.	Dry
14.	after 24 hrs in drinking water
15.	Dry
16.	Brookfield LV viscosity spindle 3 at 60 rpm

Recommended distributors for this material

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