

# Vipel® F010-INL-00

Vinyl Ester

AOC, L.L.C.

## Message:

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, spray-up, filament winding, SMC, and pultrusion processes where outstanding mechanical properties and excellent resistance to chemicals and heat are required.

### BENEFITS

#### 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 Resistance

Vipel F010 is 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.

General Information			
Features	Cracking resistance Good cracking resistance Good corrosion resistance Good chemical resistance alkali resistance Heat resistance, high Good toughness		
Uses	Floor Material Piping system Water tank		
Agency Ratings	FDA 21 CFR 177.2420		
Forms	Liquid		
Processing Method	Filament power winding Sprayable pultrusion Hand coating		
Physical	Nominal Value	Unit	Test Method
Styrene Content	43	%	
Critical Strain Energy	100	J/m <sup>2</sup>	ASTM E399
Gel to Peak	1.0	hr	
Peak Exotherm	80	°C	
Stress Intensity Factor	0.600		ASTM E399

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	88.3	MPa	ASTM D638
Tensile Elongation (Break)	6.2	%	ASTM D638
Flexural Modulus	3450	MPa	ASTM D790
Flexural Strength	152	MPa	ASTM D790
Compressive Strength	121	MPa	ASTM D695
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 <sup>1</sup>	> 1.0E+16	ohms · cm	DIN 53482
Dielectric Strength (0.700 mm)	120	kV/mm	DIN 53481
Dielectric Constant			DIN 53483
60 Hz <sup>2</sup>	3.40		DIN 53483
60 Hz <sup>3</sup>	3.50		DIN 53483
1 kHz <sup>4</sup>	3.40		DIN 53483
1 kHz <sup>5</sup>	3.50		DIN 53483
1 MHz <sup>6</sup>	3.30		DIN 53483
1 MHz <sup>7</sup>	3.40		DIN 53483
Dissipation Factor			DIN 53483
60 Hz <sup>8</sup>	2.5E-3		DIN 53483
60 Hz <sup>9</sup>	3.7E-3		DIN 53483
1 kHz <sup>10</sup>	2.2E-3		DIN 53483
1 kHz <sup>11</sup>	3.3E-3		DIN 53483
1 MHz <sup>12</sup>	1.6E-3		DIN 53483
1 MHz <sup>13</sup>	2.3E-3		DIN 53483
Uncured Properties	Nominal Value	Unit	Test Method
Density	1.01	g/cm <sup>3</sup>	
Viscosity (25°C, Brookfield LV)	0.13	Pa · s	
Gel Time (25°C)	47	min	
NOTE			
1.	Dry		
2.	Dry		
3.	after 24 hrs in drinking water		
4.	Dry		
5.	after 24 hrs in drinking water		
6.	Dry		

7.	after 24 hrs in drinking water
8.	Dry
9.	after 24 hrs in drinking water
10.	Dry
11.	after 24 hrs in drinking water
12.	Dry
13.	after 24 hrs in drinking water

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#### Recommended distributors for this material

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