

# Vipel® K022-CDC-00

Vinyl Ester

AOC, L.L.C.

## Message:

Vipel Fire Retardant Bisphenol A, Epoxy Vinyl Ester Resin

AOC's Vipel K022 series is a brominated bisphenol A epoxy vinyl ester resin dissolved in styrene. Vipel K022 series is ideally suited for use in hand lay-up, spray-up, filament winding and pultrusion processes where outstanding mechanical properties and excellent resistance to chemicals and heat are required. Vipel K022-CN series contains antimony products.

Fire Retardant

Some Vipel K022 versions do not require antimony trioxide to meet ASTM E 84 Class I flame spread requirements.

Mechanical Properties

Vipel K022 is suitable for moldings that are subjected to particularly high static or dynamic loads. Vinyl ester resins have excellent resistance to sustained heat.

Versatile

Wide formulating capabilities allow for use in many processes and for optimization of cost/performance.

Corrosion Resistance

Vipel K022 is highly resistant to a number of chemical environments. 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			
Additive	Flame Retardant		
Features	Brominated		
	Flame Retardant		
	Good Chemical Resistance		
	Good Corrosion Resistance		
	High Heat Resistance		
Uses	Coating Applications		
	Filaments		
Forms	Liquid		
Processing Method	Filament Winding		
	Hand Lay-up		
	Pultrusion		
	Spraying		
Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.13	g/cm <sup>3</sup>	ASTM D792
Bound Styrene	42.0	%	
Hardness	Nominal Value	Unit	Test Method
Barcol Hardness	40		ASTM D2583
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus			ASTM D638
25°C, Cast	3600	MPa	

66°C, Cast	3000	MPa	
93°C, Cast	2800	MPa	
121°C, Cast	900	MPa	
135°C, Cast	10.0	MPa	
Tensile Strength			ASTM D638
25°C, Cast	83.0	MPa	
66°C, Cast	68.0	MPa	
93°C, Cast	50.0	MPa	
121°C, Cast	8.00	MPa	
135°C, Cast	1.50	MPa	
Tensile Elongation			ASTM D638
Break, 25°C, Cast	4.6	%	
Break, 66°C, Cast	5.1	%	
Break, 93°C, Cast	6.1	%	
Break, 121°C, Cast	> 10	%	
Break, 135°C, Cast	12	%	
Flexural Modulus (25°C, Cast)	3700	MPa	ASTM D790
Flexural Strength (25°C, Cast)	143	MPa	ASTM D790
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load (1.8 MPa, Unannealed, Cast)	112	°C	ASTM D648
Flammability	Nominal Value		Test Method
Flame Spread	10.0		ASTM E84
Smoke Developed	800		ASTM E84
Gel Time <sup>1</sup> (25°C)	22.0	min	
Antimony Trioxide	1.50		ISO 6383-2
Gel to Peak	12.0	min	
Peak Exotherm	168	°C	
Thermoset	Nominal Value	Unit	Test Method
Shelf Life	26	wk	
Thermoset Mix Viscosity <sup>2</sup> (25°C)	350	cP	ASTM D2393
NOTE			
1.	with 0.3% Cobalt 6%, 0.05 % DMA and 1.25% MEKP		
2.	Brookfield RV viscosity spindle 2 at 20 rpm		

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