

## Product Information

# Vipel Corrosion Resistant Isophthalic Polyester Resin



### TYPICAL CAST MECHANICAL PROPERTIES \* see back page (1)

Test	Units of Measure	Nominal	Test Method
Tensile Strength	psi/MPa	12,100/83.4	ASTM D 638
Tensile Modulus	psi/GPa	550,000/3.8	ASTM D 638
Tensile Elongation	%	2.8	ASTM D 638
Flexural Strength	psi/MPa	18,400/127	ASTM D 790
Flexural Modulus	psi/GPa	610,000/4.2	ASTM D 790
Heat Distortion Temperature	°F/°C @264 psi	224/107	ASTM D 648
Barcol Hardness		43	ASTM D 2583

\*Typical properties are not to be construed as specifications.

### DESCRIPTION

AOC's Vipel F701 Series resins are high molecular weight, two-stage isophthalic, unsaturated polyester resin with the wet out, cure and handling characteristics of general purpose resins.

They have an excellent shelf life and are ideal for filament winding and spray-up. A few selected resins are listed below including the high viscosity base resin, Vipel F701-FHG-00.

### BENEFITS

#### Corrosion Resistance

AOC's Vipel F701 series resins provide excellent corrosion resistance when used in contact with inorganic and organic acids. Solvent resistance is field-proven for many petroleum products such as kerosene, heating oil and crude oils.

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.

### TYPICAL LIQUID RESIN PROPERTIES @ 25°C \* see back page (2)

VERSIONS	cps	Visc	SP	rpm	Thix Index	Gel Time, min.	Gel to Peak, min.	Peak Exotherm (°F/°C)	Specific Gravity	Styrene, %
F701-ABK-15	600	RV	2	20	2.5 <sup>1</sup>	15 <sup>3</sup>	17	370/188	1.08	44
F701-ABM-23	700	LV	3	60	2.5 <sup>2</sup>	23 <sup>4</sup>	15	380/193	1.06	47
F701-ABU-25	550	LV	3	60	2.0 <sup>2</sup>	25 <sup>4</sup>	12	390/199	1.06	48
F701-BBB-00	400	LV	3	60	NA	16 <sup>5</sup>	24	300/149	1.08	44
F701-BID-08	500	LV	3	60	2.0 <sup>2</sup>	8 <sup>6</sup>	20	246/119	1.06	47
F701-BID-20	500	LV	3	60	2.0 <sup>2</sup>	20 <sup>6</sup>	37	180/82	1.06	47
F701-FBB-15	550	LV	3	60	2.5 <sup>2</sup>	15 <sup>4</sup>	12	390/199	1.08	47
F701-FBG-20	525	LV	3	60	2.8 <sup>2</sup>	20 <sup>4</sup>	10	410/210	1.05	50
F701-FBL-20	600	RV	2	20	2.5 <sup>2</sup>	20 <sup>3</sup>	8	380/193	1.06	48
F701-FBN-28	550	LV	3	60	2.5 <sup>1</sup>	28 <sup>4</sup>	10	390/199	1.06	48
F701-FBY-45	700	LV	3	60	2.5 <sup>1</sup>	45 <sup>4</sup>	20	330/166	1.08	44
F701-FHG-00	1500	RV	3	20	NA	11 <sup>7</sup>	2	410/210	1.12	37
F701-PTT-25	600	RV	2	20	2.0 <sup>1</sup>	25 <sup>8</sup>	13	370/188	1.08	47 <sup>9</sup>

1) 2/20 rpm Thix Index  
 2) 6/60 rpm Thix Index  
 3) 77°F/25°C Gel Time with 1.0% MEKP  
 4) 77°F/25°C Gel Time with 1.25% MEKP  
 5) Gel Time with 0.25% Cobalt 6% and 1.25% MEKP in a 19mm x 150 mm test tube

6) Gel with 1.0% MEKP in a 19 mm x 150 mm test tube  
 7) 180°F/82°C SPI gel with 1.0% BPO  
 8) 77°F/25°C Gel Time with 1.1% MEKP  
 9) HAP Content

#### Versatile

Suitable for various fabricating methods such as hand lay-up, spray-up and filament winding.

#### Food and Drug

All resins listed on this product data sheet are manufactured from raw materials that are listed in FDA regulation Title 21 CFR 177.2420.

It is the fabricators responsibility to 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, laminate should be washed with soap and water and then rinsed.

# Vipel® F701 Series Polyester Resin

**Mechanical Properties of Vipel F701 Laminates with Increasing Temperature**

TEMPERATURE, °F/°C	TENSILE STRENGTH, psi/Mpa	TENSILE MODULUS, psi/Gpa	FLEXURAL STRENGTH, psi/Mpa	FLEXURAL MODULUS, psi/Gpa
77/25	17,100/118	1,800,000/12.4	27,400/189	1,520,000/10.5
200/93	20,800/143	1,540,000/10.6	28,400/196	1,080,000/7.4
250/121	16,000/110	1,230,000/8.5	10,700/74	560,000/3.9
300/149	11,300/78	1,160,000/8.0	4,400/30	430,000/3.0
350/177			3,800/26	410,000/2.8

## PERFORMANCE GUIDELINES

**A.** Keep full strength catalyst level between 1.0% - 2.0% of the total resin weight.

**B.** Maintaining shop temperatures between 65°F/18°C and 90°F/32°C and humidity between 40% and 90% will help the fabricator make a high quality part. Consistent shop conditions contribute to consistent gel times.

**C.** Sanding and/or grinding is recommended if a secondary bond is applied to a laminate that was made with a resin containing wax.

## SAFETY

See appropriate Material Safety Data Sheet for guidelines.

## STORAGE STABILITY

Vipel F701-BBB-00 and F701-FHG-00 are stable for 6 months from the date of manufacture when stored in original containers, away from direct sunlight or other UV light sources and at or below 77°F/25°C.

All other Vipel F701 products are stable for 3 months from the date of manufacture when stored in the original containers, away from direct sunlight or other UV light sources and at or below 77°F/25°C.

Storage stability of two months or less should be anticipated if the storage temperature exceeds 86°F/30°C.

After extended storage, some drift may occur in the product viscosity and gel time.

## ISO 9001:2008 CERTIFIED

The Quality Management Systems at every AOC manufacturing facility have been certified as meeting ISO 9001:2008 standards. This certification recognizes that each AOC facility has an internationally accepted model in place for managing and assuring quality. We follow the practices set forth in this model to add value to the resins we make for our customers.

## FOOTNOTES

### (1)

Based on tests of the unpromoted base resin used in the manufacture of Vipel F707-PVA series at 77°F/25°C. All tests performed on unreinforced cured resin castings. Thixotropic components, if applicable are excluded from casting samples. Castings were post cured.

### (2)

The gel times shown are typical but may be affected by catalyst, promoter and inhibitor concentrations and resin, mold and shop temperature. Variations in gelling characteristics can be expected between different lots of catalysts and at extremely high humidities. Pigment and fillers can retard or accelerate gelation. It is recommended that the fabricator check the gelling characteristics of a small quantity of resin under actual operating conditions prior to use.

**AOC**®  
World Leader in Resin Technology

AOC, LLC  
955 Highway 57 East  
Collierville, TN 38017  
Toll Free: +1 (866) 319-8827  
[www.aoc-resins.com](http://www.aoc-resins.com)

**Global Contacts**

Asia/Australia <a href="mailto:australia@aac-resins.com">australia@aac-resins.com</a>	Africa <a href="mailto:africa@aac-resins.com">africa@aac-resins.com</a>
Middle East <a href="mailto:middleeast@aac-resins.com">middleeast@aac-resins.com</a>	India <a href="mailto:india@aac-resins.com">india@aac-resins.com</a>
Latin America <a href="mailto:latinamerica@aac-resins.com">latinamerica@aac-resins.com</a>	Europe <a href="mailto:europa@aac-resins.com">europa@aac-resins.com</a>

The information contained in this data sheet is based on laboratory data and field experience. We believe this information to be reliable, but do not guarantee its applicability to the user's process or assume any liability for occurrences arising out of its use. The user, by accepting the products described herein, agrees to be responsible for thoroughly testing each such product before committing to production.

Our recommendations should not be taken as inducements to infringe any patent or violate any law, safety code or insurance regulation.