

## Product Information

# Vipel® Corrosion Resistant Bisphenol A, Fumarate Based Polyester Resin



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

Test	Unit of Measure	Nominal	Test Method
Tensile Strength	psi/MPa	10,200/70.3	ASTM D 638
Tensile Modulus	psi/GPa	440,000/3.0	ASTM D 638
Tensile Elongation	%	2.6	ASTM D 638
Flexural Strength	psi/MPa	17,200/119	ASTM D 790
Flexural Modulus	psi/GPa	440,000/3.0	ASTM D 790
Heat Distortion Temperature °F/°C @ 264 psi		255/124	ASTM D 648
Barcol Hardness		40	ASTM D 2583

### DESCRIPTION

AOC's Vipel® F282 series resins are high molecular weight bisphenol A fumarate unsaturated polyester resins. Vipel® F282 series has an excellent shelf life and is ideal for filament winding and spray-up applications. One unique version is Vipel F282-ZZZ-00 which is the powdered alkyd product is an unique version that can be shipped abroad and blended locally with styrene or other monomers.

### TYPICAL LIQUID RESIN PROPERTIES\* (2) see back page

Versions	Viscosity, cps	Thix Index	Gel Time, min	Gel to Peak, min	Peak Exotherm, °F/°C	Specific Gravity	Styrene Content %	FDA <sup>5</sup>
F282-AAA-39	500 <sup>1</sup>	NA	35 <sup>2</sup>	10	300/149	1.08	>50	Yes
F282-AAC-19	500 <sup>1</sup>	NA	19 <sup>3</sup>	10	284/140	1.08	>50	Yes
F282-AAN-00	500 <sup>1</sup>	NA	12 <sup>4</sup>	4	420/216	1.08	>50	Yes
F282-ZZZ-00	NA	NA	NA	NA	NA	NA	NA	Yes

NA- Not applicable

- 1) 77°F/25°C Brookfield RV viscosity spindle 2 at 20 rpm
- 2) 77°F/25°C Gel with 0.5% Cobalt 6% and 1.25% MEKP
- 3) 77°F/25°C Gel time with 1.0% MEKP
- 4) 180°F/82°C SPI gel with 1.0% BPO
- 5) US Food and Drug Administration (Ingredients comply with Title 21 CFR, parts 170-199 relative to FDA Ingredients).

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

### BENEFITS

#### Corrosion resistance

Vipel® F282 is designed to make parts for a broad range of chemical environments such as acidic, bleach, hydrogen peroxide, oxidizing media, and caustic. 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.

#### Versatile

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

#### 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 for at least 4 hours. After post curing, laminate should be washed with soap and water and rinsed.

# Vipel® F282 Series Polyester Resin

## PERFORMANCE GUIDELINES

**A.** Keep full strength catalyst levels between 0.75% - 2.0% of the total resin weight.

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

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

## STORAGE STABILITY

This product is stable for three 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 25°C (77°F). Storage stability of two months or less should be anticipated if the storage temperature exceeds 30°C (86°F).

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

Infinite stability is expected on Vipel F282-ZZZ-00 if the temperature is maintained below 86°F/30°C.

## SAFETY

See appropriate Material Safety Data Sheet for guidelines.

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.



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## ISO 9001:2000 CERTIFIED

The Quality Management Systems at every AOC manufacturing facility have been certified as meeting ISO 9001:2000 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)

These tests are based on Vipel F282-AAN-00 at 77°F/25°C and 50% relative humidity. All tests performed on unreinforced cured resin castings. Thixotropic components, if applicable, are excluded from casting samples. Castings were prepared using 0.25% cobalt 6% and 1.25% MEKP, allowed to gel and cure at ambient temperature and then post cured for 2 hours at 250°F/121°C.

### (2)

The gel times shown are typical but may be affected by catalyst, promoter, inhibitor concentration, resin, mold, and shop temperature. Variations in gelling characteristics can be expected between different lots of catalysts and at extremely high humidities. Pigment and/or filler 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.