

## Product Information

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

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

| Test                        | Units 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  |

\*Typical properties not to be construed as specifications

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

| VERSIONS    | Gel Time, minutes | Gel to Peak | Peak Exotherm (°F/°C) | Visc  | SP | rpm | cps | SG   | % Styrene | FDA <sup>3</sup> |
|-------------|-------------------|-------------|-----------------------|-------|----|-----|-----|------|-----------|------------------|
| F282-AAA-39 | 39 <sup>4</sup>   | 15          | 388/198               | RV    | 2  | 20  | 500 | 1.08 | 50        | Yes              |
| F282-AAC-19 | 19 <sup>2</sup>   | 10          | 284/140               | RV    | 2  | 20  | 500 | 1.08 | 50        | Yes              |
| F282-AAN-00 | 12 <sup>1</sup>   | 4           | 420/216               | LVSSA | 31 | 30  | 500 | 1.08 | 50        | Yes              |
| F282-ZZZ-00 | NA                | NA          | NA                    | NA    | NA | NA  | NA  | NA   | NA        | Yes              |

1) 180°F/82°C SPI gel with 1.0% BPO

2) 77°F/25°C Gel time with 1.0% M-50

3) US Food and Drug Administration (Ingredients comply with Title 21 CFR, parts 170-199 relative to FDA ingredients)

4) 0.5% Cobalt 6%, 1.25% M-50

NA - Not applicable

### 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 that can be shipped abroad and blended locally with styrene and other monomers. Please see the Vipel F282-ZZZ-00 product data sheet for additional information.



### BENEFITS

#### Corrosion Resistance

AOC's 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. For questions regarding suitability of a resin to any particular chemical environment contact your AOC representative

#### Versatile

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

It is the fabricator's 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® F282 Series Polyester Resin

## 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

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 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.

Storage in plastic totes made out of materials such as polyethylene (PE) or polypropylene (PP) in particular translucent PE/PP will accelerate gel formation and result in a significantly reduced storage stability.

Storage of this resin outdoors in translucent plastic totes may reduce the storage stability to only a few weeks. AOC cannot assume responsibility for gel formation under these storage conditions.

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

## 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 F282 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.



### Global Contacts

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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.