AOC®
World Leader in Resin Technology

Vipel® F083 Epoxy Vinyl Ester Resin

Product Information

Vipel® Corrosion Resistant Low VOC, High Cross-linked Bisphenol A, Epoxy Vinyl Ester Resin

TYPICAL CAST MECHANICAL PROPERTIES* (1) see back page

Test	Unit of Measure	Nominal	Test Method
Tensile Strength,	psi/MPa	13,300/91.7	ASTM D 638
Tensile Modulus,	psi/GPa	460,000/3.2	ASTM D 638
Tensile Elongation,	%	4.3	ASTM D 638
Flexural Strength,	psi/MPa	21,300/147	ASTM D 790
Flexural Modulus,	psi/GPa	540,000/3.7	ASTM D 790
Heat Distortion Temperature, °F/°C@264 psi		255/124	ASTM D 648
Barcol Hardness,		42	ASTM D 2583

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 %
F083-AAA-00	550[1]	NA	20[2]	8	355/179	1.08	35

NA- Not applicable
1) 77°F/25°C Brookfield RV viscosity spindle 2 at 20 rpm
2) 77°F/25°C Gel time with 0.3% cobalt 6%, 0.025% DMA and 1.25% MEKP

*Typical properties are not to be construed as specifications.

DESCRIPTION

Vipel® F083-AAA-00 is a high performance low VOC, non-thixotropic high cross-linked bisphenol A, epoxy ester resin.

Vipel® F083-AAA-000 is designed for manufacturing pipes, tanks, scrubbers and stacks using hand lay-up, spray-up or filament winding application methods.

BENEFITS

Low VOC

Vipel® F083-AAA-00 has a low VOC content.

Corrosion Resistance

Vipel® F083-AAA-00 is designed to make parts for oxidizing chemicals such as acids. 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.

Heat Resistance

Vipel® F083-AAA-00 has an excellent balance of heat resistance and flexibility.

Vipel® F080
Epoxy Vinyl Ester Resin

PERFORMANCE GUIDELINES

A. Keep full strength catalyst levels between 1.0% - 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. Finished part surfaces that have been cured at room temperature in contact with air should be relatively tack free. They may not, however, be fully cured and are thus not as resistant to chemicals as a fully cured part. If no further laminating is planned, a 10% solution of 5% paraffin wax solution (MP 115-118°F/ 46-48°C) in styrene may be added to the last resin layer to provide a tack free surface.

D. Optimum cure and performance may be obtained by post curing room temperature cured laminates for two hours at 158-212°F/ 70-100°C.

E. Room temperature curing by means of cobalt acceleration should be completed with low hydrogen peroxide content MEKP catalyst to minimize foaming.

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.

SAFETY

See appropriate Material Safety Data Sheet for guidelines.

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)

Based on tests of Vipel® F083-AAA-00 at 73°F/ 23°C and 50% relative humidity. All thixotropic resins should be mixed well prior to use. The use of thixotropy degrades the corrosion performance of a resin in some chemical environments such as sodium chloride. All tests on unreinforced cured resin. Castings prepared using 1.0% BPO and cured for 4 hours at 160°F, 1 hour at 200°F, 1 hour at 240°F, and 2 hours at 280°F.

(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.

AOC®
World Leader in Resin Technology
950 HIGHWAY 57 EAST
COLLIERVILLE, TN 38017
www.aoc-resins.com

NORTH AMERICA
Tel: 001(901) 854-2800
Fax: 001 (901) 854-7277
sales@aoc-resins.com

ASIA, MIDDLE EAST & LATIN AMERICA
Tel: 001 (863) 815-5016
Fax: 001 (863) 815-4733
international@aoc-resins.com

EUROPE
Tel: (44) 1473 288997
Fax: (44) 1473 216080
europe@aoc-resins.com

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