AOC
World Leader in Resin Technology

Vipel®
K733 Series
Polyester Resin

Vipel Fire Retardant Isophthalic Polyester Resin

TYPICAL CAST MECHANICAL PROPERTIES* (1) see back page

Test	Unit of Measure	K733-A	K733-B	Test Method
Tensile Strength	psi/MPa	9,400/65	11,000/76	ASTM D 638
Tensile Modulus	psi/GPa	560,000/3.9	550,000/3.8	ASTM D 638
Tensile Elongation	%	1.9	2.4	ASTM D 638
Flexural Strength	psi/MPa	17,400/120	18,000/124	ASTM D 790
Flexural Modulus	psi/GPa	600,000/4.1	580,000/4.0	ASTM D 790
Heat Distortion Temperature				
°F/°C @ 264 psi		194/90	205/96	ASTM D 648
Barcol Hardness		40	44	ASTM D 2583

TYPICAL LIQUID RESIN PROPERTIES* (2) see back page

VERSIONS	Viscosity, cps	Thix Index	Gel Time, min	Gel to Peak, Exotherm min	Peak Exotherm, °F/C°	Specific Gravity	Styrene Content %
K733-APT-20	500[1]	2.0[2]	20[3]	7	335/168	1.26	39
K733-ABB-00	185 [1]	NA	35 [4]	15	355/179	1.21	39
K733-BPT-20	450[1]	2.0[2]	20[3]	6	355/179	1.21	39

NA- Not applicable
1) 77°F/25°C Brookfield RV viscosity spindle 2 at 20 rpm
2) 2/20 rpm Thix Index
3) 77°F/25°C Gel time with 1.25% MEKP
4) 77°F/25°C Gel time with 0.25% Coblat 6 and 1.25% MEKP
*Typical properties are not to be construed as specifications.

FLAMMABILITY PROPERTIES (ASTM E-84 TUNNEL TEST)**

	ASTM E84			
Version	% Antimony Trioxide	Flame Spread	Smoke Developed	Class
K733-A Series	-	20	600	I
K733-B Series	1.5	15	650	I

Laminate Construction
2 plies of 2.0 ounce per square foot (600 grams per square meter) fiber glass chopped strand mat Fiberglass content - 30%
Laminates were post cured at 212°F/100°C for 3 hours.

DESCRIPTION

Vipel K733-A series is a fire retardant isophthalic polyester resin that meets ASTM E 84 Class I with no synergists added.

Vipel K733-B is a fire retardant isophthalic polyester resin that meets ASTM E 84 Class I with 1.5% antimony trioxide added. Vipel K733 series resins are ideally suited for use in hand lay-up, spray-up and filament winding processes where outstanding mechanical properties and mild chemical resistance are required.

BENEFITS

Fire Retardant
Vipel K733-A requires no antimony trioxide spread to meet ASTM E 84 Class I flame spread requirements.

Vipel K733-B requires only 1.5% antimony trioxide to meet ASTM E 84 Class I flame spread requirements.

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

Corrosion Resistance
Vipel K733 provides mild chemical resistance 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.

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PERFORMANCE GUIDELINES

A. Keep full strength catalyst levels between 1.0% - 2.5% 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 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

Vipel K733-APT-20 and K733-BPT-20 are stable for 3 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. Vipel K733-ABB-00 is 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.

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 K733-A series and K733-B 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 post cured.

(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 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.

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North America
northamerica@aoc-resins.com
Toll Free: +1 (866) 319-8827
www.aoc-resins.com

Global Contacts

Australia
australia@aoc-resins.com
Middle East
middleeast@aoc-resins.com
Latin America
latinamerica@aoc-resins.com
Africa
africa@aoc-resins.com
Asia\Australia
asia@aoc-resins.com
Europe
europe@aoc-resins.com