



TECHNICAL BROCHURE – UNSATURATED POLYESTER RESINS

GRADE : VBR 8903 – BISPHENOL RESIN

VBR 8903 is a medium reactive unsaturated polyester resin made from propoxylated Bisphenol - A and fumaric acid. This resin shows superior chemical resistance to a wide range of acids, alkalis, salts and solvents. The corrosion resistance and heat distortion properties are far superior than isophthalic acid based polyester resins. It shows excellent wetting characteristic with various reinforcements. By virtue of its unique chemical structure, mouldings based on VBR 8903 show excellent heat stability, along with retention of good mechanical properties and chemical resistance quality.

PROPERTIES OF LIQUID RESIN	
Appearance	Brownish clear liquid
Viscosity at 25°C, cP or mPa (Brookfield Viscometer LV DV II + Pro Spindle 63, rpm 60)	400 – 600
Specific gravity at 25°C	1.020 - 1.05
Acid value, mg KOH/gm	6 – 10
Volatile content, %	48 - 52
Shelf life at 25°C, months	3
Gel time at 25°C, minutes*	15 - 25
Peak exotherm, °C**	180 - 190

Mix - VBR 8903 - 100 gm, VBR 1206 - 1.5 ml, VBR 1201 - 1.5 ml, VBR 1204 - 1.5 ml

** Under insulated condition for 100 gm mixture

Caution : VBR 1201& VBR 1206 should never be independently mixed with VBR 1204, as this would cause explosion.

PROPERTIES OF UNREINFORCED CURED RESIN CASTING

The specimens are prepared by separately mixing 1.5% (v/wt) each of VBR 1206, VBR - 1201 and VBR - 1204 with VBR 8903 and casted in a closed cell of specified dimension. These castings are cured for 24 hrs at room temperature and post curing at 100°C for 4 hrs.

PROPERTIES OF RESIN CASTING	
Hardness (Barcol)	35 – 40
Tensile strength, N/mm ²	50 – 55
Flexural strength, N/mm ²	80 – 85
Heat distortion temperature, °C	120 – 125
Water absorption at 25°C - 700 hrs, %	0.3
Elongation at break, %	1.8 - 2.0

CHEMICAL RESISTANCE

Castings of VBR 8903 show superior resistance towards wide range of chemicals and solvents at elevated temperature. It resists degradation due to hydrolysis and other chemical attack.

HEAT RESISTANCE

VBR 8903 resists deterioration and deformation in high temperature environments.

TEST METHODS IS 6746 – 1994

CURING CHARACTERISTICS

VBR 8903 is curable with free radical initiators. Cobalt soaps accelerator (VBR 1201) and amine promoter (VBR 1206) along with peroxide catalyst (VBR 1204) is suitable for room temperature curing. Benzoyl peroxide or tertiary butyl perbenzoate is suitable for high temperature curing. To attain optimum result, the laminate should be post cured for 4 hrs at 90°C immediately after 24 hrs curing at ambient temperature.



Vasavibala Resins (P) Ltd.

POLYMER DIVISION
Manufacturers of Unsaturated Polyester Resins

APPLICATION

The excellent physical - chemical characteristics of the laminates made from VBR 8903 make this resin as ideal for combating corrosion problems and replacing scarce metals in wide range of applications in chemical industries. VBR 8903 is recommended for fabrication of tanks, ducting, process equipment battery cell container and protective lining.

HANDLING

VBR 8903 contains styrene monomer classified as highly flammable liquid. Working area should be well ventilated to maintain a styrene threshold limit of 100 ppm. It is also irritant to eye and skin and hence goggles and gloves are recommended while handling.

STORAGE

VBR 8903 should be stored below 25°C in closed containers. The ageing process affects the clarity, gel time and viscosity. Since the ageing process is accelerated by heat and moisture, the resin should be stored in a cool dry area away from direct sunlight, naked flame and sources of ignition. Conversely the ageing process can be slowed down by low temperature so it is necessary to store the resin for extended time under refrigeration. VBR 8903 is guaranteed for 3 months, from the date of manufacture provided the storage conditions are strictly adhered to.

PACKING: 35 kg HDPE carboys and 210 kg coated steel drum.