

# Vasavibala Resins (P) Ltd.

POLYMER DIVISION  
Manufacturers of Unsaturated Polyester Resins



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### TECHNICAL BROCHURE – UNSATURATED POLYESTER RESINS

#### **GRADE: VBR 4512 – Pre Accelerated Iso Infusion Resin**

VBR 4512 is a versatile medium reactive isophthalic acid based polyester resin, suitable for Infusion Process. This resin exhibits excellent chemical and weather resistance along with good mechanical and electrical properties. VBR 4512 is pre promoted and formulated to provide reduced viscosity and improved curing characteristics and good handling performance in the infusion of medium to large structural reinforced composites.

#### **PROPERTIES OF LIQUID RESIN**

Appearance	Pinkish clear liquid
Viscosity at 25°C, cP or mPa (Brookfield Viscometer LV DV II + Pro Spindle 63, rpm 100)	110 - 190
Density at 25°C, gm/cm <sup>3</sup>	1.090 - 1.110
Acid value, mg KOH/gm	10 – 18
Solid content, %	54 - 60
Shelf life at 25°C, months	3
Gel time @25° C, minutes	35 - 55

\* Mix - VBR 4512 - 100 gm, VBR 1204 - 1.5 ml

#### **PROPERTIES OF UNREINFORCED CURED RESIN CASTING**

The specimens are prepared by mixing 1.5% of VBR 1204 and VBR 4512 and casted in a closed cell of specified dimension. These castings are cured for 24 hrs at room temperature and post curing at 90°C for 4 hrs.

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PROPERTIES OF RESIN CASTING	
Hardness (Barcol)	40 - 42
Tensile strength, N/mm <sup>2</sup>	50 – 55
Tensile Modulus, N/mm <sup>2</sup>	3500 - 4000
Flexural strength, N/mm <sup>2</sup>	80 - 90
Flexural Modulus, N/mm <sup>2</sup>	2200 - 2600
Heat distortion temperature, °C	90 – 95
Water absorption at 25°C over a period of 700 hrs,%	<0.3

### CHEMICAL RESISTANCE

Castings of VBR 4512 show a good resistance to most acids at ambient temperature. It resists petroleum products, oils, salt solution etc. It shows poor performance towards strong oxidizing acids and strong alkalies.

### THERMAL STABILITY

Castings of VBR 4512 shows better dry heat stability than orthophthalate resins.

**TEST METHODS** IS 6746 – 1994,ISO R527-1966,ISO 178-1975,ISO 75-1974

### APPLICATION

VBR 4512 is recommended for the manufacture of glass fiber reinforced chemical process equipment, storage tanks, transport vehicles components, fume extraction systems, pipe lines, tunnels lining, etc. for use at ambient to moderate temperature with good weather resistant performance.

### STORAGE

VBR 4512 should be stored in closed containers inside covered area. The storage temperature not exceeding 25°C is preferable. At higher storage temperature, the shelf life decreases sharply. It should not be exposed to direct sunlight, heat radiation and moisture; these may cause premature gelation. VBR 4512 is guaranteed for 3 months from the date of manufacture provided the storage conditions are strictly adhered to.

**PACKING :** 35 kg HDPE carboys and 225 kg coated steel barrels.