



## **TECHNICAL BROCHURE – UNSATURATED POLYESTER RESINS**

### **GRADE: VBR 4512RTM –PRE ACCELERATED ISO RTM PROCESS RESIN**

VBR 4512 RTM is a versatile medium reactive Isophthalic acid based polyester resin suitable for RTM Process. This resin exhibits excellent chemical and weather resistance along with good mechanical and electrical properties. VBR 4512RTM 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	Pale pinkish clear liquid
Viscosity at 25°C, cP or mPa.s (Brookfield Viscometer LV DV II + Pro Spindle 63 rpm 100)	180 – 240
Density at 25°C gm/ml	1.09 – 1.11
Acid value, mg KOH/gm	12 - 18
Solid content, %	54 – 60
Shelf life at 25°C, months	3
Gel time at 25°C, minutes*	25 - 35
Peak exotherm, °C**	190 - 195

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

\*\* Under insulated condition for 100 gm mixture

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

The specimens are prepared by mixing of VBR 1204 with VBR 4512RTM 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.



# Vasavibala Resins (P) Ltd.

POLYMER DIVISION  
Manufacturers of Unsaturated Polyester Resins

PROPERTIES OF RESIN CASTING	
Hardness (Barcol)	40 – 44
Tensile strength, N/mm <sup>2</sup>	➤ 65
Flexural strength, N/mm <sup>2</sup>	➤ 90
Heat distortion temperature, °C	➤ 90
Water absorption at 25°C over a period of 700 hrs, %	0.2 – 0.3

## CHEMICAL RESISTANCE

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

## TEST METHODS

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## APPLICATION

VBR 4512RTM is recommended for the manufacture of glass fiber reinforced chemical process equipment, storage tanks, transport tankers, fume extraction systems, pipe lines, lining works etc. for use at ambient to moderate temperature.

## STORAGE

VBR 4512RTM 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 4512RTM is guaranteed for 3 months from the date of manufacture provided the storage conditions are strictly adhered to.

## PACKING :

35 kg HDPE carboys and 220 kg coated steel barrels.