



# Vasavibala Resins (P) Ltd.

POLYMER DIVISION  
Manufacturers of Unsaturated Polyester Resins

## TECHNICAL BROCHURE – UNSATURATED POLYESTER RESINS

### GRADE: VBR 4523 – Pre Accelerated ISOPHTHALIC RESIN

VBR 4523 is a versatile medium reactive pre accelerated isophthalic acid based polyester resin, suitable for high performance lamination applications. This resin exhibits excellent chemical and weather resistance along with good mechanical and electrical properties.

#### PROPERTIES OF LIQUID RESIN

Appearance	Pale pinkish clear liquid
Colour (on Gardner scale, max)	3-5
Viscosity at 25°C, cps Brookfield Viscometer LV DV +Pro(Spindle 63, rpm 100)	400 – 600
Specific gravity at 25°C gm/ml	1.10 - 1.12
Acid value, mg KOH/gm	15 – 19
Volatile content, %	35 – 40
Shelf life at 25°C, months	3
Gel time at 25°C, minutes*	10 - 20
Peak exotherm, °C**	185 - 190

\* Mix - VBR 4523 - 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 separately mixing 1.5% of VBR 1204 with VBR 4523 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)ASTM 2583	41 - 43
Tensile strength, N/mm <sup>2</sup> ,ISO527	70 – 75
Flexural strength, N/mm <sup>2</sup> · ISO527	100 - 115
Heat distortion temperature, °C	>95
Water absorption at 25°C over a period of 700 hrs, %	0.30 – 0.32
Elongation @break ISO527	>3

## CHEMICAL RESISTANCE

Castings of VBR 4523 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 alkalies.

## THERMAL STABILITY

Castings of VBR 4523 shows better dry heat stability than orthophthalate resins.

## TEST METHODS

IS 6746 – 1994, ISO527

## APPLICATION

VBR 4523 is recommended for the manufacture of glass fibre 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 4523 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 4523 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.