



Vasavibala Resins (P) Ltd.

POLYMER DIVISION
Manufacturers of Unsaturated Polyester Resins

TECHNICAL BROCHURE – UNSATURATED POLYESTER RESINS

GRADE: VBR 4521 – Pre Accelerated Iso Filament Winding Resin

VBR 4521 is a versatile medium reactive isophthalic acid based polyester resin, suitable for filament winding applications. This resin exhibits excellent chemical and weather resistance along with good mechanical and electrical properties.

PROPERTIES OF LIQUID RESIN

Appearance	Pale pinkish to dark pinkish liquid
Viscosity at 25°C, cP or mPa (Brookfield Viscometer LV DV II + Pro Spindle 61, rpm 12)	300 – 450
Density at 25°C gm/cm ³	1.090 - 1.110
Acid value, mg KOH/gm	10 – 18
Volatile content, %	36 – 42
Shelf life at 25°C, months	3
Geltime @25 deg C	36 - 54
Pot life @ 25 deg C	32 - 48
Hydroxy value, mgKOH / gm	18 - 26

* Mix - VBR 4521 - 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 4521 and casted in a closed cell of specified dimension. These castings are cured for 24 hrs at room emperature and post curing at 90°C for 4 hrs.



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PROPERTIES OF RESIN CASTING	
Hardness (Barcol)	40 – 45
Tensile strength, N/mm ²	50 – 55
Tensile Modulus, N/mm ²	3500 - 4000
Flexural strength, N/mm ²	80 - 90
Flexural Modulus, N/mm ²	2200 - 2600
Heat distortion temperature, °C	90 – 95
Water absorption at 25°C over a period of 700 hrs,%	0.32 – 0.33

CHEMICAL RESISTANCE

Castings of VBR 4521 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.

THERMAL STABILITY Castings of VBR 4521 shows better dry heat stability than orthophthalate resins.

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

APPLICATION

VBR 4521 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 4521 should be stored in closed containers inside covered area. The storage temperature not exceeding 30°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 4521 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.