



Vasavibala Resins (P) Ltd.

POLYMER DIVISION
Manufacturers of Unsaturated Polyester Resins

TECHNICAL BROCHURE – UNSATURATED POLYESTER RESINS

GRADE: VBR 4313 – Iso Pultrusion Process Resin

VBR 4313 is a versatile high reactive and medium viscous isophthalic acid based polyester resin, suitable for pultrusion process applications. This resin exhibits excellent chemical and weather resistance along with good mechanical and electrical properties.

PROPERTIES OF LIQUID RESIN

Appearance	Pale yellowish to yellowish liquid
Viscosity at 25°C, cP or mPa (Brookfield Viscometer LV DV II + Pro Spindle 63, rpm 30)	600 – 900
Density at 25°C gm/cm ³	1.120 - 1.140
Acid value, mg KOH/gm	10 – 18
Solid content, %	62 - 68
Shelf life at 25°C, months	3
Gel time at 140°C, minutes*	2 - 4

* Mix - VBR 4313 - 100 gm, TBPB(VBR 1208) – 1 g

PROPERTIES OF UNREINFORCED CURED RESIN CASTING

The specimens are prepared by mixing 1 ml of VBR 1208 and VBR 4313 in 100 g and casted at 140 deg c in a closed cell of specified dimension. These castings are cured for 2-3 hrs at room temperature 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
Flexural strength, N/mm ²	80 - 90
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 4313 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 4313 shows better dry heat stability than orthophthalate resins.

TEST METHODS

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STORAGE

VBR 4313 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 4313 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.