



Vasavibala Resins (P) Ltd.

POLYMER DIVISION
Manufacturers of Unsaturated Polyester Resins

TECHNICAL BROCHURE – UNSATURATED POLYESTER RESINS

GRADE : VBR 4513 – ISO SMC RESIN

VBR 4513 is a high reactive; medium viscous Isophthalic based SMC resin designed for the production of molding components. This resin shows good fiber and filler wetability with low shrinkage. This resin is suitable for use in ambient to high temperature DMC, SMC and casting applications.

PROPERTIES OF LIQUID RESIN	
Appearance	Pale yellowish clear liquid
Viscosity at 25° C, cP (Brookfield Viscometer LV DV II + Pro Spindle 63, rpm 60)	1600 – 2400
Density at 25° C g/cc	1.11 – 1.13
Acid value, mg KOH/gm	18 – 22
Volatile content, %	33 - 37
Shelf life at 25° C, months	3
Gel time at 25° C, minutes*	3 - 5
Peak exotherm, °C**	➤ 190
Reactivity Test with 1.3% TBPB @ 140 c	➤ 50 – 70 sec
	➤

* Mix VBR 4513 Resin - 100 gm, VBR 1201 – 1.5 ml, VBR 1204 - 1.5ml

** Under insulated Condition for 100 gm mixture.

Caution : VBR 1201 should never be independently mixed with VBR 1204, as this would cause explosion.

PROPERTIES OF UNREINFORCED CURED RESIN CASTING

The specimens are prepared by separately mixing 1.5% each of VBR 1201 and VBR 1204 with VBR 4513 and casted in a closed cell of specified dimension. These castings are cured for 24 hrs at room temperature and post cured at 90°C for 4 hrs.



PROPERTIES OF RESIN CASTING

Barcol Hardness	>40
Tensile Strength, MPa	> 45
Flexural Strength, MPa	> 70
Heat distortion temperature, °C	>90
Water Absorption at 25°C over a period of 700 hrs, %	0.50
Elongation at break, %	1.8 – 2.2

TEST METHOD

IS 6746 – 1994.

APPLICATION

VBR 4513 can be used for the production general purpose compression molding components. For specific application, suitable additive should be incorporated during compounding.

VBR 4513 is specifically meant for the production of small to large FRP products where high production rates are required. VBR 4513 is suitable for wide range of applications in the electrical and transportation industries where both heat and weather resistances are prime criteria.

STORAGE

VBR 4513 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 4513 is guaranteed for 3 months from the date of manufacture provided the storage conditions are strictly adhered to.

PACKING

35 Kg. HDPE carbuoys and 220 Kg. coated steel barrels.