



# Vasavibala Resins (P) Ltd.

## POLYMER DIVISION

Manufacturers of Unsaturated Polyester Resins  
No.44, (Old No.151), Eldams Road, Chennai – 600 018. INDIA  
Ph : 91-44-24358986, 24335105; Fax : 24363396,  
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### TECHNICAL BROCHURE - UNSATURATED POLYESTER RESINS

#### GRADE : VBR 4503FG – FOOD GRADE ISOPHTHALIC RESIN

VBR 4503FG is a versatile medium reactive isophthalic acid based polyester resin, suitable for high performance lamination applications. It is free from phthalate (Plasticizer). This resin exhibits excellent chemical and weather resistance along with good mechanical and electrical properties.

PROPERTIES OF LIQUID RESIN		
Appearance	:	Clear liquid
Colour (on Gardner scale, max)	:	3-5
Viscosity at 25°C, cps	:	400 – 600
Specific gravity at 25°C gm/ml	:	1.12 - 1.13
Acid value, mg KOH/gm	:	13 – 18
Volatile content, %	:	35 – 40
Shelf life at 25°C, months	:	3
Gel time at 25°C, minutes*	:	10 - 20
Peak exotherm, °C**	:	175 - 185

\* Mix - VBR 4503FG - 100 gm, VBR 1201 - 1.5ml, VBR 1204 - 1.5 ml

\*\* Under insulated condition for 50 gm mixture

**Caution** : VBR 1201 should never be independently mixed with VBR 1204, as this would case 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 4503FG 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)	:	40 – 45
Tensile strength, N/mm <sup>2</sup>	:	50 – 55
Flexural strength, N/mm <sup>2</sup>	:	85 - 85
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 4503FG 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 4503FG shows better dry heat stability than orthophthalate resins.

### TEST METHODS

BS 3532 – 1962, BS 2782 – 1957, IS 6746 - 1994

### APPLICATION

VBR-4503FG Food Grade Polyester Resin can be used for the manufacture of glass fiber Reinforced process equipment, storage tanks, transport tankers, pipe lines, lining Works etc. used in the Food and Pharmaceutical Industries. **Post curing at 90°C for Three hours is essential for such applications**

### STORAGE

VBR 4503FG 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 4503FG 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