

# VALOX<sup>TM</sup> FR RESIN V3504

REGION ASIA

## DESCRIPTION

VALOX V3504 is an unreinforced, flame retardant Polybutylene Terephthalate (PBT) injection moldable grade with excellent chemical resistance. It has a UL94V0@0.38mm and 5VA@3.0mm flame rating. This is a good candidate for thin wall applications in the electrical industry including bobbins, keyboards, switches and appliance housings.

## TYPICAL PROPERTY VALUES

Revision 20181012

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
<b>MECHANICAL</b>			
Tensile Stress, yield	57	MPa	SABIC - Japan Method
Tensile Stress, yld, Type I, 50 mm/min	58	MPa	ASTM D 638
Tensile Strain, break	16	%	SABIC - Japan Method
Tensile Strain, yld, Type I, 50 mm/min	7	%	ASTM D 638
Tensile Strain, brk, Type I, 50 mm/min	9	%	ASTM D 638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	90	MPa	ASTM D 790
Flexural Modulus, 1.3 mm/min, 50 mm span	2620	MPa	ASTM D 790
Tensile Stress, yield, 50 mm/min	58	MPa	ISO 527
Tensile Strain, break, 50 mm/min	8	%	ISO 527
Flexural Stress, yield, 2 mm/min	88	MPa	ISO 178
Flexural Modulus, 2 mm/min	2600	MPa	ISO 178
<b>IMPACT</b>			
Izod Impact, notched, 23°C	52	J/m	ASTM D 256
Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm	4	kJ/m <sup>2</sup>	ISO 179/1eA
<b>THERMAL</b>			
HDT, 1.82 MPa, 6.4 mm, unannealed	106	°C	ASTM D 648
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	80	°C	ISO 75/Af
Relative Temp Index, Elec	120	°C	UL 746B
Relative Temp Index, Mech w/impact	120	°C	UL 746B
Relative Temp Index, Mech w/o impact	140	°C	UL 746B
<b>PHYSICAL</b>			
Specific Gravity	1.4	-	ASTM D 792
Melt Flow Rate, 250°C/2.16 kgf	11	g/10 min	ASTM D 1238
Melt Volume Rate, MVR at 250°C/2.16 kg	8	cm <sup>3</sup> /10 min	ISO 1133
<b>ELECTRICAL</b>			
Arc Resistance, Tungsten {PLC}	6	PLC Code	ASTM D 495
Hot Wire Ignition {PLC}	4	PLC Code	UL 746A
High Voltage Arc Track Rate {PLC}	4	PLC Code	UL 746A
High Voltage Arc Resistance {PLC}	6	PLC Code	UL 746A
High Ampere Arc Ign, surface {PLC}	0	PLC Code	UL 746A
Comparative Tracking Index (UL) {PLC}	3	PLC Code	UL 746A
Volume Resistivity	1.E+15	Ohm-cm	IEC 60093
<b>FLAME CHARACTERISTICS</b>			

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
UL Recognized, 94V-0 Flame Class Rating	0.38	mm	UL 94
UL Recognized, 94-5VA Rating	3	mm	UL 94
Glow Wire Flammability Index 960°C, passes at	0.38	mm	IEC 60695-2-12
Glow Wire Ignitability Temperature, 0.4 mm	825	°C	IEC 60695-2-13
Glow Wire Ignitability Temperature, 1.0 mm	825	°C	IEC 60695-2-13
<b>INJECTION MOLDING</b>			
Drying Temperature	120	°C	
Drying Time	3 – 4	hrs	
Drying Time (Cumulative)	12	hrs	
Maximum Moisture Content	0.02	%	
Melt Temperature	245 – 260	°C	
Nozzle Temperature	240 – 255	°C	
Front - Zone 3 Temperature	245 – 260	°C	
Middle - Zone 2 Temperature	240 – 255	°C	
Rear - Zone 1 Temperature	230 – 250	°C	
Mold Temperature	50 – 75	°C	
Back Pressure	0.3 – 0.7	MPa	
Screw Speed	50 – 100	rpm	
Shot to Cylinder Size	40 – 80	%	
Vent Depth	0.013 – 0.025	mm	

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