

VALOX™ FR RESINS V4760

REGION ASIA

DESCRIPTION

VALOX V4760 is a 30% glass filled, high flow flame retardant Polybutylene Terephthalate (PBT) injection moldable grade with excellent chemical resistance. It has a UL94V0@0.28mm and 5VA@1.5mm flame rating. This is a good candidate for a variety of thin wall applications in the electrical industry including connectors, bobbins, and switches.

TYPICAL PROPERTY VALUES

Revision 20190628

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL			
Tensile Stress, yld, Type I, 5 mm/min	125	MPa	ASTM D638
Tensile Stress, brk, Type I, 5 mm/min	125	MPa	ASTM D638
Tensile Strain, yld, Type I, 5 mm/min	2.2	%	ASTM D638
Tensile Strain, brk, Type I, 5 mm/min	2.2	%	ASTM D638
Tensile Modulus, 5 mm/min	10500	MPa	ASTM D638
Flexural Stress, brk, 1.3 mm/min, 50 mm span	188	MPa	ASTM D790
Flexural Modulus, 1.3 mm/min, 50 mm span	9500	MPa	ASTM D790
Tensile Stress, yield, 5 mm/min	126	MPa	ISO 527
Tensile Stress, break, 5 mm/min	126	MPa	ISO 527
Tensile Strain, yield, 5 mm/min	2.2	%	ISO 527
Tensile Strain, break, 5 mm/min	2.2	%	ISO 527
Tensile Modulus, 1 mm/min	10700	MPa	ISO 527
Flexural Stress, break, 2 mm/min	190	MPa	ISO 178
Flexural Modulus, 2 mm/min	9500	MPa	ISO 178
IMPACT			
Charpy Impact, unnotched, 23°C	45	kJ/m ²	ISO 179/2C
Izod Impact, unnotched, 23°C	740	J/m	ASTM D4812
Izod Impact, notched, 23°C	76	J/m	ASTM D256
Izod Impact, notched, -30°C	77	J/m	ASTM D256
Izod Impact, unnotched 80*10*4 +23°C	38	kJ/m ²	ISO 180/1U
Izod Impact, notched 80*10*4 +23°C	7	kJ/m ²	ISO 180/1A
Izod Impact, notched 80*10*4 -30°C	8	kJ/m ²	ISO 180/1A
Charpy Impact, notched, 23°C	8	kJ/m ²	ISO 179/2C
Charpy Impact, notched, -30°C	8	kJ/m ²	ISO 179/2C
THERMAL			
Vicat Softening Temp, Rate B/50	202	°C	ASTM D1525
HDT, 1.82 MPa, 3.2mm, unannealed	209	°C	ASTM D648
HDT, 1.82 MPa, 6.4 mm, unannealed	211	°C	ASTM D648
CTE, -40°C to 40°C, flow	2.1E-05	1/°C	ASTM E831
CTE, -40°C to 40°C, xflow	7.1E-05	1/°C	ASTM E831
CTE, 23°C to 80°C, flow	1.9E-05	1/°C	ASTM E831
CTE, 23°C to 80°C, xflow	1.1E-04	1/°C	ASTM E831
CTE, -40°C to 40°C, flow	2.1E-05	1/°C	ISO 11359-2
CTE, -40°C to 40°C, xflow	7.1E-05	1/°C	ISO 11359-2

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
CTE, 23°C to 80°C, flow	1.5E-05	1 / °C	ISO 11359-2
CTE, 23°C to 80°C, xflow	1.2E-04	1 / °C	ISO 11359-2
Ball Pressure Test, approximate maximum	190	°C	IEC 60695-10-2
Vicat Softening Temp, Rate B/50	202	°C	ISO 306
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	207	°C	ISO 75/Af
Relative Temp Index, Elec	140	°C	UL 746B
Relative Temp Index, Mech w/impact	130	°C	UL 746B
Relative Temp Index, Mech w/o impact	140	°C	UL 746B
PHYSICAL			
Density	1.67	g/cm³	ASTM D792
Mold Shrinkage, flow	0.3	%	SABIC method
Mold Shrinkage, xflow	0.7	%	SABIC method
Water Absorption, 23°C/24hrs	0.24	%	SABIC method
Melt Volume Rate, MVR at 250°C/5.0 kg	28	cm³/10 min	ISO 1133
ELECTRICAL			
Volume Resistivity	2.2E+15	Ω.cm	ASTM D257
Surface Resistivity	2.6E+16	Ω	ASTM D257
Hot Wire Ignition {PLC}	3	PLC Code	UL 746A
High Ampere Arc Ign, surface {PLC}	0	PLC Code	UL 746A
Comparative Tracking Index (UL) {PLC}	2	PLC Code	UL 746A
Comparative Tracking Index	250	V	IEC 60112
FLAME CHARACTERISTICS			
UL Yellow Card Link	E207780-101521507	-	-
UL Yellow Card Link 2	E207780-102857903	-	-
UL Recognized, 94V-0 Flame Class Rating	0.28	mm	UL 94
UL Recognized, 94-5VA Flame Class Rating	1.5	mm	UL 94
Glow Wire Flammability Index 960°C, passes at	0.8	mm	IEC 60695-2-12
Glow Wire Ignitability Temperature, 0.4 mm	775	°C	IEC 60695-2-13
Glow Wire Ignitability Temperature, 0.8 mm	725	°C	IEC 60695-2-13
Glow Wire Ignitability Temperature, 1.0 mm	700	°C	IEC 60695-2-13
Glow Wire Ignitability Temperature, 2.0 mm	725	°C	IEC 60695-2-13
Glow Wire Ignitability Temperature, 3.0 mm	775	°C	IEC 60695-2-13
Oxygen Index (LOI)	30	%	ISO 4589
INJECTION MOLDING			
Drying Temperature	120	°C	
Drying Time	3 – 4	Hrs	
Drying Time (Cumulative)	12	Hrs	
Maximum Moisture Content	0.02	%	
Melt Temperature	255 – 275	°C	
Nozzle Temperature	250 – 270	°C	
Front - Zone 3 Temperature	255 – 275	°C	
Middle - Zone 2 Temperature	250 – 270	°C	
Rear - Zone 1 Temperature	245 – 265	°C	
Mold Temperature	65 – 90	°C	
Back Pressure	0.3 – 0.7	MPa	

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Screw Speed	50 – 80	rpm	
Shot to Cylinder Size	40 – 80	%	
Vent Depth	0.025 – 0.038	mm	

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