

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

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	