

VALOX* V3901WX Resin

SABIC Innovative Plastics - Polycarbonate + PBT

General Information			
Product Description			
PBT/PC blend - Unreinforced, Flame Retardant, Impact Modified, High flow. A UV-stabilized grade designed for outdoor enclosure applications, This grade is UL 746C F1 weatherable rated in all colors based upon high property retention.			
General			
Additive	• Ignition Resistant	• Impact Modifier	• UV Stabilizer
Features	• Flame Retardant	• High Flow	• Impact Modified
Uses	• Housings	• Outdoor Applications	
Forms	• Pellets		
Processing Method	• Injection Molding		
ASTM and ISO Properties ¹			
Physical	Nominal Value (English)	Nominal Value (SI)	Test Method
Specific Gravity			
--	1.30	1.30	ASTM D792
--	1.30 g/cm³	1.30 g/cm³	ISO 1183
Melt Mass-Flow Rate (MFR) (265°C/2.16 kg)	14 g/10 min	14 g/10 min	ASTM D1238
Melt Volume-Flow Rate (MVR) (265°C/2.16 kg)	0.732 in³/10min	12.0 cm³/10min	ISO 1133
Molding Shrinkage - Flow (0.126 in (3.20 mm))	0.0070 to 0.010 in/in	0.70 to 1.0 %	ASTM D955
Water Absorption			ISO 62
Saturation, 73°F (23°C)	0.10 %	0.10 %	
Equilibrium, 73°F (23°C), 50% RH	0.030 %	0.030 %	
Mechanical	Nominal Value (English)	Nominal Value (SI)	Test Method
Tensile Modulus			
-- ²	319000 psi	2200 MPa	ASTM D638
--	304000 psi	2100 MPa	ISO 527-2/1
Tensile Strength			
Yield ³	7690 psi	53.0 MPa	ASTM D638
Yield	7400 psi	51.0 MPa	ISO 527-2/50
Break ³	6240 psi	43.0 MPa	ASTM D638
Break	5800 psi	40.0 MPa	ISO 527-2/50
Tensile Elongation			
Yield ³	5.0 %	5.0 %	ASTM D638
Yield	4.0 %	4.0 %	ISO 527-2/50
Break ³	50 %	50 %	ASTM D638
Break	42 %	42 %	ISO 527-2/50
Flexural Modulus			
1.97 in (50.0 mm) Span ⁴	319000 psi	2200 MPa	ASTM D790
-- ⁵	310000 psi	2130 MPa	ISO 178
Flexural Strength			
-- ^{5, 6}	10600 psi	73.0 MPa	ISO 178
Yield, 1.97 in (50.0 mm) Span ⁴	11600 psi	80.0 MPa	ASTM D790

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Impact	Nominal Value (English)	Nominal Value (SI)	Test Method
Charpy Notched Impact Strength (73°F (23°C))	24.7 ft-lb/in ²	52.0 kJ/m ²	ISO 179/1eA
Notched Izod Impact			
-22°F (-30°C)	2.06 ft-lb/in	110 J/m	ASTM D256
73°F (23°C)	15.0 ft-lb/in	800 J/m	ASTM D256
-22°F (-30°C)	4.00 ft-lb/in ²	8.40 kJ/m ²	ISO 180/1A
73°F (23°C)	19.5 ft-lb/in ²	41.0 kJ/m ²	ISO 180/1A
Instrumented Dart Impact			ASTM D3763
73°F (23°C), Total Energy	443 in-lb	50.0 J	
Thermal	Nominal Value (English)	Nominal Value (SI)	Test Method
Deflection Temperature Under Load			
264 psi (1.8 MPa), Unannealed, 0.126 in (3.20 mm)	167 °F	75.0 °C	ASTM D648
264 psi (1.8 MPa), Unannealed, 0.252 in (6.40 mm)	205 °F	96.0 °C	ASTM D648
264 psi (1.8 MPa), Unannealed, 2.52 in (64.0 mm) Span ⁷	171 °F	77.0 °C	ISO 75-2/Af
Vicat Softening Temperature			
--	221 °F	105 °C	ASTM D1525 ⁸
--	251 °F	122 °C	ISO 306/B50
--	255 °F	124 °C	ISO 306/B120
CLTE			ASTM E831 ISO 11359-2
Flow: -40 to 104°F (-40 to 40°C)	0.000049 in/in/°F	0.000088 cm/cm/°C	
Transverse: -40 to 104°F (-40 to 40°C)	0.000050 in/in/°F	0.000090 cm/cm/°C	
Electrical	Nominal Value (English)	Nominal Value (SI)	Test Method
Surface Resistivity	0.0 ohms	0.0 ohms	ASTM D257
Volume Resistivity	0.0 ohm-cm	0.0 ohm-cm	ASTM D257
Dielectric Strength			ASTM D149
0.126 in (3.20 mm), in Oil	0.00 V/mil	0.00 kV/mm	
Dielectric Constant			ASTM D150
50 Hz	0.000	0.000	
60 Hz	0.000	0.000	
1E+6 Hz	0.000	0.000	
Dissipation Factor			ASTM D150
50 Hz	0.0	0.0	
60 Hz	0.0	0.0	
1E+6 Hz	0.0	0.0	
Arc Resistance (PLC) ⁹	PLC 0	PLC 0	ASTM D495

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Flammability	Nominal Value (English)	Nominal Value (SI)	Test Method
Flame Rating - UL			UL 94
0.00 in (0.00 mm), Testing by SABIC	• HB • V-2 • V-1 • 5VB	• HB • V-2 • V-1 • 5VB	
0.0591 in (1.50 mm), Testing by SABIC	V-0	V-0	
0.118 in (3.00 mm), Testing by SABIC	5VA	5VA	
UL 746	Nominal Value (English)	Nominal Value (SI)	Test Method
RTI Str	248 °F	120 °C	UL 746
RTI Imp	248 °F	120 °C	UL 746
RTI Elec	248 °F	120 °C	UL 746
Comparative Tracking Index (CTI) (PLC)	PLC 0	PLC 0	UL 746
High Voltage Arc Tracking Rate (HVTR) (PLC)			UL 746
--	PLC 0	PLC 0	
Hot-wire Ignition (HWI) (PLC)	PLC 0	PLC 0	UL 746
High Amp Arc Ignition (HAI) (PLC)	PLC 0	PLC 0	UL 746
High Voltage Arc Resistance to Ignition (HVAR) (PLC)			UL 746
--	PLC 0	PLC 0	
Processing Information			
Injection	Nominal Value (English)	Nominal Value (SI)	
Drying Temperature	250 °F	121 °C	
Drying Time	3.0 to 4.0 hr	3.0 to 4.0 hr	
Drying Time, Maximum	12 hr	12 hr	
Suggested Max Moisture	0.020 %	0.020 %	
Suggested Shot Size	40 to 80 %	40 to 80 %	
Rear Temperature	460 to 490 °F	238 to 254 °C	
Middle Temperature	470 to 500 °F	243 to 260 °C	
Front Temperature	480 to 510 °F	249 to 266 °C	
Nozzle Temperature	470 to 500 °F	243 to 260 °C	
Processing (Melt) Temp	480 to 510 °F	249 to 266 °C	
Mold Temperature	150 to 190 °F	65.6 to 87.8 °C	
Back Pressure	50.0 to 100.0 psi	0.345 to 0.689 MPa	
Screw Speed	50 to 80 rpm	50 to 80 rpm	
Vent Depth	0.0010 to 0.0015 in	0.025 to 0.038 mm	