

## Valox\* Resin V3901WX

### Americas: COMMERCIAL

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.

TYPICAL PROPERTIES <sup>1</sup>	TYPICAL VALUE	UNIT	STANDARD
<b>MECHANICAL</b>			
Tensile Stress, yld, Type I, 50 mm/min	540	kgf/cm <sup>2</sup>	ASTM D 638
Tensile Stress, brk, Type I, 50 mm/min	430	kgf/cm <sup>2</sup>	ASTM D 638
Tensile Strain, yld, Type I, 50 mm/min	5	%	ASTM D 638
Tensile Strain, brk, Type I, 50 mm/min	50	%	ASTM D 638
Tensile Modulus, 5 mm/min	22400	kgf/cm <sup>2</sup>	ASTM D 638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	810	kgf/cm <sup>2</sup>	ASTM D 790
Flexural Modulus, 1.3 mm/min, 50 mm span	22400	kgf/cm <sup>2</sup>	ASTM D 790
Tensile Stress, yield, 50 mm/min	51	MPa	ISO 527
Tensile Stress, break, 50 mm/min	40	MPa	ISO 527
Tensile Strain, yield, 50 mm/min	4	%	ISO 527
Tensile Strain, break, 50 mm/min	42	%	ISO 527
Tensile Modulus, 1 mm/min	2090	MPa	ISO 527
Flexural Stress, yield, 2 mm/min	73	MPa	ISO 178
Flexural Modulus, 2 mm/min	2130	MPa	ISO 178
<b>IMPACT</b>			
Izod Impact, notched, 23°C	81	cm-kgf/cm	ASTM D 256
Izod Impact, notched, -30°C	11	cm-kgf/cm	ASTM D 256
Instrumented Impact Total Energy, 23°C	509	cm-kgf	ASTM D 3763
Izod Impact, notched 80*10*4 +23°C	41	kJ/m <sup>2</sup>	ISO 180/1A
Izod Impact, notched 80*10*4 -30°C	8	kJ/m <sup>2</sup>	ISO 180/1A
Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm	52	kJ/m <sup>2</sup>	ISO 179/1eA
<b>THERMAL</b>			
Vicat Softening Temp, Rate B/50	105	°C	ASTM D 1525

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2) Only typical data for material selection purpose. Not to be used for part or tool design.

3) This rating is not intended to reflect hazards presented this or any other material under actual fire conditions.

4) Own measurement according to UL.

Source, GMD, Last Update: 07/13/2007

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TYPICAL PROPERTIES <sup>1</sup>	TYPICAL VALUE	UNIT	STANDARD
<b>THERMAL</b>			
HDT, 1.82 MPa, 3.2mm, unannealed	75	°C	ASTM D 648
HDT, 1.82 MPa, 6.4 mm, unannealed	96	°C	ASTM D 648
CTE, -40°C to 40°C, flow	8.84E-05	1/°C	ASTM E 831
CTE, -40°C to 40°C, xflow	8.97E-05	1/°C	ASTM E 831
CTE, -40°C to 40°C, flow	8.84E-05	1/°C	ISO 11359-2
CTE, -40°C to 40°C, xflow	8.97E-05	1/°C	ISO 11359-2
Vicat Softening Temp, Rate B/50	121	°C	ISO 306
Vicat Softening Temp, Rate B/120	123	°C	ISO 306
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	77	°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	120	°C	UL 746B
<b>PHYSICAL</b>			
Specific Gravity	1.3	-	ASTM D 792
Mold Shrinkage, flow, 3.2 mm	0.7 - 1	%	SABIC Method
Melt Flow Rate, 265°C/2.16kg	14	g/10 min	ASTM D 1238
Density	1.3	g/cm <sup>3</sup>	ISO 1183
Water Absorption, (23°C/sat)	0.1	%	ISO 62
Moisture Absorption (23°C / 50% RH)	0.03	%	ISO 62
Melt Volume Rate, MVR at 265°C/2.16 kg	12	cm <sup>3</sup> /10 min	ISO 1133
<b>ELECTRICAL</b>			
Volume Resistivity		Ohm-cm	ASTM D 257
Surface Resistivity		Ohm	ASTM D 257
Dielectric Strength, in oil, 3.2 mm		kV/mm	ASTM D 149
Relative Permittivity, 50/60 Hz		-	ASTM D 150

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TYPICAL PROPERTIES <sup>1</sup>	TYPICAL VALUE	UNIT	STANDARD
<b>ELECTRICAL</b>			
Relative Permittivity, 1 MHz		-	ASTM D 150
Dissipation Factor, 50/60 Hz		-	ASTM D 150
Dissipation Factor, 1 MHz		-	ASTM D 150
Arc Resistance, Tungsten {PLC}		PLC Code	ASTM D 495
Hot Wire Ignition {PLC}		PLC Code	UL 746A
High Voltage Arc Track Rate {PLC}		PLC Code	UL 746A
High Voltage Arc Resistance {PLC}		PLC Code	UL 746A
High Ampere Arc Ign, surface {PLC}		PLC Code	UL 746A
Comparative Tracking Index (UL) {PLC}		PLC Code	UL 746A
<b>FLAME CHARACTERISTICS</b>			
UL Compliant, 94HB Flame Class Rating (3)(4)		mm	UL 94 by GE
UL Compliant, 94HB Flame Class Rating 2nd value (3)(4)		mm	UL 94 by GE
UL Compliant, 94V-2 Flame Class Rating (3)(4)		mm	UL 94 by GE
UL Compliant, 94V-1 Flame Class Rating (3)(4)		mm	UL 94 by GE
UL Compliant, 94V-0 Flame Class Rating (3)(4)	1.5	mm	UL 94 by GE
UL Compliant, 94-5VA Rating (3)(4)	3	mm	UL 94 by GE
UL Compliant, 94-5VB Rating (3)(4)		mm	UL 94 by GE

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PROCESSING PARAMETERS	TYPICAL VALUE	UNIT
<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	250 - 265	°C
Nozzle Temperature	245 - 260	°C
Front - Zone 3 Temperature	250 - 265	°C
Middle - Zone 2 Temperature	245 - 260	°C
Rear - Zone 1 Temperature	240 - 255	°C
Mold Temperature	65 - 90	°C
Back Pressure	0.3 - 0.7	MPa
Screw Speed	50 - 80	rpm
Shot to Cylinder Size	40 - 80	%
Vent Depth	0.025 - 0.038	mm

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