VALOX™ Resin 357X

Europe-Africa-Middle East: COMMERCIAL

VALOX 357X is an impact modified, flame retarted PBT+PC blend. Applications like bobbins, switches and enclosures.

TYPICAL PROPERTIES[1]	TYPICAL VALUE	Unit	Standard
MECHANICAL			
Tensile Stress, yld, Type I, 50 mm/min	50	MPa	ASTM D 638
Tensile Stress, brk, Type I, 50 mm/min	40	MPa	ASTM D 638
Tensile Strain, yld, Type I, 50 mm/min	5	%	ASTM D 638
Tensile Strain, brk, Type I, 50 mm/min	30	%	ASTM D 638
Tensile Modulus, 50 mm/min	2000	MPa	ASTM D 638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	78	MPa	ASTM D 790
Flexural Modulus, 1.3 mm/min, 50 mm span	2100	MPa	ASTM D 790
Taber Abrasion, CS-17, 1 kg	33	mg/1000cy	SABIC Method
Tensile Stress, yield, 50 mm/min	50	MPa	ISO 527
Tensile Stress, break, 50 mm/min	40	MPa	ISO 527
Tensile Strain, yield, 50 mm/min	5	%	ISO 527
Tensile Strain, break, 50 mm/min	30	%	ISO 527
Tensile Modulus, 1 mm/min	2200	MPa	ISO 527
Flexural Stress, yield, 2 mm/min	80	MPa	ISO 178
Flexural Modulus, 2 mm/min	2000	MPa	ISO 178
Hardness, H358/30	115	MPa	ISO 2039-1
Hardness, Rockwell R	115	-	ISO 2039-2
IMPACT			
Charpy Impact, unnotched, 23°C	NB	kJ/m²	ISO 179/2C
Charpy Impact, unnotched, -30°C	NB	kJ/m²	ISO 179/2C
Izod Impact, unnotched, 23°C	NB	J/m	ASTM D 4812
Izod Impact, unnotched, -30°C	NB	J/m	ASTM D 4812

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(4) Internal measurements according to UL standards.
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(6) Needs hard coat to consistently pass 60 sec Vertical Burn.

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IMPACT			
Izod Impact, notched, 23°C	500	J/m	ASTM D 256
Izod Impact, notched, 0°C	190	J/m	ASTM D 256
Izod Impact, notched, -30°C	150	J/m	ASTM D 256
Instrumented Impact Total Energy, 23°C	35	J	ASTM D 3763
Izod Impact, unnotched 80*10*4 +23°C	NB	kJ/m²	ISO 180/1U
Izod Impact, unnotched 80*10*4 -30°C	NB	kJ/m²	ISO 180/1U
Izod Impact, notched 80*10*4 +23°C	40	kJ/m²	ISO 180/1A
Izod Impact, notched 80*10*4 0°C	20	kJ/m²	ISO 180/1A
Izod Impact, notched 80*10*4 -30°C	15	kJ/m²	ISO 180/1A
Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm	45	kJ/m²	ISO 179/1eA
Charpy Impact, notched, 23°C	40	kJ/m²	ISO 179/2C
Charpy -30°C, V-notch Edgew 80*10*4 sp=62mm	20	kJ/m²	ISO 179/1eA
Charpy Impact, notched, -30°C	20	kJ/m²	ISO 179/2C
Charpy 23°C, Unnotch Edgew 80*10*4 sp=62mm	NB	kJ/m²	ISO 179/1eU
Charpy -30°C, Unnotch Edgew 80*10*4 sp=62mm	NB	kJ/m²	ISO 179/1eU
THERMAL			
Vicat Softening Temp, Rate A/50	180	°C	ASTM D 1525
Vicat Softening Temp, Rate B/50	145	°C	ASTM D 1525
HDT, 0.45 MPa, 3.2 mm, unannealed	130	°C	ASTM D 648
HDT, 1.82 MPa, 3.2mm, unannealed	85	°C	ASTM D 648
CTE, -40°C to 40°C, flow	9.18E-05	1/°C	ASTM E 831
CTE, -40°C to 40°C, xflow	8.4E-05	1/°C	ASTM E 831
Thermal Conductivity	0.17	W/m-°C	ISO 8302
CTE, 23°C to 80°C, flow	1.E-04	1/°C	ISO 11359-2

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THERMAL			
CTE, 23°C to 80°C, xflow	1.E-04	1/°C	ISO 11359-2
Ball Pressure Test, 125°C +/- 2°C	PASSES	-	IEC 60695-10-2
Vicat Softening Temp, Rate A/50	180	°C	ISO 306
Vicat Softening Temp, Rate B/50	145	°C	ISO 306
Vicat Softening Temp, Rate B/120	150	°C	ISO 306
HDT/Be, 0.45MPa Edgew 120*10*4 sp=100mm	135	°C	ISO 75/Be
HDT/Ae, 1.8 MPa Edgew 120*10*4 sp=100mm	85	°C	ISO 75/Ae
HDT/Bf, 0.45 MPa Flatw 80*10*4 sp=64mm	130	°C	ISO 75/Bf
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	85	°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
PHYSICAL			
Specific Gravity	1.34	-	ASTM D 792
Mold Shrinkage on Tensile Bar, flow (2) (5)	1.1 - 1.8	%	SABIC Method
Mold Shrinkage, flow, 3.2 mm (5)	1 - 1.4	%	SABIC Method
Mold Shrinkage on Tensile Bar, xflow (2) (5)	0.9 - 1.8	%	SABIC Method
Melt Flow Rate, 250°C/5.0 kgf	9.6	g/10 min	ASTM D 1238
Melt Flow Rate, 265°C/5.0 kgf	13	g/10 min	ASTM D 1238
Melt Flow Rate, 266°C/5.0 kgf	13	g/10 min	ASTM D 1238
Density	1.34	g/cm³	ISO 1183
Water Absorption, (23°C/sat)	0.5	%	ISO 62
Moisture Absorption (23°C / 50% RH)	0.15	%	ISO 62
Melt Volume Rate, MVR at 250°C/5.0 kg	8	cm³/10 min	ISO 1133
Melt Volume Rate, MVR at 265°C/5.0 kg	10	cm³/10 min	ISO 1133
Melt Viscosity, 260°C, 1500 sec-1	310	Pa-s	ISO 11443
ELECTRICAL			
Volume Resistivity	>1.E+15	Ohm-cm	ASTM D 257

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ELECTRICAL			
Dielectric Strength, in oil, 1.6 mm	25	kV/mm	ASTM D 149
Dielectric Strength, in oil, 3.2 mm	17	kV/mm	ASTM D 149
Relative Permittivity, 1 MHz	3	-	ASTM D 150
Dissipation Factor, 1 MHz	0.013	-	ASTM D 150
Arc Resistance, Tungsten {PLC}	6	PLC Code	ASTM D 495
Hot Wire Ignition {PLC)	3	PLC Code	UL 746A
High Voltage Arc Track Rate {PLC}	3	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
Surface Resistivity, ROA	>1.E+15	Ohm	IEC 60093
Dielectric Strength, in oil, 0.8 mm	34	kV/mm	IEC 60243-1
Dielectric Strength, in oil, 1.6 mm	25	kV/mm	IEC 60243-1
Dielectric Strength, in oil, 3.2 mm	17	kV/mm	IEC 60243-1
Relative Permittivity, 1 MHz	3	-	IEC 60250
Dissipation Factor, 50/60 Hz	0.002	-	IEC 60250
Dissipation Factor, 1 MHz	0.0013	-	IEC 60250
Comparative Tracking Index	225	V	IEC 60112
Comparative Tracking Index, M	100	V	IEC 60112
Relative Permittivity, 50/60 Hz	3	-	IEC 60250
FLAME CHARACTERISTICS			
UL Recognized, 94V-0 Flame Class Rating (3)	0.75	mm	UL 94
UL Recognized, 94-5VA Rating (3)	2.5	mm	UL 94
Glow Wire Flammability Index 960°C, passes at	1	mm	IEC 60695-2-12
Glow Wire Ignitability Temperature, 1.0 mm	825	°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	700	°C	IEC 60695-2-13

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FLAME CHARACTERISTICS			
Oxygen Index (LOI)	30	%	ISO 4589

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PROCESSING PARAMETERS	TYPICAL VALUE	Unit
Injection Molding		
Drying Temperature	110 - 120	°C
Drying Time	2 - 4	hrs
Maximum Moisture Content	0.02	%
Melt Temperature	250 - 270	°C
Nozzle Temperature	240 - 260	°C
Front - Zone 3 Temperature	245 - 265	°C
Middle - Zone 2 Temperature	240 - 255	°C
Rear - Zone 1 Temperature	230 - 245	°C
Hopper Temperature	40 - 60	°C
Mold Temperature	40 - 100	°C

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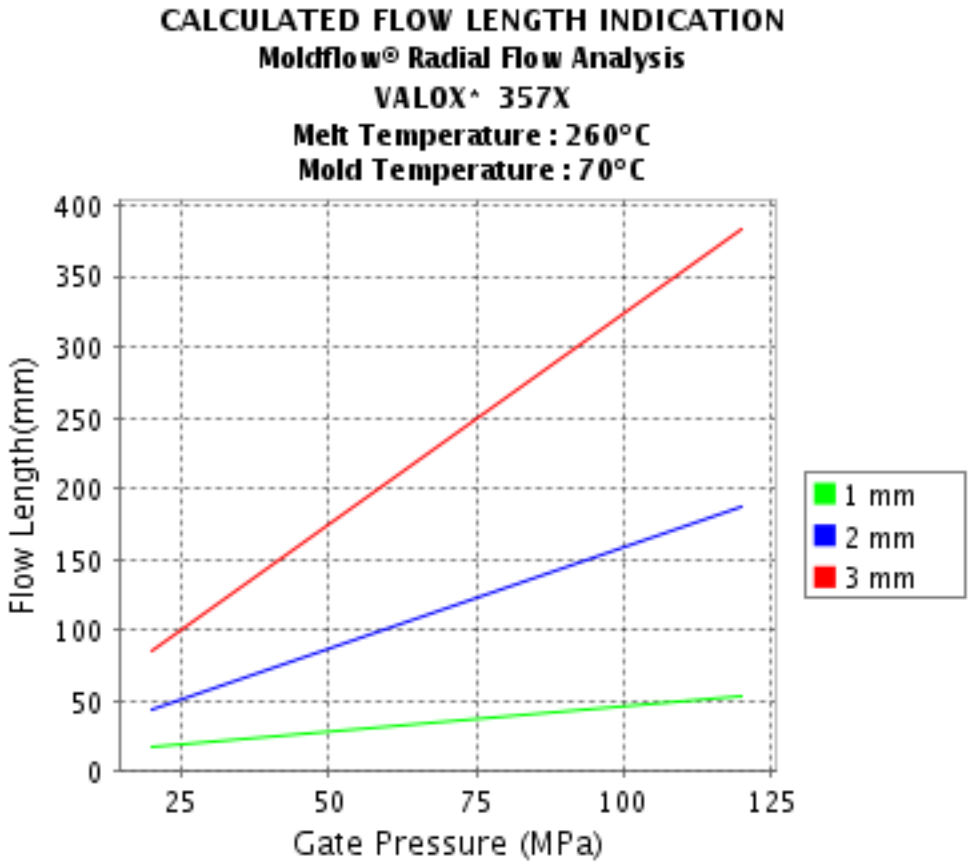

Note: Technical support is recommended if Gate Pressure is greater than 80 MPa. Contact your local representative.

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