

VALOX™ FR RESINS V3900WX

REGION AMERICAS

DESCRIPTION

VALOX V3900WX is an unreinforced, UV stabilized, weatherable, impact modified flame retardant Polybutylene Terephthalate/Polycarbonate (PBT) injection moldable grade. It has excellent chemical resistance and a UL94V0@1.5mm and 5VA@3.0mm flame rating. This is an excellent candidate for a wide variety of applications including outdoor enclosures requiring UL746C F1 weatherability performance.

TYPICAL PROPERTY VALUES

Revision 20190628

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL			
Tensile Stress, yield	48	MPa	SABIC - Japan Method
Tensile Stress, yld, Type I, 50 mm/min	53	MPa	ASTM D638
Tensile Stress, brk, Type I, 50 mm/min	43	MPa	ASTM D638
Tensile Strain, break	250	%	SABIC - Japan Method
Tensile Strain, yld, Type I, 50 mm/min	5	%	ASTM D638
Tensile Strain, brk, Type I, 50 mm/min	50	%	ASTM D638
Tensile Modulus, 5 mm/min	2200	MPa	ASTM D638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	80	MPa	ASTM D790
Flexural Modulus, 1.3 mm/min, 50 mm span	2200	MPa	ASTM D790
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
IMPACT			
Izod Impact, notched, 23°C	800	J/m	ASTM D256
Izod Impact, notched, -30°C	110	J/m	ASTM D256
Instrumented Dart Impact Total Energy, 23°C	50	J	ASTM D3763
Instrumented Impact Total Energy, -40°C	50	J	ASTM D3763
Izod Impact, notched 80*10*4 +23°C	45	kJ/m ²	ISO 180/1A
Izod Impact, notched 80*10*4 -30°C	8	kJ/m ²	ISO 180/1A
Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm	52	kJ/m ²	ISO 179/1eA
THERMAL			
Vicat Softening Temp, Rate B/50	105	°C	ASTM D1525
HDT, 1.82 MPa, 3.2mm, unannealed	75	°C	ASTM D648
HDT, 0.45 MPa, 6.4 mm, unannealed	119	°C	ASTM D648
HDT, 1.82 MPa, 6.4 mm, unannealed	96	°C	ASTM D648
CTE, -40°C to 40°C, flow	8.84E-05	1/°C	ASTM E831
CTE, -40°C to 40°C, xflow	8.97E-05	1/°C	ASTM E831
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
Ball Pressure Test, 125°C +/- 2°C	PASSES	-	IEC 60695-10-2

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
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
PHYSICAL			
Specific Gravity	1.3	-	ASTM D792
Mold Shrinkage, flow, 3.2 mm	0.7 – 1	%	SABIC method
Melt Flow Rate, 265°C/2.16kgf	11	g/10 min	ASTM D1238
Density	1.3	g/cm³	ISO 1183
Water Absorption, (23°C/saturated)	0.1	%	ISO 62-1
Moisture Absorption (23°C / 50% RH)	0.03	%	ISO 62
Melt Volume Rate, MVR at 265°C/2.16 kg	11	cm³/10 min	ISO 1133
ELECTRICAL			
Surface Resistivity	6.02E+16	Ω	ASTM D257
Dissipation Factor, 1 MHz	0.0199	-	ASTM D150
FLAME CHARACTERISTICS			
UL Yellow Card Link	E121562-498685	-	-
UL Recognized, 94V-0 Flame Class Rating	1.5	mm	UL 94
UL Recognized, 94-5VA Flame Class Rating	3	mm	UL 94
Glow Wire Flammability Index 960°C, passes at	1	mm	IEC 60695-2-12
Glow Wire Flammability Index 960°C, passes at, by VDE	3	mm	IEC 60695-2-12
Glow Wire Ignitability Temperature, 1.0 mm	825	°C	IEC 60695-2-13
Glow Wire Ignitability Temperature, 3.0 mm	725	°C	IEC 60695-2-13
UV-light, water exposure/immersion	F1	-	UL 746C
INJECTION MOLDING			
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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