VALOX™ 420SE0 resin

Polybutylene Terephthalate

SABIC Innovative Plastics

Message:

30% glass reinforced, UL94 V-0/5V rated. Numerous applications: edge trimmers, food mixer motor stator and commutator, cooling fan, connectors, bobbins, switches etc

General Information		
UL YellowCard	E121562-101092083	E121562-101513781
Filler / Reinforcement	Glass Fiber,30% Filler by Weight	
Uses	Connectors Switches	
Processing Method	Injection Molding	
Multi-Point Data	Flexural DMA (ASTM D4065) Instrumented Impact (Energy) (ASTM D3763) Instrumented Impact (Load) (ASTM D3763) Shear DMA (ASTM D4065) Specific Heat vs. Temperature (ASTM D3417) Tensile Creep (ASTM D2990) Tensile Fatigue Tensile Stress vs. Strain (ASTM D638) Viscosity vs. Shear Rate (ASTM D3835)	

Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.63	g/cm³	ASTM D792, ISO 1183
Specific Volume	0.610	cm³/g	ASTM D792
Melt Mass-Flow Rate (MFR) (250°C/5.0 kg)	42	g/10 min	ASTM D1238
Melt Volume-Flow Rate (MVR) (250°C/5.0 kg)	29.0	cm³/10min	ISO 1133
Molding Shrinkage			Internal Method
Flow [1]	0.10 to 0.50	%	
Flow : 3.20 mm	0.50 to 0.70	%	
Across Flow [2]	0.40 to 0.80	%	
Across Flow : 3.20 mm	0.50 to 1.0	%	
Water Absorption			ISO 62
Saturation, 23°C	0.090	%	
Equilibrium, 23°C, 50% RH	0.070	%	
Outdoor Suitability	f2		UL 746C

Hardness	Nominal Value	Unit	Test Method
Rockwell Hardness (R-Scale)	119		ASTM D785, ISO 2039-2

Ball Indentation Hardness (H 358/30)	118	MPa	ISO 2039-1
Mechanical	**Nominal Value**	**Unit**	**Test Method**
Tensile Modulus			
-- [3]	12000	MPa	ASTM D638
--	10000	MPa	ISO 527-2/1
Tensile Strength			
Yield [4]	120	MPa	ASTM D638
Yield	120	MPa	ISO 527-2/5
Break [5]	120	MPa	ASTM D638
Break	120	MPa	ISO 527-2/5
Tensile Elongation			
Yield [6]	2.0	%	ASTM D638
Yield	1.9	%	ISO 527-2/5
Break [7]	2.0	%	ASTM D638
Break	1.9	%	ISO 527-2/5
Flexural Modulus			
50.0 mm Span [8]	9800	MPa	ASTM D790
-- [9]	9500	MPa	ISO 178
Flexural Stress			
--	180	MPa	ISO 178
Break, 50.0 mm Span [10]	186	MPa	ASTM D790
Taber Abrasion Resistance (1000 Cycles, 1000 g, CS-17 Wheel)	22.0	mg	Internal Method
Impact	**Nominal Value**	**Unit**	**Test Method**
Charpy Notched Impact Strength [11]			ISO 179/1eA
-30°C	6.0	kJ/m²	
23°C	7.0	kJ/m²	
Charpy Unnotched Impact Strength [12]			ISO 179/1eU
-30°C	50	kJ/m²	
23°C	50	kJ/m²	
Notched Izod Impact			
-30°C	57	J/m	ASTM D256
23°C	60	J/m	ASTM D256
-30°C [13]	6.0	kJ/m²	ISO 180/1A
23°C [14]	7.0	kJ/m²	ISO 180/1A
Unnotched Izod Impact			
23°C	620	J/m	ASTM D4812
-30°C [15]	45	kJ/m²	ISO 180/1U
23°C [16]	45	kJ/m²	ISO 180/1U
Instrumented Dart Impact (23°C, Total Energy)	5.00	J	ASTM D3763
Thermal	**Nominal Value**	**Unit**	**Test Method**
Deflection Temperature Under Load			

0.45 MPa, Unannealed, 3.20 mm	212	°C	ASTM D648
0.45 MPa, Unannealed, 100 mm Span [17]	220	°C	ISO 75-2/Be
1.8 MPa, Unannealed, 3.20 mm	200	°C	ASTM D648
1.8 MPa, Unannealed, 100 mm Span [18]	195	°C	ISO 75-2/Ae
1.8 MPa, Unannealed, 64.0 mm Span [19]	200	°C	ISO 75-2/Af
Vicat Softening Temperature			
--	200	°C	ASTM D1525, ISO 306/B50, ISO 306/B120 [20]
--	220	°C	ISO 306/A50
Ball Pressure Test (125°C)	Pass		IEC 60695-10-2
CLTE			
Flow : -40 to 40°C	2.5E-5	cm/cm/°C	ASTM E831, ISO 11359-2
Flow : 23 to 80°C	2.5E-5	cm/cm/°C	ISO 11359-2
Transverse : -40 to 40°C	8.9E-5	cm/cm/°C	ASTM E831, ISO 11359-2
Transverse : 23 to 80°C	1.2E-4	cm/cm/°C	ISO 11359-2
Thermal Conductivity	0.25	W/m/K	ISO 8302
RTI Elec	130	°C	UL 746
RTI Imp	130	°C	UL 746
RTI Str	140	°C	UL 746
Electrical	**Nominal Value**	**Unit**	**Test Method**
Surface Resistivity	> 1.0E+15	ohms	IEC 60093
Volume Resistivity	> 1.0E+15	ohms·cm	ASTM D257, IEC 60093
Dielectric Strength			
1.60 mm, in Oil	24	kV/mm	ASTM D149
3.20 mm, in Air	19	kV/mm	ASTM D149
0.800 mm, in Oil	23	kV/mm	IEC 60243-1
1.60 mm, in Oil	22	kV/mm	IEC 60243-1
3.20 mm, in Oil	16	kV/mm	IEC 60243-1
Dielectric Constant			
100 Hz	3.80		ASTM D150, IEC 60250
1 MHz	3.70		ASTM D150
50 Hz	3.30		IEC 60250
60 Hz	3.30		IEC 60250
1 MHz	3.30		IEC 60250
Dissipation Factor			
100 Hz	2.0E-3		ASTM D150, IEC 60250
1 MHz	0.020		ASTM D150
50 Hz	1.0E-3		IEC 60250
60 Hz	1.0E-3		IEC 60250
1 MHz	0.010		IEC 60250
Arc Resistance [21]	PLC 6		ASTM D495
Comparative Tracking Index (CTI)	PLC 3		UL 746

Comparative Tracking Index			IEC 60112
--	175	V	
Solution B	125	V	
High Amp Arc Ignition (HAI)	PLC 0		UL 746
High Voltage Arc Tracking Rate (HVTR)	PLC 4		UL 746
Hot-wire Ignition (HWI)	PLC 2		UL 746
Flammability	**Nominal Value**	**Unit**	**Test Method**
Flame Rating			UL 94
0.400 mm	V-2		
0.710 mm	V-0		
2.00 mm	5VA		
Glow Wire Flammability Index (1.00 mm)	960	°C	IEC 60695-2-12
Oxygen Index	32	%	ISO 4589-2
Injection	**Nominal Value**	**Unit**	
Drying Temperature	121	°C	
Drying Time	3.0 to 4.0	hr	
Drying Time, Maximum	12	hr	
Suggested Max Moisture	0.020	%	
Suggested Shot Size	40 to 80	%	
Rear Temperature	243 to 266	°C	
Middle Temperature	249 to 271	°C	
Front Temperature	254 to 277	°C	
Nozzle Temperature	249 to 271	°C	
Processing (Melt) Temp	254 to 277	°C	
Mold Temperature	65.6 to 87.8	°C	
Back Pressure	0.345 to 0.689	MPa	
Screw Speed	50 to 80	rpm	
Vent Depth	0.025 to 0.038	mm	
NOTE			
1.	Tensile Bar		
2.	Tensile Bar		
3.	5.0 mm/min		
4.	Type I, 5.0 mm/min		
5.	Type I, 5.0 mm/min		
6.	Type I, 5.0 mm/min		
7.	Type I, 5.0 mm/min		
8.	1.3 mm/min		
9.	2.0 mm/min		
10.	1.3 mm/min		
11.	80*10*4 sp=62mm		
12.	80*10*4 sp=62mm		
13.	80*10*4		

14.	80*10*4
15.	80*10*4
16.	80*10*4
17.	120*10*4 mm
18.	120*10*4 mm
19.	80*10*4 mm
20.	Rate B (120°C/h), Loading 2 (50 N)
21.	Tungsten Electrode

Recommended distributors for this material

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