

VALOX™ 357 resin

Polycarbonate + PBT

SABIC Innovative Plastics

Message:

PBT+PC, UL94V-0/5VA Rated, Impact Modified, Opaque, Unreinforced. Applications like bobbins, switches and enclosures.

General Information		
UL YellowCard	E121562-100036617	E121562-220786
Additive	Impact Modifier	
Features	Impact Modified	
Uses	Bobbins	
	Housings	
	Switches	
Appearance	Opaque	
Processing Method	Injection Molding	
Multi-Point Data	Compressive Stress vs. Strain (ASTM D695)	
	Elastic Modulus vs Temperature (ASTM D4065)	
	Flexural DMA (ASTM D4065)	
	Pressure-Volume-Temperature (PVT - Zoller Method)	
	Shear DMA (ASTM D4065)	
	Specific Heat vs. Temperature (ASTM D3417)	
	Tensile Creep (ASTM D2990)	
	Tensile Fatigue	
	Tensile Stress vs. Strain (ASTM D638)	
	Thermal Conductivity vs. Temperature (ASTM E1530)	
	Viscosity vs. Shear Rate (ASTM D3835)	

Physical	Nominal Value	Unit	Test Method
Specific Gravity			
--	1.35	g/cm ³	ASTM D792
--	1.34	g/cm ³	ISO 1183
Specific Volume	0.740	cm ³ /g	ASTM D792
Melt Mass-Flow Rate (MFR) (250°C/5.0 kg)	9.6	g/10 min	ASTM D1238
Melt Volume-Flow Rate (MVR) (250°C/5.0 kg)	8.00	cm ³ /10min	ISO 1133
Molding Shrinkage			Internal Method
Flow ¹	0.80 to 1.1	%	
Flow ²	1.0 to 1.4	%	
Flow : 3.20 mm	1.0 to 1.4	%	

Across Flow ³	0.90 to 1.3	%	
Across Flow ⁴	1.2 to 1.6	%	
Water Absorption			
24 hr	0.080	%	ASTM D570
Saturation, 23°C	0.50	%	ISO 62
Equilibrium, 23°C, 50% RH	0.15	%	ISO 62
Outdoor Suitability	f2		UL 746C
Hardness	Nominal Value	Unit	Test Method
Rockwell Hardness (R-Scale)	117		ASTM D785
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus			
-- ⁵	2020	MPa	ASTM D638
--	2200	MPa	ISO 527-2/1
Tensile Strength			
Yield ⁶	48.0	MPa	ASTM D638
Yield	50.0	MPa	ISO 527-2/50
Break ⁷	42.0	MPa	ASTM D638
Break	40.0	MPa	ISO 527-2/50
Tensile Elongation			
Yield ⁸	5.0	%	ASTM D638
Yield	5.0	%	ISO 527-2/50
Break ⁹	54	%	ASTM D638
Break	30	%	ISO 527-2/50
Flexural Modulus			
50.0 mm Span ¹⁰	2100	MPa	ASTM D790
-- ¹¹	2000	MPa	ISO 178
Flexural Stress			
--	73.0	MPa	ISO 178
Yield, 50.0 mm Span ¹²	78.0	MPa	ASTM D790
Break, 50.0 mm Span ¹³	78.0	MPa	ASTM D790
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength ¹⁴ (23°C)	45	kJ/m ²	ISO 179/1eA
Notched Izod Impact			
-30°C	150	J/m	ASTM D256
23°C	320	J/m	ASTM D256
-30°C ¹⁵	10	kJ/m ²	ISO 180/1A
23°C ¹⁶	45	kJ/m ²	ISO 180/1A
Unnotched Izod Impact (23°C)	No Break		ASTM D4812
Instrumented Dart Impact (23°C, Total Energy)	35.8	J	ASTM D3763
Gardner Impact			ASTM D3029
23°C	43.4	J	

23°C ¹⁷	43.0	J	
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load			
0.45 MPa, Unannealed, 3.20 mm	135	°C	ASTM D648
0.45 MPa, Unannealed, 6.40 mm	138	°C	ASTM D648
1.8 MPa, Unannealed, 3.20 mm	98.0	°C	ASTM D648
1.8 MPa, Unannealed, 6.40 mm	99.0	°C	ASTM D648
1.8 MPa, Unannealed, 64.0 mm Span ¹⁸	84.0	°C	ISO 75-2/Af
Vicat Softening Temperature			
--	134	°C	ASTM D1525 ¹⁹
--	145	°C	ISO 306/B50
--	150	°C	ISO 306/B120
Ball Pressure Test ²⁰ (125°C)	Pass		IEC 60695-10-2
CLTE			
Flow : -40 to 40°C	9.2E-5	cm/cm/°C	ASTM E831
Flow : 60 to 138°C	1.2E-4	cm/cm/°C	ASTM E831
Flow : -40 to 40°C	7.2E-5	cm/cm/°C	ISO 11359-2
Transverse : -40 to 40°C	8.4E-5	cm/cm/°C	ASTM E831, ISO 11359-2
RTI Elec	120	°C	UL 746
RTI Imp	120	°C	UL 746
RTI Str	140	°C	UL 746
Electrical	Nominal Value	Unit	Test Method
Volume Resistivity	> 1.2E+16	ohms · cm	ASTM D257
Dielectric Strength			ASTM D149
1.60 mm, in Oil	25	kV/mm	
3.20 mm, in Air	19	kV/mm	
3.20 mm, in Oil	19	kV/mm	
Dielectric Constant			ASTM D150
100 Hz	3.20		
1 MHz	3.20		
Dissipation Factor			ASTM D150
100 Hz	3.0E-3		
1 MHz	0.030		
Arc Resistance ²¹	PLC 6		ASTM D495
Comparative Tracking Index (CTI)	PLC 2		UL 746
High Amp Arc Ignition (HAI)	PLC 3		UL 746
High Voltage Arc Tracking Rate (HVTR)	PLC 3		UL 746
Hot-wire Ignition (HWI)	PLC 2		UL 746
Flammability	Nominal Value	Unit	Test Method
Flame Rating			UL 94
0.460 mm	HB		
0.630 mm	V-0		

3.00 mm	5VA		
Glow Wire Flammability Index (1.00 mm)	960	°C	IEC 60695-2-12
Glow Wire Ignition Temperature			IEC 60695-2-13
1.00 mm	775	°C	
2.00 mm	750	°C	
3.00 mm	725	°C	
Oxygen Index	30	%	ASTM D2863
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	238 to 254	°C	
Middle Temperature	243 to 260	°C	
Front Temperature	249 to 266	°C	
Nozzle Temperature	243 to 260	°C	
Processing (Melt) Temp	249 to 266	°C	
Mold Temperature	48.9 to 76.7	°C	
Back Pressure	0.345 to 0.689	MPa	
Screw Speed	50 to 100	rpm	
Vent Depth	0.025 to 0.038	mm	
NOTE			
1.	0.75 to 2.3 mm		
2.	2.3 to 4.6 mm		
3.	0.75 to 2.3 mm		
4.	2.3 to 4.6 mm		
5.	5.0 mm/min		
6.	Type I, 50 mm/min		
7.	Type I, 50 mm/min		
8.	Type I, 50 mm/min		
9.	Type I, 50 mm/min		
10.	1.3 mm/min		
11.	2.0 mm/min		
12.	1.3 mm/min		
13.	1.3 mm/min		
14.	80*10*4 sp=62mm		
15.	80*10*4		
16.	80*10*4		
17.	Modified		
18.	80*10*4 mm		
19.	Rate B (120°C/h), Loading 2 (50 N)		

20.	by VDE
21.	Tungsten Electrode

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