VALOX™ FR Resin 357XU - Europe

Polycarbonate + PBT

SABIC

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Technical Data

Product Description

VALOX 357XU is an unreinforced, UV stabilized, impact modified flame retardant Polybutylene Terephthalate/Polycarbonate (PBT) injection moldable grade. It has excellent chemical resistance and a UL94V0@0.75mm and 5VA@2.5mm flame rating. This is a good candidate for applications in the electrical industry including bobbins, switches, and enclosures.

General

Material Status	• Commercial: Active		
UL Yellow Card [1]	• E45329-236590 • E45329-101284012		
Search for UL Yellow Card	• SABIC		
Availability	• Europe		
Uses	• Appliances • Automotive Exterior Parts • Electrical Parts	• Electrical/Electronic Applications • Electronic Displays • Fluid Handling	• Medical/Healthcare Applications • Water Management

Physical	Nominal Value	Unit	Test Method
Density / Specific Gravity	1.34	g/cm³	ASTM D792 ISO 1183
Melt Mass-Flow Rate (MFR)			ASTM D1238
265°C/5.0 kg	18	g/10 min	
266°C/5.0 kg	18	g/10 min	
Melt Volume-Flow Rate (MVR)			ISO 1133
250°C/5.0 kg	8.0	cm³/10min	
265°C/5.0 kg	15	cm³/10min	
Molding Shrinkage [3]			Internal Method
Across Flow	0.90 to 1.8	%	
Flow	1.1 to 1.8	%	
Water Absorption			ISO 62
Saturation, 23°C	0.50	%	
Equilibrium, 23°C, 50% RH	0.15	%	
Outdoor Suitability	f1		UL 746C

Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus			
-- [4]	2100	MPa	ASTM D638
--	2100	MPa	ISO 527-1/1
Tensile Strength			
Yield [5]	50.0	MPa	ASTM D638
Yield	50.0	MPa	ISO 527-2/50
Break [5]	40.0	MPa	ASTM D638
Break	40.0	MPa	ISO 527-2/50
Tensile Elongation			
Yield [5]	4.0	%	ASTM D638
Yield	5.0	%	ISO 527-2/50
Break [5]	30	%	ASTM D638
Break	30	%	ISO 527-2/50
Flexural Modulus [6]	2100	MPa	ISO 178
Flexural Stress [6, 7]	80.0	MPa	ISO 178
Taber Abrasion Resistance			Internal Method
1000 Cycles, 1000 g, CS-17 Wheel	33.0	mg	

Form No. TDS-44742-en

Document Created: Sunday, January 15, 2023
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Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength			
-30°C [8]	20	kJ/m²	ISO 179/1eA
-30°C	10	kJ/m²	ISO 179/2C
23°C [8]	45	kJ/m²	ISO 179/1eA
23°C	15	kJ/m²	ISO 179/2C
Charpy Unnotched Impact Strength [8]			ISO 179/1eU ISO 179/2U
-30°C	No Break		
23°C	No Break		
Notched Izod Impact			
-30°C	110	J/m	ASTM D256
0°C	170	J/m	ASTM D256
23°C	350	J/m	ASTM D256
-30°C [9]	10	kJ/m²	ISO 180/1A
0°C [9]	14	kJ/m²	ISO 180/1A
23°C [9]	40	kJ/m²	ISO 180/1A
Unnotched Izod Impact			ASTM D4812 ISO 180/1U
-30°C	No Break		
23°C	No Break		

Hardness	Nominal Value	Unit	Test Method
Rockwell Hardness (R-Scale)	115		ISO 2039-2
Ball Indentation Hardness (H 358/30)	113	MPa	ISO 2039-1

Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load			
0.45 MPa, Unannealed, 3.20 mm	130	°C	ASTM D648
0.45 MPa, Unannealed, 4.00 mm, 100 mm Span [10]	135	°C	ISO 75-2/Be
0.45 MPa, Unannealed, 4.00 mm, 64.0 mm Span [9]	130	°C	ISO 75-2/Bf
1.8 MPa, Unannealed, 3.20 mm	85.0	°C	ASTM D648
1.8 MPa, Unannealed, 4.00 mm, 100 mm Span [10]	85.0	°C	ISO 75-2/Ae
1.8 MPa, Unannealed, 4.00 mm, 64.0 mm Span [9]	85.0	°C	ISO 75-2/Af
Vicat Softening Temperature			
--	180	°C	ASTM D1525 [11] ISO 306/A50 [11]
--	145	°C	ASTM D1525 [12]
Ball Pressure Test (123 to 127°C)	Pass		IEC 60695-10-2
CLTE			ISO 11359-2
Flow : 23 to 80°C	1.0E-4	cm/cm/°C	
Transverse : 23 to 80°C	1.0E-4	cm/cm/°C	
Thermal Conductivity	0.17	W/m/K	ISO 8302
RTI Elec	120	°C	UL 746B
RTI Imp	120	°C	UL 746B
RTI Str	140	°C	UL 746B

Electrical	Nominal Value	Unit	Test Method
Surface Resistivity	> 1.0E+15	ohms	IEC 60093
Volume Resistivity	> 1.0E+15	ohms·cm	IEC 60093
Electric Strength			IEC 60243-1
0.800 mm, in Oil	34	kV/mm	
1.60 mm, in Oil	26	kV/mm	
3.20 mm, in Oil	18	kV/mm	
Relative Permittivity			IEC 60250
50 Hz	3.00		
60 Hz	3.00		
1 MHz	2.90		

Form No. TDS-44742-en

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Electrical	Nominal Value	Unit	Test Method
Dissipation Factor			IEC 60250
50 Hz	2.0E-3		
60 Hz	2.0E-3		
1 MHz	7.0E-3		
Arc Resistance [13]	PLC 6		ASTM D495
Comparative Tracking Index (CTI)	PLC 3		UL 746A
Comparative Tracking Index			IEC 60112
--	200	V	
Solution B	100	V	
High Amp Arc Ignition (HAI) [14]	PLC 0		UL 746A
High Voltage Arc Resistance to Ignition (HVAR)	PLC 3		UL 746A
Hot-wire Ignition (HWI)	PLC 3		UL 746A

Flammability	Nominal Value	Unit	Test Method
Flame Rating			UL 94
0.75 mm	V-0		
2.5 mm	5VA		
Glow Wire Flammability Index (1.0 mm)	960	°C	IEC 60695-2-12
Oxygen Index	30	%	ISO 4589-2

Fill Analysis	Nominal Value	Unit	Test Method
Melt Viscosity (260°C, 1500 sec^-1)	300	Pa·s	ISO 11443

Injection	Nominal Value	Unit
Drying Temperature	110 to 120	°C
Drying Time	2.0 to 4.0	hr
Suggested Max Moisture	0.020	%
Hopper Temperature	40 to 60	°C
Rear Temperature	230 to 245	°C
Middle Temperature	240 to 255	°C
Front Temperature	245 to 265	°C
Nozzle Temperature	240 to 260	°C
Processing (Melt) Temp	250 to 270	°C
Mold Temperature	40 to 100	°C

Notes

[1] A UL Yellow Card contains UL-verified flammability and electrical characteristics. UL Prospector continually works to link Yellow Cards to individual plastic materials in Prospector, however this list may not include all of the appropriate links. It is important that you verify the association between these Yellow Cards and the plastic material found in Prospector. For a complete listing of Yellow Cards, visit the UL Yellow Card Search.

[2] Typical properties: these are not to be construed as specifications.

[3] Tensile Bar

[4] 50 mm/min

[5] Type I, 50 mm/min

[6] 2.0 mm/min

[7] at Yield

[8] 80*10*4 sp=62mm

[9] 80*10*4 mm

[10] 120*10*4 mm

[11] Rate A (50°C/h), Loading 1 (10 N)

[12] Rate A (50°C/h), Loading 2 (50 N)

[13] Tungsten Electrode

[14] Surface

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Distributor

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Web: https://www.agi.pt/en/
Availability: Portugal

GRÄSSLIN
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Web: https://www.graesslin-kunststoffe.de
Availability: Germany

Guzmán Polymers
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Availability: Italy, Spain, Turkey

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Web: https://www.lenorplastics.ch
Availability: Switzerland

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Ultrapolymers
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Web: http://www.ultrapolymers.com/
Availability: Belgium, Netherlands, South Africa

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