

SABIC Innovative Plastics Valox® 357U PBT

Category : Polymer , Thermoplastic , Polyester, TP , Polybutylene Terephthalate (PBT) , Polybutylene Terephthalate (PBT), Unreinforced, Molded

Material Notes:

Unreinforced PBTP, UL94 V-0/5VA rated. Improved UV resistant version of VALOX 357. Nonblooming flame retardant. This data was supplied by SABIC-IP for the Americas region.

Order this product through the following link:

http://www.lookpolymers.com/polymer_SABIC-Innovative-Plastics-Valox-357U-PBT.php

Physical Properties	Metric	English	Comments
Specific Gravity	1.34 g/cc	1.34 g/cc	ASTM D 792
Water Absorption	0.080 % @Time 86400 sec	0.080 % @Time 24.0 hour	ASTM D 570
Linear Mold Shrinkage, Flow	0.0080 - 0.011 cm/cm @Thickness 0.750 - 2.30 mm	0.0080 - 0.011 in/in @Thickness 0.0295 - 0.0906 in	SABIC Method
	0.010 - 0.014 cm/cm @Thickness 2.30 - 4.60 mm	0.010 - 0.014 in/in @Thickness 0.0906 - 0.181 in	SABIC Method
Linear Mold Shrinkage, Transverse	0.0090 - 0.013 cm/cm @Thickness 0.750 - 2.30 mm	0.0090 - 0.013 in/in @Thickness 0.0295 - 0.0906 in	SABIC Method
	0.012 - 0.016 cm/cm @Thickness 2.30 - 4.60 mm	0.012 - 0.016 in/in @Thickness 0.0906 - 0.181 in	SABIC Method

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell R	117	117	ASTM D 785
Tensile Strength at Break	48.0 MPa	6960 psi	Type I, 50 mm/min; ASTM D 638
Tensile Strength, Yield	48.0 MPa	6960 psi	Type I, 50 mm/min; ASTM D 638
Elongation at Break	110 %	110 %	Type I, 50 mm/min; ASTM D 638
Flexural Strength	82.0 MPa	11900 psi	1.3 mm/min, 50 mm span; ASTM D 790
Flexural Yield Strength	82.0 MPa	11900 psi	1.3 mm/min, 50 mm span; ASTM D 790
Flexural Modulus	2.06 GPa	299 ksi	1.3 mm/min, 50 mm span; ASTM D 790

Mechanical Properties	Metric	English	Comments
Izod Impact, Notched	5.34 J/cm @Temperature 23.0 Â°C	lb/in @Temperature 73.4 Â°F	ASTM D 256
Izod Impact, Unnotched	32.04 J/cm @Temperature 23.0 Â°C	60.02 ft-lb/in @Temperature 73.4 Â°F	ASTM D 4812
Gardner Impact	43.0 J @Temperature 23.0 Â°C	31.7 ft-lb @Temperature 73.4 Â°F	ASTM D 3029
	43.0 J @Temperature 23.0 Â°C	31.7 ft-lb @Temperature 73.4 Â°F	ASTM D 3029

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	91.8 Âµm/m-Â°C @Temperature -40.0 - 40.0 Â°C	51.0 Âµin/in-Â°F @Temperature -40.0 - 104 Â°F	ASTM E 831
	124 Âµm/m-Â°C @Temperature 60.0 - 138 Â°C	68.9 Âµin/in-Â°F @Temperature 140 - 280 Â°F	ASTM E 831
Deflection Temperature at 0.46 MPa (66 psi)	137 Â°C @Thickness 6.40 mm	279 Â°F @Thickness 0.252 in	unannealed; ASTM D 648
Deflection Temperature at 1.8 MPa (264 psi)	98.0 Â°C @Thickness 6.40 mm	208 Â°F @Thickness 0.252 in	unannealed; ASTM D 648
UL RTI, Electrical	120 Â°C	248 Â°F	UL 746B
UL RTI, Mechanical with Impact	120 Â°C	248 Â°F	UL 746B
UL RTI, Mechanical without Impact	140 Â°C	284 Â°F	UL 746B
Flammability, UL94	HB @Thickness 0.450 mm	HB @Thickness 0.0177 in	UL 94
	V-0 @Thickness 0.630 mm	V-0 @Thickness 0.0248 in	UL 94
	5VA @Thickness 2.99 mm	5VA @Thickness 0.118 in	UL 94
Oxygen Index	30 %	30 %	LOI; ASTM D 2863

Electrical Properties	Metric	English	Comments
Volume Resistivity	$\geq 1.20 \times 10^{16}$ ohm-cm	$\geq 1.20 \times 10^{16}$ ohm-cm	ASTM D 257
Dielectric Constant	3.2	3.2	ASTM D 150
	@Frequency 100 Hz	@Frequency 100 Hz	
	3.2	3.2	ASTM D 150
	@Frequency 1.00×10^6 Hz	@Frequency 1.00×10^6 Hz	
Dielectric Strength	18.5 kV/mm	470 kV/in	in air; ASTM D 149
	@Thickness 3.20 mm	@Thickness 0.126 in	
	18.5 kV/mm	470 kV/in	in oil; ASTM D 149
	@Thickness 3.20 mm	@Thickness 0.126 in	
	25.1 kV/mm	638 kV/in	in oil; ASTM D 149
	@Thickness 1.60 mm	@Thickness 0.0630 in	
Dissipation Factor	0.0030	0.0030	ASTM D 150
	@Frequency 100 Hz	@Frequency 100 Hz	
	0.030	0.030	ASTM D 150
	@Frequency 1.00×10^6 Hz	@Frequency 1.00×10^6 Hz	
Arc Resistance	60 - 120 sec	60 - 120 sec	Tungsten, PLC code 6; ASTM D 495
Comparative Tracking Index	250 - 400 V	250 - 400 V	PLC code 2; UL 746A
Hot Wire Ignition, HWI	30 - 60 sec	30 - 60 sec	PLC code 2; UL 746A
High Amp Arc Ignition, HAI	15 - 30 arcs	15 - 30 arcs	surface, PLC code 3; UL 746A
High Voltage Arc-Tracking Rate, HVTR	80.0 - 150 mm/min	3.15 - 5.91 in/min	PLC code 3; UL 746A

Descriptive Properties	Value	Comments
UV-light, water exposure/immersion	F1	UL 746C

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