

SABIC Innovative Plastics Valox® 357U PBT (Asia Pacific)

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

Material Notes:

Unreinforced PBTP, UL94 V-0/5VA rated. Improved UV resistant version of VALOX 357. Nonblooming flame retardant.

Order this product through the following link:

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

Physical Properties	Metric	English	Comments
Specific Gravity	1.34 g/cc	1.34 g/cc	ASTM D792
Water Absorption	0.080 %	0.080 %	ASTM D570
	@Time 86400 sec	@Time 24.0 hour	
Linear Mold Shrinkage, Flow	0.0080 - 0.011 cm/cm	0.0080 - 0.011 in/in	SABIC Method
	@Thickness 0.750 - 2.30 mm	@Thickness 0.0295 - 0.0906 in	
	0.010 - 0.014 cm/cm	0.010 - 0.014 in/in	SABIC Method
	@Thickness 2.30 - 4.60 mm	@Thickness 0.0906 - 0.181 in	
Linear Mold Shrinkage, Transverse	0.0090 - 0.013 cm/cm	0.0090 - 0.013 in/in	SABIC Method
	@Thickness 0.750 - 2.30 mm	@Thickness 0.0295 - 0.0906 in	
	0.012 - 0.016 cm/cm	0.012 - 0.016 in/in	SABIC Method
	@Thickness 2.30 - 4.60 mm	@Thickness 0.0906 - 0.181 in	

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell R	117	117	ASTM D785
Tensile Strength at Break	48.0 MPa	6960 psi	Type I, 50 mm/min; ASTM D638
Tensile Strength, Yield	48.0 MPa	6960 psi	Type I, 50 mm/min; ASTM D638
Elongation at Break	110 %	110 %	Type I, 50 mm/min; ASTM D638
Flexural Strength	82.0 MPa	11900 psi	1.3 mm/min, 50 mm span; ASTM D790
Flexural Yield Strength	82.0 MPa	11900 psi	1.3 mm/min, 50 mm span; ASTM D790
Flexural Modulus	2.06 GPa	299 ksi	1.3 mm/min, 50 mm span; ASTM D790
Izod Impact, Notched	5.34 J/cm	10.0 ft-lb/in	ASTM D256

Mechanical Properties	Metric /cm	English /lb/in	Comments
Gardner Impact	43.0 J	31.7 ft-lb	ASTM D3029
	43.0 J	31.7 ft-lb	ASTM D3029

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	91.8 $\mu\text{m}/\text{m}\cdot\text{Å}^\circ\text{C}$	51.0 $\mu\text{in}/\text{in}\cdot\text{Å}^\circ\text{F}$	ASTM E 831
	@Temperature -40.0 - 40.0 $\text{Å}^\circ\text{C}$	@Temperature -40.0 - 104 $\text{Å}^\circ\text{F}$	
	124 $\mu\text{m}/\text{m}\cdot\text{Å}^\circ\text{C}$	68.9 $\mu\text{in}/\text{in}\cdot\text{Å}^\circ\text{F}$	ASTM E 831
	@Temperature 60.0 - 138 $\text{Å}^\circ\text{C}$	@Temperature 140 - 280 $\text{Å}^\circ\text{F}$	
Deflection Temperature at 0.46 MPa (66 psi)	137 $\text{Å}^\circ\text{C}$	279 $\text{Å}^\circ\text{F}$	unannealed; ASTM D648
	@Thickness 6.40 mm	@Thickness 0.252 in	
Deflection Temperature at 1.8 MPa (264 psi)	98.0 $\text{Å}^\circ\text{C}$	208 $\text{Å}^\circ\text{F}$	unannealed; ASTM D648
	@Thickness 6.40 mm	@Thickness 0.252 in	
UL RTI, Electrical	120 $\text{Å}^\circ\text{C}$	248 $\text{Å}^\circ\text{F}$	UL 746B
UL RTI, Mechanical with Impact	120 $\text{Å}^\circ\text{C}$	248 $\text{Å}^\circ\text{F}$	UL 746B
UL RTI, Mechanical without Impact	140 $\text{Å}^\circ\text{C}$	284 $\text{Å}^\circ\text{F}$	UL 746B
Flammability, UL94	HB	HB	UL 94
	@Thickness 0.450 mm	@Thickness 0.0177 in	
	V-0	V-0	UL 94
	@Thickness 0.630 mm	@Thickness 0.0248 in	
	5VA	5VA	UL 94
	@Thickness 2.99 mm	@Thickness 0.118 in	
Oxygen Index	30 %	30 %	ASTM D2863

Electrical Properties	Metric	English	Comments
Volume Resistivity	$\geq 1.20\text{e}+16$ ohm-cm	$\geq 1.20\text{e}+16$ ohm-cm	ASTM D257
Dielectric Constant	3.2	3.2	ASTM D150
	@Frequency 100 Hz	@Frequency 100 Hz	
	3.2	3.2	ASTM D150
	@Frequency 1.00e+6	@Frequency 1.00e+6	

Electrical Properties	Hz Metric	Hz English	Comments
Dielectric Strength	18.5 kV/mm	470 kV/in	in air; ASTM D149
	@Thickness 3.20 mm	@Thickness 0.126 in	
	18.5 kV/mm	470 kV/in	
Dielectric Strength	@Thickness 3.20 mm	@Thickness 0.126 in	in oil; ASTM D149
	25.1 kV/mm	638 kV/in	
	@Thickness 1.60 mm	@Thickness 0.0630 in	
Dissipation Factor	0.0030	0.0030	ASTM D150
	@Frequency 100 Hz	@Frequency 100 Hz	
Dissipation Factor	0.030	0.030	ASTM D150
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	
Arc Resistance	60 - 120 sec	60 - 120 sec	Tungsten; ASTM D495
Comparative Tracking Index	250 - 400 V	250 - 400 V	UL 746A
Hot Wire Ignition, HWI	30 - 60 sec	30 - 60 sec	UL 746A
High Amp Arc Ignition, HAI	15 - 30 arcs	15 - 30 arcs	UL 746A
High Voltage Arc-Tracking Rate, HVTR	80.0 - 150 mm/min	3.15 - 5.91 in/min	UL 746A

Descriptive Properties	Value	Comments
Specific Volume	0.75cm ³ /g	ASTM D792
UV-light, water exposure/immersion	F1	UL 746C

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