

SABIC Innovative Plastics Valox[®] 357 PBT

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

Material Notes:

PC/PBT, Unreinforced, impact modified, UL94V-0 rated. Applications like bobbins, switches and enclosures. 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-357-PBT.php

Physical Properties	Metric	English	Comments
Specific Gravity	1.35 g/cc	1.35 g/cc	ASTM D 792
Density	1.34 g/cc	0.0484 lb/in ³	ISO 1183
Water Absorption	0.080 % @Time 86400 sec	0.080 % @Time 24.0 hour	ASTM D 570
Moisture Absorption at Equilibrium	0.15 %	0.15 %	23 [°] C / 50% RH; ISO 62
Water Absorption at Saturation	0.50 % @Temperature 23.0 [°] C	0.50 % @Temperature 73.4 [°] F	ISO 62
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
	0.010 - 0.014 cm/cm @Thickness 3.20 mm	0.010 - 0.014 in/in @Thickness 0.126 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
Melt Flow	8.0 g/10 min @Load 5.00 kg, Temperature 250 [°] C	8.0 g/10 min @Load 11.0 lb, Temperature 482 [°] F	[cm ³ /10 min] Melt Volume Rate; ISO 1133
	9.6 g/10 min	9.6 g/10 min	

Physical Properties	@Load 5.00 kg, Metric Temperature 250 Å°C	@Load 11.0 lb, English Temperature 482 Å°F	ASTM D 1238 Comments
Mechanical Properties	Metric	English	Comments
Hardness, Rockwell R	117	117	ASTM D 785
Tensile Strength at Break	40.0 MPa	5800 psi	50 mm/min; ISO 527
	42.0 MPa	6090 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
	50.0 MPa	7250 psi	50 mm/min; ISO 527
Elongation at Break	30 %	30 %	50 mm/min; ISO 527
	54 %	54 %	Type I, 50 mm/min; ASTM D 638
Elongation at Yield	5.0 %	5.0 %	Type I, 50 mm/min; ASTM D 638
	5.0 %	5.0 %	50 mm/min; ISO 527
Tensile Modulus	2.02 GPa	293 ksi	5 mm/min; ASTM D 638
	2.20 GPa	319 ksi	1 mm/min; ISO 527
Flexural Strength	78.0 MPa	11300 psi	1.3 mm/min, 50 mm span; ASTM D 790
Flexural Yield Strength	73.0 MPa	10600 psi	2 mm/min; ISO 178
	78.0 MPa	11300 psi	1.3 mm/min, 50 mm span; ASTM D 790
Flexural Modulus	2.00 GPa	290 ksi	2 mm/min; ISO 178
	2.10 GPa	305 ksi	1.3 mm/min, 50 mm span; ASTM D 790
Izod Impact, Notched	1.53 J/cm	2.87 ft-lb/in	ASTM D 256
	@Temperature -30.0 Å°C	@Temperature -22.0 Å°F	
	3.19 J/cm	5.98 ft-lb/in	ASTM D 256
	@Temperature 23.0 Å°C	@Temperature 73.4 Å°F	
Izod Impact, Unnotched	NB	NB	ASTM D 4812
	@Temperature 23.0 Å°C	@Temperature 73.4 Å°F	
Izod Impact, Notched (ISO)	10.0 kJ/mÅ²	4.76 ft-lb/inÅ²	80*10*4; ISO 180/1A
	@Temperature -30.0	@Temperature -22.0	

Mechanical Properties	°C Metric	°F English	Comments
	45.0 kJ/m ² @Temperature 23.0 °C	21.4 ft-lb/in ² @Temperature 73.4 °F	80*10*4; ISO 180/1A
Charpy Impact, Notched	4.50 J/cm ² @Temperature 23.0 °C	21.4 ft-lb/in ² @Temperature 73.4 °F	V-notch Edgew 80*10*4 sp=62mm; ISO 179/1eA
Gardner Impact	43.0 J @Temperature 23.0 °C	31.7 ft-lb @Temperature 73.4 °F	ASTM D 3029
	43.0 J @Temperature 23.0 °C	31.7 ft-lb @Temperature 73.4 °F	ASTM D 3029
Impact Test	35.0 J @Temperature 23.0 °C	25.8 ft-lb @Temperature 73.4 °F	Instrumented Impact Total Energy; ASTM D 3763

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	72.0 µm/m-°C @Temperature -40.0 - 40.0 °C	40.0 µin/in-°F @Temperature -40.0 - 104 °F	ISO 11359-2
	91.8 µm/m-°C @Temperature -40.0 - 40.0 °C	51.0 µin/in-°F @Temperature -40.0 - 104 °F	ASTM E 831
	124 µm/m-°C @Temperature 60.0 - 138 °C	68.9 µin/in-°F @Temperature 140 - 280 °F	ASTM E 831
CTE, linear, Transverse to Flow	84.0 µm/m-°C @Temperature -40.0 - 40.0 °C	46.7 µin/in-°F @Temperature -40.0 - 104 °F	ASTM E 831
	84.0 µm/m-°C @Temperature -40.0 - 40.0 °C	46.7 µin/in-°F @Temperature -40.0 - 104 °F	ISO 11359-2
Deflection Temperature at 0.46 MPa (66 psi)	135 °C @Thickness 3.20 mm	275 °F @Thickness 0.126 in	unannealed; ASTM D 648
	138 °C @Thickness 6.40 mm	280 °F @Thickness 0.252 in	unannealed; ASTM D 648

Thermal Properties	Metric	English	Comments
Deflection Temperature at 1.8 MPa (0.14 in/in)	98.0 Â°C	208 Â°F	unannealed; ASTM D 648
	@Thickness 3.20 mm	@Thickness 0.126 in	
	99.0 Â°C	210 Â°F	unannealed; ASTM D 648
	@Thickness 6.40 mm	@Thickness 0.252 in	
Vicat Softening Point	134 Â°C	273 Â°F	Rate B/50; ASTM D 1525
	145 Â°C	293 Â°F	Rate B/50; ISO 306
	150 Â°C	302 Â°F	Rate B/120; ISO 306
UL RTI, Electrical	120 Â°C	248 Â°F	UL 746B
UL RTI, Mechanical with Impact	120 Â°C	248 Â°F	UL 746B

Electrical Properties	Metric	English	Comments
Volume Resistivity	>= 1.20e+16 ohm-cm	>= 1.20e+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 1.00e+6 Hz	@Frequency 1.00e+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	
	25.2 kV/mm	640 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 1.00e+6 Hz	@Frequency 1.00e+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 Electrical Properties	30 - 60 sec Metric	30 - 60 sec English	PLC code 2: UL 746A Comments
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

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