

SABIC Innovative Plastics Valox® 420SE0U PBT

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

Material Notes:

PBT, 30% Glass Reinforced, Flame Retardant UL94 V-0/5VA rated, UV-Stabilized

Order this product through the following link:

http://www.lookpolymers.com/polymer_SABIC-Innovative-Plastics-Valox-420SE0U-PBT.php

Physical Properties	Metric	English	Comments
Specific Gravity	1.63 g/cc	1.63 g/cc	ASTM D792
Density	1.63 g/cc	0.0589 lb/in ³	ISO 1183
Water Absorption	0.060 %	0.060 %	ASTM D570
	@Time 86400 sec	@Time 24.0 hour	
Moisture Absorption	0.0700 %	0.0700 %	23°C / 50% RH; ISO 62
Water Absorption at Saturation	0.090 %	0.090 %	ISO 62
Linear Mold Shrinkage, Flow	0.0010 - 0.0050 cm/cm	0.0010 - 0.0050 in/in	on Tensile Bar; SABIC Method
	0.0030 - 0.0050 cm/cm	0.0030 - 0.0050 in/in	SABIC Method
	@Thickness 1.50 - 3.20 mm	@Thickness 0.0591 - 0.126 in	
	0.0050 - 0.0070 cm/cm	0.0050 - 0.0070 in/in	SABIC Method
Linear Mold Shrinkage, Transverse	0.0050 - 0.0070 cm/cm	0.0050 - 0.0070 in/in	SABIC Method
	@Thickness 3.20 mm	@Thickness 0.126 in	
	0.0050 - 0.0080 cm/cm	0.0050 - 0.0080 in/in	SABIC Method
	@Thickness 3.20 - 4.60 mm	@Thickness 0.126 - 0.181 in	
Linear Mold Shrinkage, Transverse	0.0040 - 0.0080 cm/cm	0.0040 - 0.0080 in/in	on Tensile Bar; SABIC Method
	0.0040 - 0.0060 cm/cm	0.0040 - 0.0060 in/in	SABIC Method
	@Thickness 1.50 - 3.20 mm	@Thickness 0.0591 - 0.126 in	
	0.0060 - 0.0090 cm/cm	0.0060 - 0.0090 in/in	SABIC Method
Melt Flow	0.0060 - 0.0090 cm/cm	0.0060 - 0.0090 in/in	SABIC Method
	@Thickness 3.20 - 4.60 mm	@Thickness 0.126 - 0.181 in	
	0.0050 - 0.010 cm/cm	0.0050 - 0.010 in/in	SABIC Method
	@Thickness 3.20 mm	@Thickness 0.126 in	
Melt Flow	42 g/10 min	42 g/10 min	ASTM D1238
	@Load 5.00 kg,	@Load 11.0 lb,	

Physical Properties	Temperature 250 Â°C Metric	Temperature 482 Â°F English	Comments
Melt Index of Compound	29 g/10 min @Load 5.00 kg, Temperature 250 Â°C	29 g/10 min @Load 11.0 lb, Temperature 482 Â°F	MVR [cm^3/10 min]; ISO 1133

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell R	119	119	ASTM D785
	119	119	ISO 2039-2
Hardness, H358/30	118 MPa	17100 psi	ISO 2039-1
Tensile Strength at Break	120 MPa	17400 psi	Type I, 5 mm/min; ASTM D638
	120 MPa	17400 psi	5 mm/min; ISO 527
Tensile Strength, Yield	120 MPa	17400 psi	Type I, 5 mm/min; ASTM D638
	120 MPa	17400 psi	5 mm/min; ISO 527
Elongation at Break	1.9 %	1.9 %	5 mm/min; ISO 527
	2.0 %	2.0 %	Type I, 5 mm/min; ASTM D638
Elongation at Yield	1.9 %	1.9 %	5 mm/min; ISO 527
	2.0 %	2.0 %	Type I, 5 mm/min; ASTM D638
Tensile Modulus	10.0 GPa	1450 ksi	1 mm/min; ISO 527
	12.0 GPa	1740 ksi	5 mm/min; ASTM D638
Flexural Strength	180 MPa	26100 psi	ISO 178
	186 MPa	27000 psi	1.3 mm/min, 50 mm span; ASTM D790
Flexural Modulus	9.50 GPa	1380 ksi	2 mm/min; ISO 178
	9.80 GPa	1420 ksi	1.3 mm/min, 50 mm span; ASTM D790
Izod Impact, Notched	0.600 J/cm	1.12 ft-lb/in	ASTM D256
	0.570 J/cm @Temperature -30.0 Â°C	1.07 ft-lb/in @Temperature -22.0 Â°F	ASTM D256
Izod Impact, Unnotched	6.20 J/cm	11.6 ft-lb/in	ASTM D4812
Izod Impact, Notched (ISO)	7.00 kJ/mÂ²	3.33 ft-lb/inÂ²	80*10*4; ISO 180/1A
	6.00 kJ/mÂ²	2.86 ft-lb/inÂ²	

Mechanical Properties	Metric @Temperature -30.0 Â°C	English @Temperature -22.0 Â°F	Comments 80*10*4; ISO 180/1A
Izod Impact, Unnotched (ISO)	45.0 kJ/mÂ²	21.4 ft-lb/inÂ²	80*10*4; ISO 180/1U
	45.0 kJ/mÂ² @Temperature -30.0 Â°C	21.4 ft-lb/inÂ² @Temperature -22.0 Â°F	80*10*4; ISO 180/1U
Charpy Impact Unnotched	5.00 J/cmÂ²	23.8 ft-lb/inÂ²	Edgew 80*10*4 sp=62mm; ISO 179/1eU
	5.00 J/cmÂ² @Temperature -30.0 Â°C	23.8 ft-lb/inÂ² @Temperature -22.0 Â°F	Edgew 80*10*4 sp=62mm; ISO 179/1eU
Charpy Impact, Notched	0.700 J/cmÂ²	3.33 ft-lb/inÂ²	Edgew 80*10*4 sp=62mm; ISO 179/1eA
	0.600 J/cmÂ² @Temperature -30.0 Â°C	2.86 ft-lb/inÂ² @Temperature -22.0 Â°F	Edgew 80*10*4 sp=62mm; ISO 179/1eA
Dart Drop, Total Energy	5.00 J @Temperature 23.0 Â°C	3.69 ft-lb @Temperature 73.4 Â°F	ASTM D3763

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	25.0 Âµm/m-Â°C @Temperature -40.0 - 40.0 Â°C	13.9 Âµin/in-Â°F @Temperature -40.0 - 104 Â°F	ISO 11359-2
	25.0 Âµm/m-Â°C @Temperature -40.0 - 40.0 Â°C	13.9 Âµin/in-Â°F @Temperature -40.0 - 104 Â°F	ASTM E 831
	25.2 Âµm/m-Â°C @Temperature 60.0 - 138 Â°C	14.0 Âµin/in-Â°F @Temperature 140 - 280 Â°F	ASTM E 831
CTE, linear, Transverse to Flow	89.0 Âµm/m-Â°C @Temperature -40.0 - 40.0 Â°C	49.4 Âµin/in-Â°F @Temperature -40.0 - 104 Â°F	ASTM E 831
	89.0 Âµm/m-Â°C @Temperature -40.0 - 40.0 Â°C	49.4 Âµin/in-Â°F @Temperature -40.0 - 104 Â°F	ISO 11359-2
Thermal Conductivity	0.250 W/m-K	1.74 BTU-in/hr-ftÂ²- Â°F	ISO 8302

Thermal Properties	Metric	English	Comments
Deflection Temperature at 0.46 MPa (0.07 psi)	212 Â°C	414 Â°F	unannealed; ASTM D648
	@Thickness 3.20 mm	@Thickness 0.126 in	
	215 Â°C	419 Â°F	unannealed; ASTM D648
	@Thickness 6.40 mm	@Thickness 0.252 in	

Electrical Properties	Metric	English	Comments
Volume Resistivity	>= 1.00e+15 ohm-cm	>= 1.00e+15 ohm-cm	ASTM D257
Dielectric Constant	3.7	3.7	ASTM D150
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	
	3.8	3.8	ASTM D150
	@Frequency 100 Hz	@Frequency 100 Hz	
Dielectric Strength	19.0 kV/mm	483 kV/in	in air; ASTM D149
	@Thickness 3.20 mm	@Thickness 0.126 in	
	24.0 kV/mm	610 kV/in	in oil; ASTM D149
	@Thickness 1.60 mm	@Thickness 0.0630 in	
Dissipation Factor	0.0020	0.0020	ASTM D150
	@Frequency 100 Hz	@Frequency 100 Hz	
	0.020	0.020	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	175 - 250 V	175 - 250 V	UL 746A
Hot Wire Ignition, HWI	30 - 60 sec	30 - 60 sec	UL 746A
High Amp Arc Ignition, HAI	>= 120 arcs	>= 120 arcs	UL 746A
High Voltage Arc-Tracking Rate, HVTR	>= 150 mm/min	>= 5.91 in/min	UL 746A

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