

SABIC Innovative Plastics Valox® 420HP PBT

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

Material Notes:

30% Glass filled PBT resin, FDA Food Contact compliant in limited colors. Effective March 2008 this grade will no longer be supported with biocompatibility information. Alternative grade Valox HX420HP.

Order this product through the following link:

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

Physical Properties	Metric	English	Comments
Specific Gravity	1.53 g/cc	1.53 g/cc	ASTM D792
Density	1.53 g/cc	0.0553 lb/in ³	ISO 1183
Filler Content	30 %	30 %	ASTM D229
Water Absorption	0.060 % @Time 86400 sec	0.060 % @Time 24.0 hour	ASTM D570
Moisture Absorption	0.0800 %	0.0800 %	23°C / 50% RH; ISO 62
Water Absorption at Saturation	0.26 %	0.26 %	ISO 62
Linear Mold Shrinkage, Flow	0.0030 - 0.0070 cm/cm	0.0030 - 0.0070 in/in	on Tensile Bar; SABIC Method
	0.0030 - 0.0050 cm/cm @Thickness 1.50 - 3.20 mm	0.0030 - 0.0050 in/in @Thickness 0.0591 - 0.126 in	SABIC Method
	0.0030 - 0.0080 cm/cm @Thickness 3.20 mm	0.0030 - 0.0080 in/in @Thickness 0.126 in	SABIC Method
	0.0050 - 0.0080 cm/cm @Thickness 3.20 - 4.60 mm	0.0050 - 0.0080 in/in @Thickness 0.126 - 0.181 in	SABIC Method
Linear Mold Shrinkage, Transverse	0.0050 - 0.010 cm/cm	0.0050 - 0.010 in/in	on Tensile Bar; SABIC Method
	0.0040 - 0.0060 cm/cm @Thickness 1.50 - 3.20 mm	0.0040 - 0.0060 in/in @Thickness 0.0591 - 0.126 in	SABIC Method
	0.0060 - 0.0090 cm/cm @Thickness 3.20 - 4.60 mm	0.0060 - 0.0090 in/in @Thickness 0.126 - 0.181 in	SABIC Method
	0.0050 - 0.010 cm/cm @Thickness 3.20 mm	0.0050 - 0.010 in/in @Thickness 0.126 in	SABIC Method

Physical Properties	Metric	English	Comments
Melt Flow	@Load 2.16 kg, Temperature 250 Å°C	@Load 4.76 lb, Temperature 482 Å°F	ASTM D1238
Melt Index of Compound	13 g/10 min @Load 2.16 kg, Temperature 250 Å°C	13 g/10 min @Load 4.76 lb, Temperature 482 Å°F	MVR [cm ³ /10 min]; ISO 1133

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell R	118	118	ASTM D785
Tensile Strength at Break	120 MPa	17400 psi	Type I, 5 mm/min; ASTM D638
	125 MPa	18100 psi	5 mm/min; ISO 527
Tensile Strength, Yield	120 MPa	17400 psi	Type I, 5 mm/min; ASTM D638
	125 MPa	18100 psi	5 mm/min; ISO 527
Elongation at Break	2.0 %	2.0 %	5 mm/min; ISO 527
	3.0 %	3.0 %	Type I, 5 mm/min; ASTM D638
Elongation at Yield	2.0 %	2.0 %	5 mm/min; ISO 527
	3.0 %	3.0 %	Type I, 5 mm/min; ASTM D638
Tensile Modulus	9.30 GPa	1350 ksi	5 mm/min; ASTM D638
	9.30 GPa	1350 ksi	1 mm/min; ISO 527
Flexural Strength	189 MPa	27400 psi	1.3 mm/min, 50 mm span; ASTM D790
Flexural Yield Strength	195 MPa	28300 psi	2 mm/min; ISO 178
Flexural Modulus	7.58 GPa	1100 ksi	1.3 mm/min, 50 mm span; ASTM D790
	8.50 GPa	1230 ksi	2 mm/min; ISO 178
Izod Impact, Notched	0.850 J/cm	1.59 ft-lb/in	ASTM D256
	0.800 J/cm	1.50 ft-lb/in	ASTM D256
	@Temperature -30.0 Å°C	@Temperature -22.0 Å°F	
Izod Impact, Unnotched	8.01 J/cm	15.0 ft-lb/in	ASTM D4812
Izod Impact, Notched (ISO)	8.00 kJ/m ²	3.81 ft-lb/in ²	80*10*4; ISO 180/1A
	7.00 kJ/m ²	3.33 ft-lb/in ²	

Mechanical Properties	Metric @Temperature -30.0 Â°C	English @Temperature -22.0 Â°F	80*10*4; ISO 180/1A Comments
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	4.50 J/cmÂ²	21.4 ft-lb/inÂ²	Edgew 80*10*4 sp=62mm; ISO 179/1eU
	4.50 J/cmÂ² @Temperature -30.0 Â°C	21.4 ft-lb/inÂ² @Temperature -22.0 Â°F	Edgew 80*10*4 sp=62mm; ISO 179/1eU
Charpy Impact, Notched	0.500 J/cmÂ²	2.38 ft-lb/inÂ²	Edgew 80*10*4 sp=62mm; ISO 179/1eA
	0.500 J/cmÂ² @Temperature -30.0 Â°C	2.38 ft-lb/inÂ² @Temperature -22.0 Â°F	Edgew 80*10*4 sp=62mm; ISO 179/1eA
Dart Drop, Total Energy	8.00 J @Temperature 23.0 Â°C	5.90 ft-lb @Temperature 73.4 Â°F	ASTM D3763

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	25.2 Âµm/m-Â°C @Temperature -40.0 - 40.0 Â°C	14.0 Âµin/in-Â°F @Temperature -40.0 - 104 Â°F	ASTM E 831
	25.2 Âµm/m-Â°C @Temperature -40.0 - 40.0 Â°C	14.0 Âµin/in-Â°F @Temperature -40.0 - 104 Â°F	ISO 11359-2
CTE, linear, Transverse to Flow	120 Âµm/m-Â°C @Temperature -40.0 - 40.0 Â°C	66.7 Âµin/in-Â°F @Temperature -40.0 - 104 Â°F	ASTM E 831
	120 Âµm/m-Â°C @Temperature -40.0 - 40.0 Â°C	66.7 Âµin/in-Â°F @Temperature -40.0 - 104 Â°F	ISO 11359-2
Deflection Temperature at 0.46 MPa (66 psi)	217 Â°C	423 Â°F	Flatw 80*10*4 sp=64mm; ISO 75/Bf
	215 Â°C @Thickness 6.40 mm	419 Â°F @Thickness 0.252 in	unannealed; ASTM D648
	220 Â°C	428 Â°F	

Thermal Properties	Metric @ Thickness 3.20 mm	English @ Thickness 0.126 in	unannealed; ASTM D648 Comments
Deflection Temperature at 1.8 MPa (264 psi)	204 Â°C	399 Â°F	Flatw 80*10*4 sp=64mm; ISO 75/Af
	203 Â°C @Thickness 3.20 mm	397 Â°F @Thickness 0.126 in	unannealed; ASTM D648
Vicat Softening Point	215 Â°C	419 Â°F	Rate B/50; ASTM D1525
	215 Â°C	419 Â°F	Rate B/50; ISO 306
	215 Â°C	419 Â°F	Rate B/120; ISO 306
	223 Â°C	433 Â°F	Rate A/50; ISO 306

Electrical Properties	Metric	English	Comments
Volume Resistivity	>= 3.20e+16 ohm-cm	>= 3.20e+16 ohm-cm	ASTM D257
Dielectric Constant	3.7	3.7	ASTM D150
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	
Dielectric Strength	3.8	3.8	ASTM D150
	@Frequency 100 Hz	@Frequency 100 Hz	
Dielectric Strength	18.7 kV/mm	475 kV/in	in air; ASTM D149
	@Thickness 3.20 mm	@Thickness 0.126 in	
Dissipation Factor	24.8 kV/mm	630 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	
Dissipation Factor	0.020	0.020	ASTM D150
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	

Descriptive Properties	Value	Comments
Specific Volume	0.65cm ³ /g	ASTM D792

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