

SABIC Innovative Plastics EXTEM VH1003P PEI Copolymer

Category : Polymer , Thermoplastic , Polyetherimide (PEI)

Material Notes:

Transparent, Thermoplastic Polyimide (TPI) resin with a glass transition temperature (Tg) of 247C. Powder version of VH1003. This resin is a Dual-use item and is subject to export control restrictions under both U.S. 15 CFR 774 and Annex I of Reg. (EC) 428/2009 as ECCN 1C008. Diversion contrary to law is prohibited.

Order this product through the following link:

http://www.lookpolymers.com/polymer_SABIC-Innovative-Plastics-EXTEM-VH1003P-PEI-Copolymer.php

Physical Properties	Metric	English	Comments
Specific Gravity	1.30 g/cc	1.30 g/cc	ASTM D792
Density	1.30 g/cc	0.0470 lb/in ³	ISO 1183
Moisture Absorption	0.600 %	0.600 %	23°C / 50% RH; ISO 62
Water Absorption at Saturation	1.75 %	1.75 %	ISO 62
Linear Mold Shrinkage, Flow	0.0050 - 0.0070 cm/cm	0.0050 - 0.0070 in/in	on Tensile Bar; SABIC Method
	0.0050 - 0.0070 cm/cm @Thickness 3.20 mm	0.0050 - 0.0070 in/in @Thickness 0.126 in	SABIC Method
Linear Mold Shrinkage, Transverse	0.0050 - 0.0070 cm/cm @Thickness 3.20 mm	0.0050 - 0.0070 in/in @Thickness 0.126 in	SABIC Method
Melt Flow	15.5 g/10 min @Load 6.60 kg, Temperature 367 °C	15.5 g/10 min @Load 14.6 lb, Temperature 693 °F	ASTM D1238
Melt Index of Compound	8.0 g/10 min @Load 5.00 kg, Temperature 360 °C	8.0 g/10 min @Load 11.0 lb, Temperature 680 °F	MVR [cm ³ /10 min]; ISO 1133

Mechanical Properties	Metric	English	Comments
Hardness, H358/30	140 MPa	20300 psi	ISO 2039-1
Tensile Strength at Break	78.0 MPa	11300 psi	5 mm/min; ISO 527
	96.0 MPa	13900 psi	Type I, 5 mm/min; ASTM D638
Tensile Strength, Yield	95.0 MPa	13800 psi	5 mm/min; ISO 527
	96.0 MPa	13900 psi	Type I, 5 mm/min; ASTM D638
Elongation at Break	50 %	50 %	Type I, 5 mm/min; ASTM D638

Mechanical Properties	Metric	English	Comments ISO 527
Elongation at Yield	6.0 %	6.0 %	Type I, 5 mm/min; ASTM D638
	8.5 %	8.5 %	5 mm/min; ISO 527
Tensile Modulus	3.11 GPa	451 ksi	1 mm/min; ISO 527
	3.51 GPa	509 ksi	5 mm/min; ASTM D638
Flexural Strength	159 MPa	23100 psi	1.3 mm/min, 50 mm span; ASTM D790
Flexural Yield Strength	123 MPa	17800 psi	2 mm/min; ISO 178
	155 MPa	22500 psi	2.6 mm/min, 100 mm span; ASTM D790
Flexural Modulus	3.08 GPa	447 ksi	2 mm/min; ISO 178
	3.17 GPa	460 ksi	1.3 mm/min, 50 mm span; ASTM D790
Izod Impact, Notched	0.690 J/cm	1.29 ft-lb/in	ASTM D256
	0.740 J/cm @Temperature -30.0 °C	1.39 ft-lb/in @Temperature -22.0 °F	ASTM D256
Izod Impact, Unnotched	NB	NB	ASTM D4812
Izod Impact, Notched (ISO)	4.00 kJ/m ²	1.90 ft-lb/in ²	80*10*4; ISO 180/1A
	5.00 kJ/m ² @Temperature -30.0 °C	2.38 ft-lb/in ² @Temperature -22.0 °F	80*10*4; ISO 180/1A
Izod Impact, Unnotched (ISO)	NB	NB	80*10*4; ISO 180/1U
	NB @Temperature -30.0 °C	NB @Temperature -22.0 °F	80*10*4; ISO 180/1U
Charpy Impact Unnotched	NB	NB	Edgew 80*10*4 sp=62mm; ISO 179/1eU
	NB @Temperature -30.0 °C	NB @Temperature -22.0 °F	Edgew 80*10*4 sp=62mm; ISO 179/1eU
Dart Drop, Total Energy	33.0 J	24.3 ft-lb	ASTM D3763
	@Temperature 23.0 °C	@Temperature 73.4 °F	

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	50.0 µm/m-°C	27.8 µin/in-°F	ASTM E 831

Thermal Properties	Metric @Temperature -40.0 - 150 °C	English @Temperature -40.0 - 302 °F	Comments
	50.0 µm/m-°C	27.8 µin/in-°F	ISO 11359-2
	@Temperature 23.0 - 150 °C	@Temperature 73.4 - 302 °F	
CTE, linear, Transverse to Flow	50.0 µm/m-°C	27.8 µin/in-°F	ASTM E 831
	@Temperature -40.0 - 150 °C	@Temperature -40.0 - 302 °F	
	50.0 µm/m-°C	27.8 µin/in-°F	ISO 11359-2
	@Temperature 23.0 - 150 °C	@Temperature 73.4 - 302 °F	
Thermal Conductivity	0.220 W/m-K	1.53 BTU-in/hr-ft ² -°F	ASTM E 1530
Deflection Temperature at 0.46 MPa (66 psi)	237 °C	459 °F	unannealed; ASTM D648
	@Thickness 6.40 mm	@Thickness 0.252 in	
Deflection Temperature at 1.8 MPa (264 psi)	228 °C	442 °F	Flatw 80*10*4 sp=64mm; ISO 75/Af
	217 °C	423 °F	unannealed; ASTM D648
	@Thickness 3.20 mm	@Thickness 0.126 in	
	230 °C	446 °F	unannealed; ASTM D648
	@Thickness 6.40 mm	@Thickness 0.252 in	
Vicat Softening Point	238 °C	460 °F	Rate B/120; ISO 306
	242 °C	468 °F	Rate B/50; ASTM D1525
	242 °C	468 °F	Rate B/50; ISO 306
Glass Transition Temp, Tg	247 °C	477 °F	
Oxygen Index	45 %	45 %	ISO 4589
Glow Wire Test	850 °C	1560 °F	IEC 60695-2-13
	960 °C	1760 °F	IEC 60695-2-12
	@Thickness 3.20 mm	@Thickness 0.126 in	

Optical Properties	Metric	English	Comments
Haze	2.0 %	2.0 %	ASTM D1003
	@Thickness 2.54 mm	@Thickness 0.100 in	
Transmission, Visible	58 %	58 %	2.54 mm; ASTM D1003

Electrical Properties	Metric	English	Comments
Dielectric Constant	3.41	3.41	ASTM D150
	@Frequency 100 Hz	@Frequency 100 Hz	
	3.41	3.41	ASTM D150
	@Frequency 1000 Hz	@Frequency 1000 Hz	
Dielectric Strength	17.0 kV/mm	432 kV/in	in oil; ASTM D149
	@Thickness 3.20 mm	@Thickness 0.126 in	
Dissipation Factor	0.0010	0.0010	IEC 60250
	@Frequency 1000 Hz	@Frequency 1000 Hz	
	0.0070	0.0070	IEC 60250
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	
	0.0080	0.0080	IEC 60250
	@Frequency 100 Hz	@Frequency 100 Hz	
	0.025	0.025	IEC 60250
	@Frequency 50.0 - 60.0 Hz	@Frequency 50.0 - 60.0 Hz	
Comparative Tracking Index	175 V	175 V	IEC 60112

Descriptive Properties	Value	Comments
Ball Pressure Test, 125°C +/- 2°C	Passes	IEC 60695-10-2

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