

## SABIC Innovative Plastics EXTEM VH1003F PEI Copolymer

Category : Polymer , Thermoplastic , Polyetherimide (PEI)

### Material Notes:

Transparent, Thermoplastic Polyimide (TPI) resin with a glass transition temperature (Tg) of 247C. This product has thinwall FR capability and has a UL94 V0 listing. This material is RoHS compliant and also halogen free according VDE/DIN 472 part 815. Global Food Contact Approvals. 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-VH1003F-PEI-Copolymer.php](http://www.lookpolymers.com/polymer_SABIC-Innovative-Plastics-EXTEM-VH1003F-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 <sup>3</sup>	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 <sup>3</sup> /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 Mechanical Properties	50 % Metric	50 % English	Type I, 5 mm/min; ASTM D638 Comments
	50 %	50 %	5 mm/min; 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	1.39 ft-lb/in	ASTM D256
	@Temperature -30.0 °C	@Temperature -22.0 °F	
Izod Impact, Unnotched	NB	NB	ASTM D4812
Izod Impact, Notched (ISO)	4.00 kJ/m <sup>2</sup>	1.90 ft-lb/in <sup>2</sup>	80*10*4; ISO 180/1A
	5.00 kJ/m <sup>2</sup>	2.38 ft-lb/in <sup>2</sup>	80*10*4; ISO 180/1A
	@Temperature -30.0 °C	@Temperature -22.0 °F	
Izod Impact, Unnotched (ISO)	NB	NB	80*10*4; ISO 180/1U
	NB	NB	80*10*4; ISO 180/1U
	@Temperature -30.0 °C	@Temperature -22.0 °F	
Charpy Impact Unnotched	NB	NB	Edgew 80*10*4 sp=62mm; ISO 179/1eU
	NB	NB	Edgew 80*10*4 sp=62mm; ISO 179/1eU
	@Temperature -30.0 °C	@Temperature -22.0 °F	
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
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Thermal Properties	50.0 $\mu\text{m}/\text{m}\cdot\text{C}$ Metric	27.8 $\mu\text{in}/\text{in}\cdot\text{F}$ English	Comments ASTM E 831
CTE, linear, Parallel to Flow	@Temperature -40.0 - 150 $^{\circ}\text{C}$	@Temperature -40.0 - 302 $^{\circ}\text{F}$	
	50.0 $\mu\text{m}/\text{m}\cdot\text{C}$	27.8 $\mu\text{in}/\text{in}\cdot\text{F}$	ISO 11359-2
	@Temperature 23.0 - 150 $^{\circ}\text{C}$	@Temperature 73.4 - 302 $^{\circ}\text{F}$	
CTE, linear, Transverse to Flow	50.0 $\mu\text{m}/\text{m}\cdot\text{C}$	27.8 $\mu\text{in}/\text{in}\cdot\text{F}$	ASTM E 831
	@Temperature -40.0 - 150 $^{\circ}\text{C}$	@Temperature -40.0 - 302 $^{\circ}\text{F}$	
	50.0 $\mu\text{m}/\text{m}\cdot\text{C}$	27.8 $\mu\text{in}/\text{in}\cdot\text{F}$	ISO 11359-2
	@Temperature 23.0 - 150 $^{\circ}\text{C}$	@Temperature 73.4 - 302 $^{\circ}\text{F}$	
Thermal Conductivity	0.220 W/m-K	1.53 BTU-in/hr-ft <sup>2</sup> - $^{\circ}\text{F}$	ASTM E 1530
Deflection Temperature at 0.46 MPa (66 psi)	237 $^{\circ}\text{C}$	459 $^{\circ}\text{F}$	unannealed; ASTM D648
	@Thickness 6.40 mm	@Thickness 0.252 in	
Deflection Temperature at 1.8 MPa (264 psi)	228 $^{\circ}\text{C}$	442 $^{\circ}\text{F}$	Flatw 80*10*4 sp=64mm; ISO 75/Af
	217 $^{\circ}\text{C}$	423 $^{\circ}\text{F}$	unannealed; ASTM D648
	@Thickness 3.20 mm	@Thickness 0.126 in	
	230 $^{\circ}\text{C}$	446 $^{\circ}\text{F}$	unannealed; ASTM D648
	@Thickness 6.40 mm	@Thickness 0.252 in	
Vicat Softening Point	238 $^{\circ}\text{C}$	460 $^{\circ}\text{F}$	Rate B/120; ISO 306
	242 $^{\circ}\text{C}$	468 $^{\circ}\text{F}$	Rate B/50; ASTM D1525
	242 $^{\circ}\text{C}$	468 $^{\circ}\text{F}$	Rate B/50; ISO 306
Glass Transition Temp, Tg	247 $^{\circ}\text{C}$	477 $^{\circ}\text{F}$	
Oxygen Index	45 %	45 %	ISO 4589
Glow Wire Test	850 $^{\circ}\text{C}$	1560 $^{\circ}\text{F}$	IEC 60695-2-13
	960 $^{\circ}\text{C}$	1760 $^{\circ}\text{F}$	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 Optical Properties	58 % Metric	58 % English	2.54 mm; ASTM D1003 Comments
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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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