

SABIC Innovative Plastics Ultem ATX103R PEI+PCE

Category : Polymer , Thermoplastic , Polyetherimide (PEI) , Polyetherimide (PEI) + PCE

Material Notes:

30% Glass fiber filled, high flow Polyetherimide blend with internal mold release. ECO Conforming, UL94 V0 and 5VA listing in recognized colors. 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-Ultem-ATX103R-PEIPCE.php

Physical Properties	Metric	English	Comments
Specific Gravity	1.45 g/cc	1.45 g/cc	ASTM D 792
Density	1.45 g/cc	0.0524 lb/in ³	ISO 1183
Moisture Absorption at Equilibrium	0.12 %	0.12 %	23°C / 50% RH; ISO 62
Water Absorption at Saturation	0.35 % @Temperature 23.0 °C	0.35 % @Temperature 73.4 °F	ISO 62
Linear Mold Shrinkage, Flow	0.0020 - 0.0040 cm/cm	0.0020 - 0.0040 in/in	on tensile bar; SABIC Method
	0.0020 - 0.0040 cm/cm @Thickness 3.20 mm	0.0020 - 0.0040 in/in @Thickness 0.126 in	SABIC Method
Linear Mold Shrinkage, Transverse	0.0030 - 0.0050 cm/cm @Thickness 3.20 mm	0.0030 - 0.0050 in/in @Thickness 0.126 in	SABIC Method
Melt Flow	40 g/10 min @Load 5.00 kg, Temperature 360 °C	40 g/10 min @Load 11.0 lb, Temperature 680 °F	[cm ³ /10 min] Melt Volume Rate; ISO 1133
	60 g/10 min @Load 6.60 kg, Temperature 337 °C	60 g/10 min @Load 14.6 lb, Temperature 639 °F	ASTM D 1238

Mechanical Properties	Metric	English	Comments
Tensile Strength at Break	132 MPa	19100 psi	Type I, 5 mm/min; ASTM D 638
	132 MPa	19100 psi	5 mm/min; ISO 527
Tensile Strength, Yield	132 MPa	19100 psi	Type I, 5 mm/min; ASTM D 638
	132 MPa	19100 psi	5 mm/min; ISO 527
Elongation at Break	2.5 %	2.5 %	5 mm/min; ISO 527
	2.7 %	2.7 %	Type I, 5 mm/min; ASTM D 638

Mechanical Properties	Metric	English	Comments
	2.7 %	2.7 %	Type I, 5 mm/min; ASTM D 638
Tensile Modulus	8.92 GPa	1290 ksi	1 mm/min; ISO 527
	8.97 GPa	1300 ksi	5 mm/min; ASTM D 638
Flexural Yield Strength	203 MPa	29400 psi	1.3 mm/min, 50 mm span; ASTM D 790
	207 MPa	30000 psi	2 mm/min; ISO 178
Flexural Modulus	8.27 GPa	1200 ksi	1.3 mm/min, 50 mm span; ASTM D 790
	8.29 GPa	1200 ksi	2 mm/min; ISO 178
Izod Impact, Notched	1.44 J/cm @Temperature 23.0 °C	2.70 ft-lb/in @Temperature 73.4 °F	ASTM D 256
Izod Impact, Unnotched	9.08 J/cm @Temperature 23.0 °C	17.0 ft-lb/in @Temperature 73.4 °F	ASTM D 4812
Izod Impact, Notched (ISO)	8.00 kJ/m ² @Temperature -30.0 °C	3.81 ft-lb/in ² @Temperature -22.0 °F	80*10*4; ISO 180/1A
	9.00 kJ/m ² @Temperature 23.0 °C	4.28 ft-lb/in ² @Temperature 73.4 °F	80*10*4; ISO 180/1A
Izod Impact, Unnotched (ISO)	52.0 kJ/m ² @Temperature -30.0 °C	24.7 ft-lb/in ² @Temperature -22.0 °F	80*10*4; ISO 180/1U
	58.0 kJ/m ² @Temperature 23.0 °C	27.6 ft-lb/in ² @Temperature 73.4 °F	80*10*4; ISO 180/1U
Charpy Impact Unnotched	6.00 J/cm ² @Temperature 23.0 °C	28.6 ft-lb/in ² @Temperature 73.4 °F	Edgew 80*10*4 sp=62mm; ISO 179/1eU
	6.20 J/cm ² @Temperature -30.0 °C	29.5 ft-lb/in ² @Temperature -22.0 °F	Edgew 80*10*4 sp=62mm; ISO 179/1eU
Charpy Impact, Notched	0.900 J/cm ² @Temperature 23.0 °C	4.28 ft-lb/in ² @Temperature 73.4 °F	V-notch Edgew 80*10*4 sp=62mm; ISO 179/1eA
	0.900 J/cm ² @Temperature -30.0 °C	4.28 ft-lb/in ² @Temperature -22.0 °F	V-notch Edgew 80*10*4 sp=62mm; ISO 179/1eA
	21.0 J	15.5 ft-lb	Instrumented Impact Total Energy;

Impact Test Mechanical Properties	Metric @ Temperature 23.0 °C	English @ Temperature 73.4 °F	ASTM D 3763 Comments
Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	21.0 µm/m-°C	11.7 µin/in-°F	ASTM E 831
	@Temperature -40.0 - 150 °C	@Temperature -40.0 - 302 °F	
	21.0 µm/m-°C	11.7 µin/in-°F	ISO 11359-2
	@Temperature 23.0 - 150 °C	@Temperature 73.4 - 302 °F	
CTE, linear, Transverse to Flow	63.0 µm/m-°C	35.0 µin/in-°F	ASTM E 831
	@Temperature -40.0 - 150 °C	@Temperature -40.0 - 302 °F	
	63.0 µm/m-°C	35.0 µin/in-°F	ISO 11359-2
	@Temperature 23.0 - 150 °C	@Temperature 73.4 - 302 °F	
Deflection Temperature at 0.46 MPa (66 psi)	162 °C	324 °F	Flatw 80*10*4 sp=64mm; ISO 75/Bf
	170 °C	338 °F	unannealed; ASTM D 648
	@Thickness 3.20 mm	@Thickness 0.126 in	
	174 °C	345 °F	unannealed; ASTM D 648
	@Thickness 6.40 mm	@Thickness 0.252 in	
Deflection Temperature at 1.8 MPa (264 psi)	158 °C	316 °F	Flatw 80*10*4 sp=64mm; ISO 75/Af
	161 °C	322 °F	unannealed; ASTM D 648
	@Thickness 3.20 mm	@Thickness 0.126 in	
	165 °C	329 °F	unannealed; ASTM D 648
	@Thickness 6.40 mm	@Thickness 0.252 in	
Vicat Softening Point	176 °C	349 °F	Rate B/50; ISO 306
	177 °C	351 °F	Rate B/120; ISO 306
	180 °C	356 °F	Rate B/50; ASTM D 1525
Flammability, UL94	V-0	V-0	UL 94
	@Thickness 1.50 mm	@Thickness 0.0591 in	
	5VA	5VA	UL 94
	@Thickness 3.00 mm	@Thickness 0.118 in	

Electrical Properties	Metric	English	Comments
Volume Resistivity	1.20e+16 ohm-cm	1.20e+16 ohm-cm	IEC 60093
Surface Resistance	2.80e+13 ohm	2.80e+13 ohm	ROA; IEC 60093
Dielectric Strength	22.0 kV/mm @Thickness 1.60 mm	559 kV/in @Thickness 0.0630 in	in oil; IEC 60243-1
Dissipation Factor	0.0041 @Frequency 50.0 - 60.0 Hz	0.0041 @Frequency 50.0 - 60.0 Hz	IEC 60250
	0.0062 @Frequency 1000 Hz	0.0062 @Frequency 1000 Hz	IEC 60250
	0.0116 @Frequency 1.00e+6 Hz	0.0116 @Frequency 1.00e+6 Hz	IEC 60250
Comparative Tracking Index	125 V	125 V	IEC 60112
	>= 125 V	>= 125 V	IEC 60112

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

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