

SABIC Innovative Plastics ULTEM CRS5011R PEI (Europe-Africa-Middle East)

Category : Polymer , Thermoplastic , Polyetherimide (PEI)

Material Notes:

Enhanced flow Polyetherimide copolymer (Tg 225C) with internal mold release and enhanced chemical resistance to strong acids, bases, aromatics and ketones. Resin is RoHS compliant.

Order this product through the following link:

http://www.lookpolymers.com/polymer_SABIC-Innovative-Plastics-ULTEM-CRS5011R-PEI-Europe-Africa-Middle-East.php

Physical Properties	Metric	English	Comments
Specific Gravity	1.28 g/cc	1.28 g/cc	ASTM D792
Density	1.28 g/cc	0.0462 lb/in ³	ISO 1183
Moisture Absorption	0.200 %	0.200 %	23Â°C / 50% RH; ISO 62
Water Absorption at Saturation	1.2 %	1.2 %	ISO 62
Linear Mold Shrinkage, Flow	0.0040 - 0.0070 cm/cm	0.0040 - 0.0070 in/in	on Tensile Bar; SABIC Method
	0.0040 - 0.0070 cm/cm @Thickness 3.20 mm	0.0040 - 0.0070 in/in @Thickness 0.126 in	SABIC Method
Linear Mold Shrinkage, Transverse	0.0040 - 0.0070 cm/cm @Thickness 3.20 mm	0.0040 - 0.0070 in/in @Thickness 0.126 in	SABIC Method
Melt Flow	11 g/10 min @Load 6.60 kg, Temperature 337 Â°C	11 g/10 min @Load 14.6 lb, Temperature 639 Â°F	ASTM D1238
Melt Index of Compound	20 g/10 min @Load 5.00 kg, Temperature 360 Â°C	20 g/10 min @Load 11.0 lb, Temperature 680 Â°F	MVR [cm ³ /10 min]; ISO 1133

Mechanical Properties	Metric	English	Comments
Tensile Strength at Break	75.0 MPa	10900 psi	Type I, 5 mm/min; ASTM D638
	85.0 MPa	12300 psi	5 mm/min; ISO 527
Tensile Strength, Yield	100 MPa	14500 psi	Type I, 5 mm/min; ASTM D638
	100 MPa	14500 psi	5 mm/min; ISO 527
Elongation at Break	50 %	50 %	5 mm/min; ISO 527
	60 %	60 %	Type I, 5 mm/min; ASTM D638
Elongation at Yield	8.0 %	8.0 %	Type I, 5 mm/min; ASTM D638

Mechanical Properties	Metric SI Unit	English SI Unit	Comments 5 mm/min; ISO 527
Tensile Modulus	2.90 GPa	421 ksi	5 mm/min; ASTM D638
	2.90 GPa	421 ksi	1 mm/min; ISO 527
Flexural Yield Strength	110 MPa	16000 psi	2 mm/min; ISO 178
	138 MPa	20000 psi	1.3 mm/min, 50 mm span; ASTM D790
Flexural Modulus	2.90 GPa	421 ksi	2 mm/min; ISO 178
	3.10 GPa	450 ksi	1.3 mm/min, 50 mm span; ASTM D790
Izod Impact, Notched	0.590 J/cm	1.11 ft-lb/in	ASTM D256
	20.8 J/cm @Thickness 3.20 mm	39.0 ft-lb/in @Thickness 0.126 in	ASTM D256
Izod Impact, Unnotched	21.0 J/cm	39.3 ft-lb/in	ASTM D4812
Izod Impact, Notched (ISO)	5.00 kJ/m ²	2.38 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
Charpy Impact, Notched	0.700 J/cm ²	3.33 ft-lb/in ²	Edgew 80*10*4 sp=62mm; ISO 179/1eA
	0.700 J/cm ² @Temperature -30.0 °C	3.33 ft-lb/in ² @Temperature -22.0 °F	Edgew 80*10*4 sp=62mm; ISO 179/1eA
Dart Drop, Total Energy	30.0 J @Temperature 23.0 °C	22.1 ft-lb @Temperature 73.4 °F	ASTM D3763

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	55.0 $\mu\text{m}/\text{m}\cdot\text{Å}^\circ\text{C}$	30.6 $\mu\text{in}/\text{in}\cdot\text{Å}^\circ\text{F}$	ASTM E 831
	@Temperature -40.0 - 150 $\text{Å}^\circ\text{C}$	@Temperature -40.0 - 302 $\text{Å}^\circ\text{F}$	
	55.0 $\mu\text{m}/\text{m}\cdot\text{Å}^\circ\text{C}$	30.6 $\mu\text{in}/\text{in}\cdot\text{Å}^\circ\text{F}$	ISO 11359-2
	@Temperature 23.0 - 150 $\text{Å}^\circ\text{C}$	@Temperature 73.4 - 302 $\text{Å}^\circ\text{F}$	
CTE, linear, Transverse to Flow	55.0 $\mu\text{m}/\text{m}\cdot\text{Å}^\circ\text{C}$	30.6 $\mu\text{in}/\text{in}\cdot\text{Å}^\circ\text{F}$	ASTM E 831
	@Temperature -40.0 - 150 $\text{Å}^\circ\text{C}$	@Temperature -40.0 - 302 $\text{Å}^\circ\text{F}$	
	55.0 $\mu\text{m}/\text{m}\cdot\text{Å}^\circ\text{C}$	30.6 $\mu\text{in}/\text{in}\cdot\text{Å}^\circ\text{F}$	ISO 11359-2
	@Temperature 23.0 - 150 $\text{Å}^\circ\text{C}$	@Temperature 73.4 - 302 $\text{Å}^\circ\text{F}$	
Thermal Conductivity	0.310 W/m-K	2.15 BTU-in/hr-ft $\text{Å}^2\cdot\text{Å}^\circ\text{F}$	ASTM C177
Deflection Temperature at 0.46 MPa (66 psi)	208 $\text{Å}^\circ\text{C}$	406 $\text{Å}^\circ\text{F}$	Flatw 80*10*4 sp=64mm; ISO 75/Bf
	210 $\text{Å}^\circ\text{C}$	410 $\text{Å}^\circ\text{F}$	Edgew 120*10*4 sp=100mm; ISO 75/Be
	213 $\text{Å}^\circ\text{C}$	415 $\text{Å}^\circ\text{F}$	unannealed; ASTM D648
	@Thickness 3.20 mm	@Thickness 0.126 in	
	216 $\text{Å}^\circ\text{C}$	421 $\text{Å}^\circ\text{F}$	unannealed; ASTM D648
	@Thickness 6.40 mm	@Thickness 0.252 in	
Deflection Temperature at 1.8 MPa (264 psi)	198 $\text{Å}^\circ\text{C}$	388 $\text{Å}^\circ\text{F}$	Flatw 80*10*4 sp=64mm; ISO 75/Af
	200 $\text{Å}^\circ\text{C}$	392 $\text{Å}^\circ\text{F}$	Edgew 120*10*4 sp=100mm; ISO 75/Ae
	201 $\text{Å}^\circ\text{C}$	394 $\text{Å}^\circ\text{F}$	unannealed; ASTM D648
	@Thickness 3.20 mm	@Thickness 0.126 in	
	204 $\text{Å}^\circ\text{C}$	399 $\text{Å}^\circ\text{F}$	unannealed; ASTM D648
	@Thickness 6.40 mm	@Thickness 0.252 in	
Vicat Softening Point	215 $\text{Å}^\circ\text{C}$	419 $\text{Å}^\circ\text{F}$	Rate B/50; ISO 306
	215 $\text{Å}^\circ\text{C}$	419 $\text{Å}^\circ\text{F}$	Rate B/120; ISO 306
	220 $\text{Å}^\circ\text{C}$	428 $\text{Å}^\circ\text{F}$	Rate A/50; ISO 306
	227 $\text{Å}^\circ\text{C}$	441 $\text{Å}^\circ\text{F}$	Rate B/50; ASTM D1525

Glass Transition Temp, Tg Thermal Properties	225 Å°C Metric	437 Å°F English	Comments
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Electrical Properties	Metric	English	Comments
Volume Resistivity	2.50e+15 ohm-cm	2.50e+15 ohm-cm	IEC 60093
Surface Resistance	>= 1.00e+15 ohm	>= 1.00e+15 ohm	ROA; IEC 60093
Dielectric Constant	3.2	3.2	ASTM D150
	@Frequency 50.0 - 60.0 Hz	@Frequency 50.0 - 60.0 Hz	
Dielectric Strength	18.0 kV/mm	457 kV/in	in oil; ASTM D149
	@Thickness 3.20 mm	@Thickness 0.126 in	
	18.1 kV/mm	460 kV/in	in oil; IEC 60243-1
	@Thickness 3.20 mm	@Thickness 0.126 in	
Dissipation Factor	0.0021	0.0021	ASTM D150
	@Frequency 50.0 - 60.0 Hz	@Frequency 50.0 - 60.0 Hz	
	0.0021	0.0021	IEC 60250
	@Frequency 50.0 - 60.0 Hz	@Frequency 50.0 - 60.0 Hz	
Comparative Tracking Index	>= 100 V	>= 100 V	IEC 60112
	150 V	150 V	IEC 60112

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

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