

SABIC Innovative Plastics PC1003R PC

Category : Polymer , Thermoplastic , Polycarbonate (PC)

Material Notes:

PC1003R resin is a medium-low flow (MFR = 10 at 300Â°C/1.2kg), heat and UV stabilized, polycarbonate product with mold release designed for use in the general purpose molding market. 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-PC1003R-PC.php

Physical Properties	Metric	English	Comments
Specific Gravity	1.20 g/cc	1.20 g/cc	ASTM D 792
Density	1.20 g/cc	0.0434 lb/inÂ³	ISO 1183
Moisture Absorption at Equilibrium	0.35 % @Temperature 23.0 Â°C	0.35 % @Temperature 73.4 Â°F	ASTM D 570
Water Absorption at Saturation	0.35 % @Temperature 23.0 Â°C	0.35 % @Temperature 73.4 Â°F	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
Melt Flow	9.0 g/10 min @Load 1.20 kg, Temperature 300 Â°C	9.0 g/10 min @Load 2.65 lb, Temperature 572 Â°F	[cm³/10 min] Melt Volume Rate; ISO 1133
	10 g/10 min @Load 1.20 kg, Temperature 300 Â°C	10 g/10 min @Load 2.65 lb, Temperature 572 Â°F	ASTM D 1238

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell R	120	120	ASTM D 785
	120	120	ISO 2039-2
Tensile Strength, Yield	63.0 MPa	9140 psi	Type I, 50 mm/min; ASTM D 638
	63.0 MPa	9140 psi	50 mm/min; ISO 527
Elongation at Break	>= 70 %	>= 70 %	Type I, 50 mm/min; ASTM D 638
	>= 70 %	>= 70 %	50 mm/min; ISO 527

Mechanical Properties	Metric	English	Comments
	6.0 %	6.0 %	50 mm/min; ISO 527
Tensile Modulus	2.35 GPa	341 ksi	50 mm/min; ASTM D 638
	2.35 GPa	341 ksi	1 mm/min; ISO 527
Flexural Yield Strength	90.0 MPa	13100 psi	1.3 mm/min, 50 mm span; ASTM D 790
	90.0 MPa	13100 psi	2 mm/min; ISO 178
Flexural Modulus	2.30 GPa	334 ksi	1.3 mm/min, 50 mm span; ASTM D 790
	2.30 GPa	334 ksi	2 mm/min; ISO 178
Izod Impact, Notched	8.00 J/cm @Temperature 23.0 Â°C	15.0 ft-lb/in @Temperature 73.4 Â°F	ASTM D 256
Izod Impact, Unnotched	NB @Temperature 23.0 Â°C	NB @Temperature 73.4 Â°F	ASTM D 4812
Izod Impact, Notched (ISO)	12.0 kJ/mÂ² @Temperature -30.0 Â°C	5.71 ft-lb/inÂ² @Temperature -22.0 Â°F	80*10*3; ISO 180/1A
	70.0 kJ/mÂ² @Temperature 23.0 Â°C	33.3 ft-lb/inÂ² @Temperature 73.4 Â°F	80*10*3; ISO 180/1A
Izod Impact, Unnotched (ISO)	NB @Temperature 23.0 Â°C	NB @Temperature 73.4 Â°F	80*10*3; ISO 180/1U
	NB @Temperature -30.0 Â°C	NB @Temperature -22.0 Â°F	80*10*3; ISO 180/1U
Impact Test	65.0 J @Temperature 23.0 Â°C	47.9 ft-lb @Temperature 73.4 Â°F	Instrumented Impact Energy @ peak; ASTM D 3763

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	70.0 Âµm/m-Â°C @Temperature -40.0 - 95.0 Â°C	38.9 Âµin/in-Â°F @Temperature -40.0 - 203 Â°F	ASTM E 831

Thermal Properties	70.0 Åum/m-Å°C Metric	38.9 Åuin/in-Å°F English	Comments ISO 11359-2
	@Temperature 23.0 - 80.0 Å°C	@Temperature 73.4 - 176 Å°F	
Thermal Conductivity	0.200 W/m-K	1.39 BTU-in/hr-ftÅ²-Å°F	ASTM C 177
	0.200 W/m-K	1.39 BTU-in/hr-ftÅ²-Å°F	ISO 8302
Deflection Temperature at 0.46 MPa (66 psi)	138 Å°C	280 Å°F	Flatw 80*10*4 sp=64mm; ISO 75/Bf
	138 Å°C	280 Å°F	ASTM D 648
	@Thickness 3.20 mm	@Thickness 0.126 in	
Deflection Temperature at 1.8 MPa (264 psi)	127 Å°C	261 Å°F	Flatw 80*10*4 sp=64mm; ISO 75/Af
	127 Å°C	261 Å°F	ASTM D 648
	@Thickness 3.20 mm	@Thickness 0.126 in	
Vicat Softening Point	143 Å°C	289 Å°F	Rate B/50; ASTM D 1525
	143 Å°C	289 Å°F	Rate B/50; ISO 306

Optical Properties	Metric	English	Comments
Refractive Index	1.586	1.586	ASTM D 542
	1.586	1.586	ISO 489
Haze	<= 0.80 %	<= 0.80 %	ASTM D 1003
	@Thickness 2.54 mm	@Thickness 0.100 in	
Transmission, Visible	88 - 90 %	88 - 90 %	ASTM D 1003
	@Thickness 2.54 mm	@Thickness 0.100 in	

Electrical Properties	Metric	English	Comments
Volume Resistivity	>= 1.00e+15 ohm-cm	>= 1.00e+15 ohm-cm	ASTM D 257
	>= 1.00e+15 ohm-cm	>= 1.00e+15 ohm-cm	IEC 60093
Dielectric Constant	3.0	3.0	ASTM D 150
	@Frequency 60.0 Hz	@Frequency 60.0 Hz	
	3.0	3.0	ASTM D 150
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	

Electrical Properties	3.0 Metric	3.0 English	Comments
	@Frequency 60.0 Hz	@Frequency 60.0 Hz	
	3.0	3.0	IEC 60250
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	
Dielectric Strength	27.0 kV/mm	686 kV/in	ASTM D 149
	@Thickness 1.60 mm	@Thickness 0.0630 in	
	27.0 kV/mm	686 kV/in	IEC 60243-1
	@Thickness 1.60 mm	@Thickness 0.0630 in	
Dissipation Factor	0.0010	0.0010	ASTM D 150
	@Frequency 60.0 Hz	@Frequency 60.0 Hz	
	0.0010	0.0010	IEC 60250
	@Frequency 60.0 Hz	@Frequency 60.0 Hz	
	0.010	0.010	IEC 60250
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	
	0.010	0.010	ASTM D 150
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	

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

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