

SABIC Innovative Plastics PC2203R PC

Category : Polymer , Thermoplastic , Polycarbonate (PC)

Material Notes:

PC2203R resin is a high flow (MFR = 22 at 300°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-PC2203R-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/in ³ | ISO 1183 |
| Moisture Absorption at Equilibrium | 0.35 % @Temperature 23.0 °C | 0.35 % @Temperature 73.4 °F | ASTM D 570 |
| Water Absorption at Saturation | 0.35 % @Temperature 23.0 °C | 0.35 % @Temperature 73.4 °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 | 21 g/10 min @Load 1.20 kg, Temperature 300 °C | 21 g/10 min @Load 2.65 lb, Temperature 572 °F | [cm ³ /10 min] Melt Volume Rate; ISO 1133 |
| | 22 g/10 min @Load 1.20 kg, Temperature 300 °C | 22 g/10 min @Load 2.65 lb, Temperature 572 °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 | 6.40 J/cm @Temperature 23.0 °C | 12.0 ft-lb/in @Temperature 73.4 °F | ASTM D 256 |
| Izod Impact, Unnotched | NB @Temperature 23.0 °C | NB @Temperature 73.4 °F | ASTM D 4812 |
| Izod Impact, Notched (ISO) | 12.0 kJ/m ² @Temperature -30.0 °C | 5.71 ft-lb/in ² @Temperature -22.0 °F | 80*10*3; ISO 180/1A |
| | 65.0 kJ/m ² @Temperature 23.0 °C | 30.9 ft-lb/in ² @Temperature 73.4 °F | 80*10*3; ISO 180/1A |
| Izod Impact, Unnotched (ISO) | NB @Temperature 23.0 °C | NB @Temperature 73.4 °F | 80*10*3; ISO 180/1U |
| | NB @Temperature -30.0 °C | NB @Temperature -22.0 °F | 80*10*3; ISO 180/1U |
| Impact Test | 55.0 J @Temperature 23.0 °C | 40.6 ft-lb @Temperature 73.4 °F | Instrumented Impact Energy @ peak; ASTM D 3763 |

| Thermal Properties | Metric | English | Comments |
|-------------------------------|--|---|------------|
| CTE, linear, Parallel to Flow | 70.0 Åµm/m-Å°C @Temperature -40.0 - 95.0 Å°C | 38.9 Åµin/in-Å°F @Temperature -40.0 - 203 Å°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) | 133 Å°C | 271 Å°F | Flatw 80*10*4 sp=64mm; ISO 75/Bf |
| | 133 Å°C | 271 Å°F | ASTM D 648 |
| | @Thickness 3.20 mm | @Thickness 0.126 in | |
| Deflection Temperature at 1.8 MPa (264 psi) | 122 Å°C | 252 Å°F | Flatw 80*10*4 sp=64mm; ISO 75/Af |
| | 122 Å°C | 252 Å°F | ASTM D 648 |
| | @Thickness 3.20 mm | @Thickness 0.126 in | |
| Vicat Softening Point | 140 Å°C | 284 Å°F | Rate B/50; ASTM D 1525 |
| | 140 Å°C | 284 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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