

# SABIC® PC PC0703R resin

Polycarbonate

SABIC Innovative Plastics Asia Pacific

## Message:

PC0703R resin is a low flow (MFR = 7 at 300°C/1.2kg), heat and UV stabilized, polycarbonate product with mold release designed for use in the extrusion market. It is available exclusively at [www.sabicpc.com](http://www.sabicpc.com)

| General Information |                   |  |  |
|---------------------|-------------------|--|--|
| UL YellowCard       | E207780-101295396 |  |  |
| Additive            | Heat Stabilizer   |  |  |
|                     | Mold Release      |  |  |
|                     | UV Stabilizer     |  |  |
| Features            | Low Flow          |  |  |
| Processing Method   | Injection Molding |  |  |
|                     | Profile Extrusion |  |  |

| Physical                                   | Nominal Value | Unit                   | Test Method         |
|--------------------------------------------|---------------|------------------------|---------------------|
| Specific Gravity                           | 1.20          | g/cm <sup>3</sup>      | ASTM D792, ISO 1183 |
| Melt Mass-Flow Rate (MFR) (300°C/1.2 kg)   | 7.0           | g/10 min               | ASTM D1238          |
| Melt Volume-Flow Rate (MVR) (300°C/1.2 kg) | 6.50          | cm <sup>3</sup> /10min | ISO 1133            |
| Molding Shrinkage - Flow                   |               |                        | Internal Method     |
| -- <sup>1</sup>                            | 0.50 to 0.70  | %                      |                     |
| 3.20 mm                                    | 0.50 to 0.70  | %                      |                     |
| Water Absorption                           |               |                        |                     |
| Saturation, 23°C                           | 0.35          | %                      | ISO 62              |
| Equilibrium, 23°C                          | 0.35          | %                      | ASTM D570           |

| Hardness                    | Nominal Value | Unit | Test Method           |
|-----------------------------|---------------|------|-----------------------|
| Rockwell Hardness (R-Scale) | 120           |      | ASTM D785, ISO 2039-2 |

| Mechanical         | Nominal Value | Unit | Test Method  |
|--------------------|---------------|------|--------------|
| Tensile Modulus    |               |      |              |
| -- <sup>2</sup>    | 2350          | MPa  | ASTM D638    |
| --                 | 2350          | MPa  | ISO 527-2/1  |
| Tensile Strength   |               |      |              |
| Yield <sup>3</sup> | 63.0          | MPa  | ASTM D638    |
| Yield              | 63.0          | MPa  | ISO 527-2/50 |
| Tensile Elongation |               |      |              |
| Yield <sup>4</sup> | 6.0           | %    | ASTM D638    |
| Yield              | 6.0           | %    | ISO 527-2/50 |
| Break <sup>5</sup> | > 70          | %    | ASTM D638    |

|                                                      |               |                   |                                       |
|------------------------------------------------------|---------------|-------------------|---------------------------------------|
| Break                                                | > 70          | %                 | ISO 527-2/50                          |
| Flexural Modulus                                     |               |                   |                                       |
| 50.0 mm Span <sup>6</sup>                            | 2300          | MPa               | ASTM D790                             |
| -- <sup>7</sup>                                      | 2300          | MPa               | ISO 178                               |
| Flexural Stress                                      |               |                   |                                       |
| --                                                   | 90.0          | MPa               | ISO 178                               |
| Yield, 50.0 mm Span <sup>8</sup>                     | 90.0          | MPa               | ASTM D790                             |
| Impact                                               | Nominal Value | Unit              | Test Method                           |
| Notched Izod Impact                                  |               |                   |                                       |
| 23°C                                                 | 900           | J/m               | ASTM D256                             |
| -30°C <sup>9</sup>                                   | 12            | kJ/m <sup>2</sup> | ISO 180/1A                            |
| 23°C <sup>10</sup>                                   | 70            | kJ/m <sup>2</sup> | ISO 180/1A                            |
| Unnotched Izod Impact                                |               |                   |                                       |
| 23°C                                                 | No Break      |                   | ASTM D4812, ISO 180/1U                |
| -30°C <sup>11</sup>                                  | No Break      |                   | ISO 180/1U                            |
| Instrumented Dart Impact (23°C, Energy at Peak Load) | 65.0          | J                 | ASTM D3763                            |
| Thermal                                              | Nominal Value | Unit              | Test Method                           |
| Deflection Temperature Under Load                    |               |                   |                                       |
| 0.45 MPa, Unannealed, 3.20 mm                        | 138           | °C                | ASTM D648                             |
| 0.45 MPa, Unannealed, 64.0 mm Span <sup>12</sup>     | 138           | °C                | ISO 75-2/Bf                           |
| 1.8 MPa, Unannealed, 3.20 mm                         | 127           | °C                | ASTM D648                             |
| 1.8 MPa, Unannealed, 64.0 mm Span <sup>13</sup>      | 127           | °C                | ISO 75-2/Af                           |
| Vicat Softening Temperature                          | 144           | °C                | ISO 306/B50, ASTM D1525 <sup>14</sup> |
| Ball Pressure Test (125°C)                           | Pass          |                   | IEC 60695-10-2                        |
| CLTE - Flow                                          |               |                   |                                       |
| -40 to 95°C                                          | 7.0E-5        | cm/cm/°C          | ASTM E831                             |
| 23 to 80°C                                           | 7.0E-5        | cm/cm/°C          | ISO 11359-2                           |
| Thermal Conductivity                                 | 0.20          | W/m/K             | ASTM C177, ISO 8302                   |
| Electrical                                           | Nominal Value | Unit              | Test Method                           |
| Volume Resistivity                                   | > 1.0E+15     | ohms·cm           | ASTM D257, IEC 60093                  |
| Dielectric Strength (1.60 mm)                        | 27            | kV/mm             | ASTM D149, IEC 60243-1                |
| Dielectric Constant                                  |               |                   | ASTM D150, IEC 60250                  |
| 60 Hz                                                | 3.00          |                   |                                       |
| 1 MHz                                                | 3.00          |                   |                                       |
| Dissipation Factor                                   |               |                   | ASTM D150, IEC 60250                  |
| 60 Hz                                                | 1.0E-3        |                   |                                       |
| 1 MHz                                                | 0.010         |                   |                                       |
| Flammability                                         | Nominal Value | Unit              | Test Method                           |
| Flame Rating (1.60 mm)                               | V-2           |                   | UL 94                                 |
| Optical                                              | Nominal Value | Unit              | Test Method                           |
| Refractive Index                                     | 1.586         |                   | ASTM D542, ISO 489                    |

|                         |                                    |      |            |
|-------------------------|------------------------------------|------|------------|
| Transmittance (2540 μm) | 88.0 to 90.0                       | %    | ASTM D1003 |
| Haze (2540 μm)          | < 0.80                             | %    | ASTM D1003 |
| Injection               | Nominal Value                      | Unit |            |
| Drying Temperature      | 120                                | °C   |            |
| Drying Time             | 2.0 to 4.0                         | hr   |            |
| Suggested Max Moisture  | 0.020                              | %    |            |
| Hopper Temperature      | 60.0 to 80.0                       | °C   |            |
| Rear Temperature        | 270 to 300                         | °C   |            |
| Middle Temperature      | 280 to 310                         | °C   |            |
| Front Temperature       | 290 to 320                         | °C   |            |
| Nozzle Temperature      | 280 to 310                         | °C   |            |
| Processing (Melt) Temp  | 290 to 320                         | °C   |            |
| Mold Temperature        | 80.0 to 120                        | °C   |            |
| Extrusion               | Nominal Value                      | Unit |            |
| Drying Temperature      | 120                                | °C   |            |
| Drying Time             | 2.0 to 4.0                         | hr   |            |
| Suggested Max Moisture  | 0.020                              | %    |            |
| Hopper Temperature      | 40.0 to 60.0                       | °C   |            |
| Cylinder Zone 1 Temp.   | 260 to 280                         | °C   |            |
| Cylinder Zone 2 Temp.   | 260 to 280                         | °C   |            |
| Cylinder Zone 3 Temp.   | 260 to 280                         | °C   |            |
| Cylinder Zone 4 Temp.   | 260 to 280                         | °C   |            |
| Adapter Temperature     | 260 to 280                         | °C   |            |
| Melt Temperature        | 270 to 280                         | °C   |            |
| Die Temperature         | 250 to 260                         | °C   |            |
| Calibration Temp, First | 70.0 to 90.0                       | °C   |            |
| NOTE                    |                                    |      |            |
| 1.                      | Tensile Bar                        |      |            |
| 2.                      | 50 mm/min                          |      |            |
| 3.                      | Type I, 50 mm/min                  |      |            |
| 4.                      | Type I, 50 mm/min                  |      |            |
| 5.                      | Type I, 50 mm/min                  |      |            |
| 6.                      | 1.3 mm/min                         |      |            |
| 7.                      | 2.0 mm/min                         |      |            |
| 8.                      | 1.3 mm/min                         |      |            |
| 9.                      | 80*10*3                            |      |            |
| 10.                     | 80*10*3                            |      |            |
| 11.                     | 80*10*3                            |      |            |
| 12.                     | 80*10*4 mm                         |      |            |
| 13.                     | 80*10*4 mm                         |      |            |
| 14.                     | Rate B (120°C/h), Loading 2 (50 N) |      |            |

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