

# SABIC® PC RESIN PC1003R

REGION EUROPE

## DESCRIPTION

PC1003R resin is a medium-low flow (MFR = 10 at 300°C/1.2kg), heat and UV stabilized, polycarbonate product with mold release designed for use in the general purpose molding market. It is available exclusively at [www.sabicpc.com](http://www.sabicpc.com)

## TYPICAL PROPERTY VALUES

Revision 20220619

| PROPERTIES                                   | TYPICAL VALUES | UNITS             | TEST METHODS   |
|----------------------------------------------|----------------|-------------------|----------------|
| <b>MECHANICAL</b>                            |                |                   |                |
| Tensile Stress, yld, Type I, 50 mm/min       | 63             | MPa               | ASTM D638      |
| Tensile Strain, yld, Type I, 50 mm/min       | 6              | %                 | ASTM D638      |
| Tensile Strain, brk, Type I, 50 mm/min       | >70            | %                 | ASTM D638      |
| Tensile Modulus, 50 mm/min                   | 2350           | MPa               | ASTM D638      |
| Flexural Stress, yld, 1.3 mm/min, 50 mm span | 90             | MPa               | ASTM D790      |
| Flexural Modulus, 1.3 mm/min, 50 mm span     | 2300           | MPa               | ASTM D790      |
| Hardness, Rockwell R                         | 120            | -                 | ASTM D785      |
| Tensile Stress, yield, 50 mm/min             | 63             | MPa               | ISO 527        |
| Tensile Strain, yield, 50 mm/min             | 6              | %                 | ISO 527        |
| Tensile Strain, break, 50 mm/min             | >70            | %                 | ISO 527        |
| Tensile Modulus, 1 mm/min                    | 2350           | MPa               | ISO 527        |
| Flexural Stress, yield, 2 mm/min             | 90             | MPa               | ISO 178        |
| Flexural Modulus, 2 mm/min                   | 2300           | MPa               | ISO 178        |
| Hardness, Rockwell R                         | 120            | -                 | ISO 2039-2     |
| <b>IMPACT</b>                                |                |                   |                |
| Izod Impact, unnotched, 23°C                 | NB             | J/m               | ASTM D4812     |
| Izod Impact, notched, 23°C                   | 800            | J/m               | ASTM D256      |
| Instrumented Dart Impact Energy @ peak, 23°C | 65             | J                 | ASTM D3763     |
| Izod Impact, unnotched 80*10*3 +23°C         | NB             | kJ/m <sup>2</sup> | ISO 180/1U     |
| Izod Impact, unnotched 80*10*3 -30°C         | NB             | kJ/m <sup>2</sup> | ISO 180/1U     |
| Izod Impact, notched 80*10*3 +23°C           | 70             | kJ/m <sup>2</sup> | ISO 180/1A     |
| Izod Impact, notched 80*10*3 -30°C           | 12             | kJ/m <sup>2</sup> | ISO 180/1A     |
| <b>THERMAL</b>                               |                |                   |                |
| Vicat Softening Temp, Rate B/50              | 143            | °C                | ASTM D1525     |
| HDT, 0.45 MPa, 3.2 mm                        | 138            | °C                | ASTM D648      |
| HDT, 1.82 MPa, 3.2 mm                        | 127            | °C                | ASTM D648      |
| CTE, -40°C to 95°C, flow                     | 7.E-05         | 1/°C              | ASTM E831      |
| Thermal Conductivity                         | 0.2            | W/m·°C            | ASTM C177      |
| Thermal Conductivity                         | 0.2            | W/m·°C            | ISO 8302       |
| CTE, 23°C to 80°C, flow                      | 7.E-05         | 1/°C              | ISO 11359-2    |
| Ball Pressure Test, 125°C +/- 2°C            | Passes         | -                 | IEC 60695-10-2 |
| Vicat Softening Temp, Rate B/50              | 143            | °C                | ISO 306        |
| HDT/Bf, 0.45 MPa Flatw 80*10*4 sp=64mm       | 138            | °C                | ISO 75/Bf      |
| HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm        | 127            | °C                | ISO 75/Af      |

| PROPERTIES                              | TYPICAL VALUES | UNITS                    | TEST METHODS |
|-----------------------------------------|----------------|--------------------------|--------------|
| PHYSICAL                                |                |                          |              |
| Specific Gravity                        | 1.2            | -                        | ASTM D792    |
| Water Absorption, (23°C/Saturated)      | 0.35           | %                        | ASTM D570    |
| Mold Shrinkage on Tensile Bar, flow     | 0.5 – 0.7      | %                        | SABIC method |
| Mold Shrinkage, flow, 3.2 mm            | 0.5 – 0.7      | %                        | SABIC method |
| Melt Flow Rate, 300°C/ 1.2 kgf          | 10             | g/ 10 min                | ASTM D1238   |
| Density                                 | 1.2            | g/cm <sup>3</sup>        | ISO 1183     |
| Water Absorption, (23°C/saturated)      | 0.35           | %                        | ISO 62-1     |
| Melt Volume Rate, MVR at 300°C/ 1.2 kg  | 9              | cm <sup>3</sup> / 10 min | ISO 1133     |
| OPTICAL                                 |                |                          |              |
| Light Transmission, 2.54 mm             | 88 – 90        | %                        | ASTM D1003   |
| Haze, 2.54 mm                           | <0.8           | %                        | ASTM D1003   |
| Refractive Index                        | 1.586          | -                        | ASTM D542    |
| Refractive Index                        | 1.586          | -                        | ISO 489      |
| ELECTRICAL                              |                |                          |              |
| Volume Resistivity                      | >1.E+15        | Ω.cm                     | ASTM D257    |
| Dielectric Strength, 1.6 mm             | 27             | kV/mm                    | ASTM D149    |
| Relative Permittivity, 60 Hz            | 3              | -                        | ASTM D150    |
| Relative Permittivity, 1 MHz            | 3              | -                        | ASTM D150    |
| Dissipation Factor, 60 Hz               | 0.001          | -                        | ASTM D150    |
| Dissipation Factor, 1 MHz               | 0.01           | -                        | ASTM D150    |
| Volume Resistivity                      | >1.E+15        | Ω.cm                     | IEC 60093    |
| Dielectric Strength, 1.6 mm             | 27             | kV/mm                    | IEC 60243-1  |
| Relative Permittivity, 60 Hz            | 3              | -                        | IEC 60250    |
| Relative Permittivity, 1 MHz            | 3              | -                        | IEC 60250    |
| Dissipation Factor, 60 Hz               | 0.001          | -                        | IEC 60250    |
| Dissipation Factor, 1 MHz               | 0.01           | -                        | IEC 60250    |
| FLAME CHARACTERISTICS                   |                |                          |              |
| UL Recognized, 94V-2 Flame Class Rating | 1.6            | mm                       | UL 94        |
| INJECTION MOLDING                       |                |                          |              |
| Drying Temperature                      | 120            | °C                       |              |
| Drying Time                             | 2 – 4          | Hrs                      |              |
| Maximum Moisture Content                | 0.02           | %                        |              |
| Melt Temperature                        | 280 – 310      | °C                       |              |
| Nozzle Temperature                      | 270 – 290      | °C                       |              |
| Front - Zone 3 Temperature              | 280 – 310      | °C                       |              |
| Middle - Zone 2 Temperature             | 270 – 290      | °C                       |              |
| Rear - Zone 1 Temperature               | 260 – 280      | °C                       |              |
| Hopper Temperature                      | 60 – 80        | °C                       |              |
| Mold Temperature                        | 80 – 110       | °C                       |              |



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