

# Ultradur<sup>®</sup> B 4040 G10 BK05110

## Polybutylene Terephthalate/Polyethylene Terephthalate

### Product Description

Ultradur B 4040 G10 BK05110 is a pigmented black, injection molding PBT with 50% glass fiber reinforced for technical parts with excellent surface finish.

### Applications

Typical applications include automotive exterior, door handles, exterior mirror housings, rear screen, wiper arms.

| PHYSICAL  | ISO Test Method | Property Value |
|---|-----------------|----------------|
| Density, g/cm <sup>3</sup>                            | 1183            | 1.73           |
| Viscosity Number, cm <sup>2</sup> /g                  | 1628            | 97             |
| Moisture, %   | 62              |                |
| (50% RH)  |                 | 0.12           |
| (Saturation)  |                 | 0.4            |
| RHEOLOGICAL   | ISO Test Method | Property Value |
| Melt Volume Rate (275 °C/2.16 Kg), cc/10min.          | 1133            | 6              |
| MECHANICAL  | ISO Test Method | Property Value |
| Tensile Modulus, MPa                                  | 527             |                |
| 23°C  |                 | 16,500         |
| Tensile stress at break, MPa                          | 527             |                |
| 23°C  |                 | 155            |
| Tensile strain at break, %                            | 527             |                |
| 23°C  |                 | 1.5            |
| Flexural Strength, MPa                                | 178             |                |
| 23°C  |                 | 225            |
| Flexural Modulus, MPa                                 | 178             |                |
| 23°C  |                 | 15,000         |
| IMPACT  | ISO Test Method | Property Value |
| Izod Notched Impact, kJ/m <sup>2</sup>                | 180             |                |
| -40°C   |                 | 8.1            |
| 23°C  |                 | 8.2            |
| Charpy Notched, kJ/m <sup>2</sup>                     | 179             |                |
| -30°C   |                 | 8.5            |
| 23°C  |                 | 10             |
| Charpy Unnotched, kJ/m <sup>2</sup>                   | 179             |                |
| -30°C   |                 | 69             |
| 23°C  |                 | 52             |
| THERMAL   | ISO Test Method | Property Value |
| Melting Point, °C                                     | 3146            | 223            |
| HDT A, °C   | 75              | 205            |
| HDT B, °C   | 75              | 221            |
| Coef. of Linear Thermal Expansion, Parallel, mm/mm °C |                 | 0.25 X10-4     |
| ELECTRICAL  | ISO Test Method | Property Value |
| Volume Resistivity (Ohm)                              | IEC 60093       | >1E13          |
| Surface Resistivity (Ohm-m)                           | IEC 60093       | 1E13           |
| Dielectric Constant (100 Hz)                          | IEC 60250       | 4              |
| Dielectric Constant (1 MHz)                           | IEC 60250       | 4              |
| Dissipation Factor (100 Hz)                           | IEC 60250       | 12             |
| Dissipation Factor (1 MHz)                            | IEC 60250       | 150            |

### Processing Guidelines

#### Material Handling

Max. Water content: 0.04%

To ensure optimum part performance, this product must be dried prior to molding and maintained at a moisture level of less than 0.04%. Dehumidifying or desiccant dryers operating at 100-120 degC (212-248 degF) for 4 hours drying time are recommended. Further information concerning safe handling procedures can be obtained from the Safety Data Sheet. Alternatively, please contact your BASF representative.

#### Typical Profile

Melt Temperature 250-270 degC (482-518 degF)

Mold Temperature 60-100 degC (140-212 degF)

Injection and Packing Pressure 35-125 bar (500-1500 psi)

#### Mold Temperatures

This product can be processed over mold temperatures of 60-100 degC (140-212 degF); however, for optimizing surface appearance, dimensional stability and part performance, mold surface temperatures of at least 80 degC (176 degF) are preferred.

#### Pressures

Injection pressure controls the filling of the part and should be applied for 90% of ram travel. Packing pressure affects the final part and can be

used effectively in controlling sink marks and shrinkage. It should be applied and maintained until the gate area is completely frozen off.

Back pressure can be utilized to provide uniform melt consistency and reduce trapped air and gas. A maximum of 10 bar (145 psi) is recommended due to the risk of excessive shear.

**Fill Rate**

Fast fill rates are recommended to ensure uniform melt delivery to the cavity and prevent premature freezing. Surface appearance is directly affected by injection rate.

**Note**

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