

**Product Information**

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# Ultradur® S 4090 G6 PBT (Polybutylene Terephthalate)


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**Product Description**

Ultradur S 4090 G6 is a 30% glass reinforced PBT+ASA blend. It produces moldings with good surface finish, is resistant to chemicals and stress cracking, and has low shrinkage and warpage.

**Applications**

Applications include highly stressed equipment housings in the automotive, electrical and household sectors.

| PHYSICAL                                   | ASTM Test Method | Property Value    |
|--------------------------------------------|------------------|-------------------|
| Specific Gravity                           | D-792            | 1.47              |
| Mold Shrinkage (1/8" bar, in/in)           |                  | 0.003             |
| Moisture, %                                | D-570            |                   |
| (50% RH)                                   |                  | 0.2               |
| (Saturation)                               |                  | 0.4               |
| MECHANICAL                                 | ASTM Test Method | Property Value    |
| Tensile Strength, Break, MPa (psi)         | D-638            |                   |
| 23°C (73°F)                                |                  | 125 (18,100)      |
| Elongation, Break, %                       | D-638            |                   |
| 23°C (73°F)                                |                  | 2.2               |
| Flexural Modulus, MPa (psi)                | D-790            |                   |
| 23°C (73°F)                                |                  | 8,270 (1,200,000) |
| Flexural Strength, MPa (psi)               | D-790            |                   |
| 23°C (73°F)                                |                  | 194 (28,100)      |
| IMPACT                                     | ASTM Test Method | Property Value    |
| Notched Izod Impact, J/M (ft-lbs/in)       | D-256            |                   |
| -40°C (-40°F)                              |                  | 69 (1.3)          |
| 23°C (73°F)                                |                  | 85 (1.6)          |
| THERMAL                                    | ASTM Test Method | Property Value    |
| Melting Point, °C(°F)                      | D-3418           | 223 (433)         |
| Heat Deflection @ 264 psi (1.8 MPa) °C(°F) | D-648            | 177 (350)         |
| Heat Deflection @ 66 psi (.45 MPa) °C(°F)  | D-648            | 210 (410)         |
| UL RATINGS                                 | UL Test Method   | Property Value    |
| Flammability Rating, 0.69mm                | UL94             | HB                |
| Relative Temperature Index, 0.69mm         | UL746B           |                   |
| Mechanical w/o Impact, °C                  |                  | 130               |
| Mechanical w/ Impact, °C                   |                  | 90                |
| Electrical, °C                             |                  | 130               |
| Flammability Rating, 1.5mm                 | UL94             | HB                |
| Relative Temperature Index, 1.5mm          | UL746B           |                   |
| Mechanical w/o Impact, °C                  |                  | 130               |
| Mechanical w/ Impact, °C                   |                  | 90                |
| Electrical, °C                             |                  | 130               |
| Flammability Rating, 3.0mm                 | UL94             | HB                |
| Relative Temperature Index, 3.0mm          | UL746B           |                   |
| Mechanical w/o Impact, °C                  |                  | 130               |
| Mechanical w/ Impact, °C                   |                  | 90                |
| Electrical, °C                             |                  | 130               |
| ELECTRICAL                                 | ASTM Test Method | Property Value    |
| Volume Resistivity, 1.5 mm                 | D-257            | >1E13             |
| Surface Resistivity, 1.5 mm                | D-257            | 1E14              |

**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°C (212-248°F) 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°C (482-518°F)

Mold Temperature 60-100°C (140-212°F)

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

**Mold Temperatures**

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