

# Ultradur® S 4090 G6X

Polybutylene Terephthalate + ASA

BASF Corporation

## Message:

Low-warpage, easy-flowing injection molding grade with 30 % glass fibres for technical parts, for which dimensional stability is very important, reduction of wall thickness (eg, e/e housings, plug-and-socket connectors).

| General Information                         |                                             |                        |             |
|---------------------------------------------|---------------------------------------------|------------------------|-------------|
| Filler / Reinforcement                      | Glass Fiber,30% Filler by Weight            |                        |             |
| Features                                    | Good Dimensional Stability                  |                        |             |
|                                             | Good Flow                                   |                        |             |
|                                             | Low Warpage                                 |                        |             |
| Uses                                        | Connectors                                  |                        |             |
|                                             | Engineering Parts                           |                        |             |
|                                             | Housings                                    |                        |             |
| Agency Ratings                              | EC 1907/2006 (REACH)                        |                        |             |
| RoHS Compliance                             | RoHS Compliant                              |                        |             |
| Appearance                                  | Black                                       |                        |             |
|                                             | Colors Available                            |                        |             |
|                                             | Natural Color                               |                        |             |
| Forms                                       | Pellets                                     |                        |             |
| Processing Method                           | Injection Molding                           |                        |             |
| Multi-Point Data                            | Shear Modulus vs. Temperature (ISO 11403-1) |                        |             |
| Resin ID (ISO 1043)                         | PBT-ASA-GF30                                |                        |             |
| Physical                                    | Nominal Value                               | Unit                   | Test Method |
| Density                                     | 1.47                                        | g/cm <sup>3</sup>      | ISO 1183    |
| Apparent Density                            | 0.70 to 0.80                                | g/cm <sup>3</sup>      |             |
| Melt Volume-Flow Rate (MVR) (275°C/2.16 kg) | 20.0                                        | cm <sup>3</sup> /10min | ISO 1133    |
| Molding Shrinkage                           |                                             |                        | ISO 294-4   |
| Across Flow                                 | 0.82                                        | %                      |             |
| Flow                                        | 0.29                                        | %                      |             |
| Water Absorption                            |                                             |                        | ISO 62      |
| Saturation, 23°C                            | 0.40                                        | %                      |             |
| Equilibrium, 23°C, 50% RH                   | 0.20                                        | %                      |             |
| Viscosity Number <sup>1</sup>               | 104                                         | cm <sup>3</sup> /g     | ISO 307     |
| Mold Shrinkage <sup>2</sup>                 |                                             |                        |             |
| free, longitudinal                          | 0.16                                        | %                      |             |

| free, transverse                        | 0.95          | %                 |                      |
|-----------------------------------------|---------------|-------------------|----------------------|
| Automotive Materials (> 1.00 mm)        | Passed        |                   | FMVSS 302            |
| Screw Speed                             | < 250         | mm/sec            |                      |
| Mechanical                              | Nominal Value | Unit              | Test Method          |
| Tensile Modulus                         | 9600          | MPa               | ISO 527-2            |
| Tensile Stress (Break)                  | 128           | MPa               | ISO 527-2            |
| Tensile Strain (Break)                  | 2.5           | %                 | ISO 527-2            |
| Flexural Stress                         | 190           | MPa               | ISO 178              |
| Impact                                  | Nominal Value | Unit              | Test Method          |
| Charpy Notched Impact Strength (23°C)   | 7.5           | kJ/m <sup>2</sup> | ISO 179/1eA          |
| Charpy Unnotched Impact Strength        |               |                   | ISO 179/1eU          |
| -30°C                                   | 52            | kJ/m <sup>2</sup> |                      |
| 23°C                                    | 61            | kJ/m <sup>2</sup> |                      |
| Thermal                                 | Nominal Value | Unit              | Test Method          |
| Heat Deflection Temperature             |               |                   |                      |
| 0.45 MPa, Unannealed                    | 220           | °C                | ISO 75-2/B           |
| 1.8 MPa, Unannealed                     | 205           | °C                | ISO 75-2/A           |
| Melting Temperature                     | 223           | °C                | ISO 11357-3          |
| CLTE - Flow (23 to 80°C)                | 3.0E-5        | cm/cm/°C          | ISO 11359-2          |
| Specific Heat                           | 1150          | J/kg/°C           |                      |
| Electrical                              | Nominal Value | Unit              | Test Method          |
| Surface Resistivity                     | 1.0E+14       | ohms              | IEC 60093            |
| Volume Resistivity                      | 1.0E+16       | ohms · cm         | IEC 60093            |
| Relative Permittivity                   |               |                   | IEC 60250            |
| 100 Hz                                  | 3.90          |                   |                      |
| 1 MHz                                   | 3.70          |                   |                      |
| Dissipation Factor                      |               |                   | IEC 60250            |
| 100 Hz                                  | 4.6E-3        |                   |                      |
| 1 MHz                                   | 0.020         |                   |                      |
| Comparative Tracking Index (Solution A) | 425           | V                 | IEC 60112            |
| Flammability                            | Nominal Value | Unit              | Test Method          |
| Flammability Classification             |               |                   | IEC 60695-11-10, -20 |
| 0.800 mm                                | HB            |                   |                      |
| 1.60 mm                                 | HB            |                   |                      |
| Injection                               | Nominal Value | Unit              |                      |
| Drying Temperature                      | 80.0 to 120   | °C                |                      |
| Drying Time                             | 4.0           | hr                |                      |
| Suggested Max Moisture                  | 0.040         | %                 |                      |
| Hopper Temperature                      | 80.0          | °C                |                      |
| Rear Temperature                        | 260           | °C                |                      |
| Middle Temperature                      | 265           | °C                |                      |
| Front Temperature                       | 270           | °C                |                      |

|                        |             |    |
|------------------------|-------------|----|
| Nozzle Temperature     | 270         | °C |
| Processing (Melt) Temp | 250 to 275  | °C |
| Mold Temperature       | 60.0 to 100 | °C |

NOTE

|    |                                                      |
|----|------------------------------------------------------|
| 1. | solution 0,005 g/ml Phenole/1,2<br>Dichlorbenzol 1:1 |
| 2. | plate with film gate 150*150*3<br>mm <sup>3</sup>    |

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