

# Ultradur® B 4300 GM42

Polybutylene Terephthalate

BASF Corporation

## Message:

Injection molding grade, containing a glass fiber and mineral reinforcement, for parts with good surface finish and stiffness, as well as low warpage tendency (eg housings, PCBs).

| General Information                                 |                                  |                        |             |
|-----------------------------------------------------|----------------------------------|------------------------|-------------|
| Filler / Reinforcement                              | Glass Fiber,20% Filler by Weight |                        |             |
|                                                     | Mineral,10% Filler by Weight     |                        |             |
| Features                                            | Good Stiffness                   |                        |             |
|                                                     | Good Surface Finish              |                        |             |
|                                                     | Low Warpage                      |                        |             |
| Uses                                                | Housings                         |                        |             |
|                                                     | Printed Circuit Boards           |                        |             |
| Agency Ratings                                      | EC 1907/2006 (REACH)             |                        |             |
| RoHS Compliance                                     | RoHS Compliant                   |                        |             |
| Appearance                                          | Black                            |                        |             |
|                                                     | Colors Available                 |                        |             |
|                                                     | Natural Color                    |                        |             |
| Forms                                               | Pellets                          |                        |             |
| Processing Method                                   | Injection Molding                |                        |             |
| Resin ID (ISO 1043)                                 | PBT-GF20+M10                     |                        |             |
| Physical                                            | Nominal Value                    | Unit                   | Test Method |
| Density                                             | 1.55                             | g/cm <sup>3</sup>      | ISO 1183    |
| Apparent Density                                    | 0.70 to 0.80                     | g/cm <sup>3</sup>      |             |
| Melt Volume-Flow Rate (MVR) (250°C/2.16 kg)         | 17.0                             | cm <sup>3</sup> /10min | ISO 1133    |
| Water Absorption                                    |                                  |                        | ISO 62      |
| Saturation, 23°C                                    | 0.40                             | %                      |             |
| Equilibrium, 23°C, 50% RH                           | 0.20                             | %                      |             |
| Viscosity Number <sup>1</sup>                       | 101                              | cm <sup>3</sup> /g     | ISO 307     |
| Mold Shrinkage <sup>2</sup>                         |                                  |                        |             |
| free, longitudinal                                  | 0.50                             | %                      |             |
| free, transverse                                    | 1.3                              | %                      |             |
| Maximum Service Temperature - short cycle operation | 200                              | °C                     |             |

|                                                     |               |                   |                      |
|-----------------------------------------------------|---------------|-------------------|----------------------|
| Temperature Index - at 50% loss of tensile strength |               |                   | IEC 60216            |
| -- <sup>3</sup>                                     | 120           | °C                |                      |
| -- <sup>4</sup>                                     | 130           | °C                |                      |
| Automotive Materials (> 1.00 mm)                    | Passed        |                   | FMVSS 302            |
| Screw Speed                                         | < 250         | mm/sec            |                      |
| Hardness                                            | Nominal Value | Unit              | Test Method          |
| Ball Indentation Hardness (H 358/30)                | 195           | MPa               | ISO 2039-1           |
| Mechanical                                          | Nominal Value | Unit              | Test Method          |
| Tensile Modulus                                     | 7900          | MPa               | ISO 527-2            |
| Tensile Stress (Break)                              | 105           | MPa               | ISO 527-2            |
| Tensile Strain (Break)                              | 2.7           | %                 | ISO 527-2            |
| Tensile Creep Modulus <sup>5</sup> (1000 hr)        | 4500          | MPa               | ISO 899-1            |
| Impact                                              | Nominal Value | Unit              | Test Method          |
| Charpy Notched Impact Strength (23°C)               | 4.5           | kJ/m <sup>2</sup> | ISO 179/1eA          |
| Charpy Unnotched Impact Strength                    |               |                   | ISO 179/1eU          |
| -30°C                                               | 43            | kJ/m <sup>2</sup> |                      |
| 23°C                                                | 45            | 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                                 | 210           | °C                | ISO 75-2/A           |
| Melting Temperature                                 | 223           | °C                | ISO 11357-3          |
| CLTE - Flow (23 to 80°C)                            | 4.0E-5        | cm/cm/°C          | ISO 11359-2          |
| Specific Heat                                       | 1500          | J/kg/°C           |                      |
| Electrical                                          | Nominal Value | Unit              | Test Method          |
| Surface Resistivity                                 | 1.0E+13       | ohms              | IEC 60093            |
| Volume Resistivity                                  | 1.0E+16       | ohms · cm         | IEC 60093            |
| Relative Permittivity                               |               |                   | IEC 60250            |
| 100 Hz                                              | 3.80          |                   |                      |
| 1 MHz                                               | 3.80          |                   |                      |
| Dissipation Factor                                  |               |                   | IEC 60250            |
| 100 Hz                                              | 1.2E-3        |                   |                      |
| 1 MHz                                               | 0.015         |                   |                      |
| Comparative Tracking Index                          |               |                   | IEC 60112            |
| Solution A                                          | 300           | V                 |                      |
| Solution B                                          | 125           | V                 |                      |
| Flammability                                        | Nominal Value | Unit              | Test Method          |
| Flammability Classification                         |               |                   | IEC 60695-11-10, -20 |
| 0.400 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       | 240          | °C |
| Middle Temperature     | 245          | °C |
| Front Temperature      | 250          | °C |
| Nozzle Temperature     | 250          | °C |
| Processing (Melt) Temp | 250 to 275   | °C |
| Mold Temperature       | 60.0 to 90.0 | °C |

#### NOTE

1. solution 0,005 g/ml Phenole/1,2  
Dichlorbenzol 1:1
2. plate with film gate 150\*150\*3  
mm<sup>3</sup>
3. 20000 h
4. 5000 h
5. strain <= 0.5%, 23°C

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