

## Ultradur® B 4406 G6

PBT-GF30 FR(17)

BASF

Injection molding grade with 30 % glass fibers for parts requiring enhanced fire resistance (eg potentiometer parts, plug-and-socket connectors, switches).

Abbreviated designation according to ISO 1043: PBT-GF30 FR(17)

| Rheological properties      | Value | Unit                   | Test Standard   |
|-----------------------------|-------|------------------------|-----------------|
| <b>ISO Data</b>             |       |                        |                 |
| Melt volume-flow rate, MVR  | 8     | cm <sup>3</sup> /10min | ISO 1133        |
| Temperature                 | 275   | °C                     | -               |
| Load                        | 2.16  | kg                     | -               |
| Molding shrinkage, parallel | 0.3   | %                      | ISO 294-4, 2577 |
| Molding shrinkage, normal   | 1.1   | %                      | ISO 294-4, 2577 |

| Mechanical Properties                   | Value | Unit              | Test Standard |
|-----------------------------------------|-------|-------------------|---------------|
| <b>ISO Data</b>                         |       |                   |               |
| Tensile Modulus                         | 11300 | MPa               | ISO 527       |
| Stress at Break                         | 145   | MPa               | ISO 527       |
| Strain at Break                         | 2.3   | %                 | ISO 527       |
| Tensile Creep Modulus, 1000h            | 7500  | MPa               | ISO 899-1     |
| Impact Strength (Charpy), +23°C         | 60    | kJ/m <sup>2</sup> | ISO 179/1eU   |
| Impact Strength (Charpy), -30°C         | 55    | kJ/m <sup>2</sup> | ISO 179/1eU   |
| Notched Impact Strength (Charpy), +23°C | 10    | kJ/m <sup>2</sup> | ISO 179/1eA   |

| Thermal Properties                          | Value | Unit  | Test Standard   |
|---------------------------------------------|-------|-------|-----------------|
| <b>ISO Data</b>                             |       |       |                 |
| Melting Temperature (10°C/min)              | 223   | °C    | ISO 11357-1/-3  |
| Temp. of deflection under load (1.80 MPa)   | 205   | °C    | ISO 75-1/-2     |
| Temp. of deflection under load (0.45 MPa)   | 220   | °C    | ISO 75-1/-2     |
| Vicat softening temperature, 50°C/h 50N     | 223   | °C    | ISO 306         |
| Coeff. of Linear Therm. Expansion, parallel | 23    | E-6/K | ISO 11359-1/-2  |
| Coeff. of Linear Therm. Expansion, normal   | 97    | E-6/K | ISO 11359-1/-2  |
| Burning Behav. at 1.5 mm Nom. Thickn.       | V-0   | class | UL 94           |
| Thickness tested                            | 1.6   | mm    | -               |
| UL recognition                              | yes   | -     | -               |
| Burning Behav. at thickness h               | V-0   | class | UL 94           |
| Thickness tested                            | 0.4   | mm    | -               |
| UL recognition                              | yes   | -     | -               |
| Burning Behav. 5V at Thickness h            | 5VA   | class | IEC 60695-11-20 |
| Thickness tested                            | 1.5   | mm    | -               |
| Yellow Card available                       | yes   | -     | -               |
| Oxygen index                                | 32    | %     | ISO 4589-1/-2   |

| Electrical Properties        | Value | Unit  | Test Standard |
|------------------------------|-------|-------|---------------|
| <b>ISO Data</b>              |       |       |               |
| Relative permittivity, 100Hz | 3.9   | -     | IEC 62631-2-1 |
| Relative permittivity, 1MHz  | 3.9   | -     | IEC 62631-2-1 |
| Dissipation Factor, 100Hz    | 20    | E-4   | IEC 62631-2-1 |
| Dissipation Factor, 1MHz     | 150   | E-4   | IEC 62631-2-1 |
| Volume Resistivity           | 1E13  | Ohm*m | IEC 62631-3-1 |
| Surface Resistivity          | 1E14  | Ohm   | IEC 62631-3-2 |
| Electric Strength            | 40    | kV/mm | IEC 60243-1   |
| Comparative tracking index   | 200   | -     | IEC 60112     |

| Other Properties    | Value | Unit              | Test Standard  |
|---------------------|-------|-------------------|----------------|
| <b>ISO Data</b>     |       |                   |                |
| Water Absorption    | 0.4   | %                 | Sim. to ISO 62 |
| Humidity absorption | 0.2   | %                 | Sim. to ISO 62 |
| Density             | 1650  | kg/m <sup>3</sup> | ISO 1183       |

| Material Specific Properties | Value | Unit | Test Standard |
|------------------------------|-------|------|---------------|
| <b>ISO Data</b>              |       |      |               |

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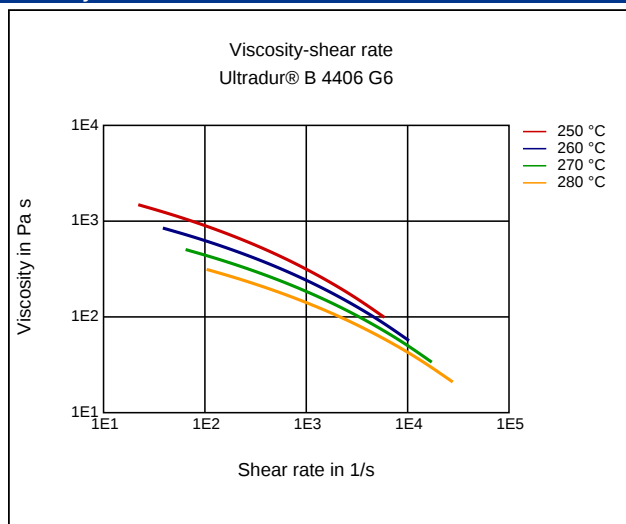
|                  |     |       |                     |
|------------------|-----|-------|---------------------|
| Viscosity number | 108 | cm³/g | ISO 307, 1157, 1628 |
|------------------|-----|-------|---------------------|

| Test specimen production              | Value | Unit | Test Standard |
|---------------------------------------|-------|------|---------------|
| <b>ISO Data</b>                       |       |      |               |
| Injection Molding, melt temperature   | 250   | °C   | ISO 294       |
| Injection Molding, mold temperature   | 80    | °C   | ISO 294       |
| Injection Molding, injection velocity | 200   | mm/s | ISO 294       |

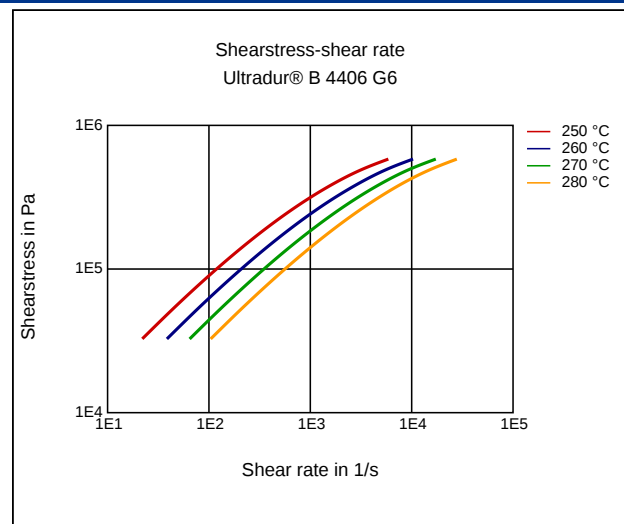
| Processing Recommendation Injection Molding | Value     | Unit | Test Standard |
|---------------------------------------------|-----------|------|---------------|
| Pre-drying - Temperature                    | 80 - 120  | °C   | -             |
| Pre-drying - Time                           | 4         | h    | -             |
| Processing humidity                         | ≤0.04     | %    | -             |
| Melt temperature                            | 250 - 275 | °C   | -             |
| Mold temperature                            | 60 - 100  | °C   | -             |

## Diagrams

### Viscosity-shear rate



### Shearstress-shear rate

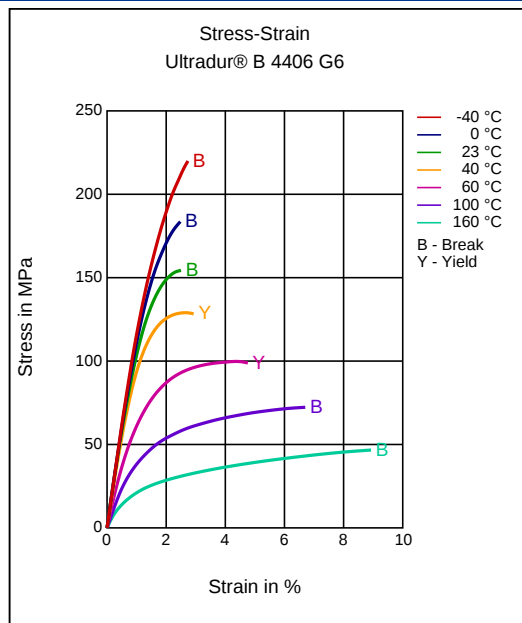


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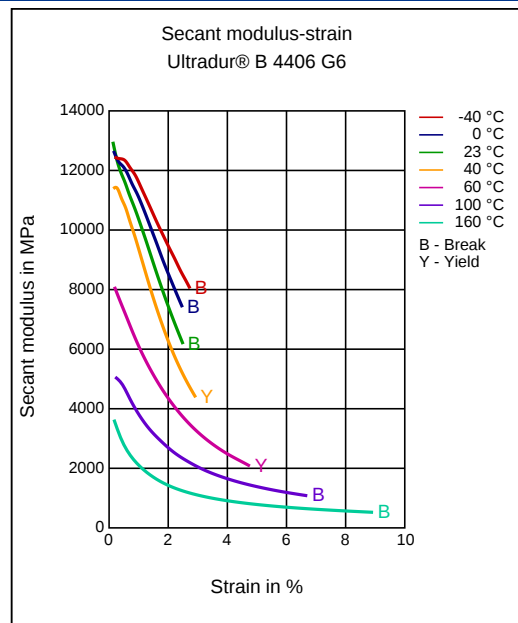
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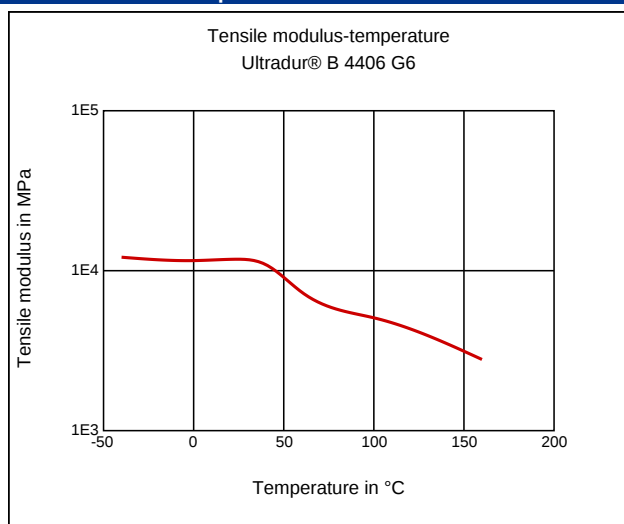
### Stress-strain



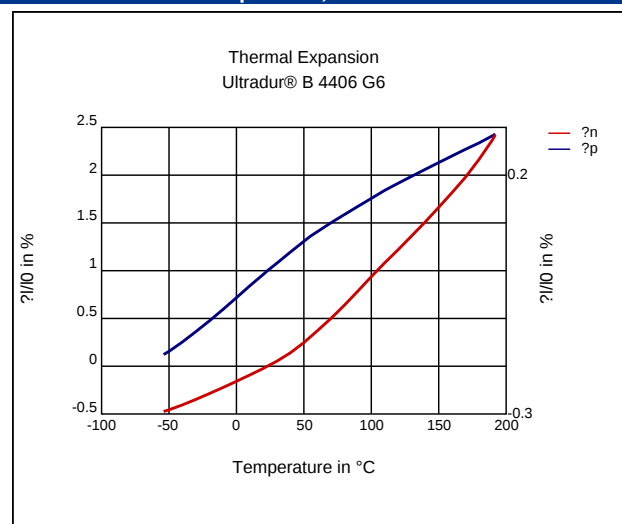
### Secant modulus-strain



### Tensile Modulus-Temperature



### Coeff. of linear thermal expansion, normal



### Characteristics

#### Processing

Injection Molding

#### Delivery form

Pellets

#### Additives

Lubricants

#### Special Characteristics

Flame retardant, Light stabilized or stable to light, UV stablized, Heat aging stabilized

### Injection Molding

#### PREPROCESSING

Pre/Post-processing, max. allowed water content: .04 %

Pre/Post-processing, Pre-drying, Temperature: 80 - 120 °C

Pre/Post-processing, Pre-drying, Time: 4 h

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### PROCESSING

injection molding, Melt temperature, range: 250 - 275 °C

injection molding, Melt temperature, recommended: 260 °C

injection molding, Mold temperature, range: 60 - 100 °C

injection molding, Mold temperature, recommended: 80 °C

injection molding, Dwell time, thermoplastics: 10 min

### Chemical Media Resistance

#### Acids

- ✓ Acetic Acid (5% by mass) (23°C)