

## Ultradur® B 4300 G6

PBT-GF30

BASF

Injection molding grade with 30 % glass fibers. To produce technical parts, e.g. in the automotive or electrical industry. The product with the color designation LS BK15141 is optimized for automotive interior applications.

The products can also be offered as BMBcert™ and/or Ccycled™. Due to the Massbalance approach the product properties do not change.

Abbreviated designation according to ISO 1043: PBT-GF30

| Processing/Physical Characteristics | Value | Unit  | Test Standard |
|-------------------------------------|-------|-------|---------------|
| <b>ASTM Data</b>                    |       |       |               |
| Mold Shrinkage, MD                  | 0.003 | mm/mm | ASTM D 955    |
| Density, 73°F                       | 1530  | kg/m³ | ASTM D 792    |

| Rheological properties      | Value | Unit      | Test Standard   |
|-----------------------------|-------|-----------|-----------------|
| <b>ISO Data</b>             |       |           |                 |
| Melt volume-flow rate, MVR  | 11    | cm³/10min | ISO 1133        |
| Temperature                 | 250   | °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                         | 9800  | MPa   | ISO 527       |
| Stress at Break                         | 140   | MPa   | ISO 527       |
| Strain at Break                         | 3     | %     | ISO 527       |
| Tensile Creep Modulus, 1000h            | 7500  | MPa   | ISO 899-1     |
| Impact Strength (Charpy), +23°C         | 74    | kJ/m² | ISO 179/1eU   |
| Impact Strength (Charpy), -30°C         | 74    | kJ/m² | ISO 179/1eU   |
| Notched Impact Strength (Charpy), +23°C | 9     | kJ/m² | ISO 179/1eA   |
| Notched Impact Strength (Charpy), -30°C | 8.5   | kJ/m² | ISO 179/1eA   |
| <b>ASTM Data</b>                        |       |       |               |
| Tensile Modulus                         | 9653  | MPa   | ASTM D 638    |
| Tensile Strength at Break               | 135   | MPa   | ASTM D 638    |
| Elongation at Break                     | 2.5   | %     | ASTM D 638    |
| Flexural Modulus                        | 8067  | MPa   | ASTM D 790    |

| 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    |
| Coeff. of Linear Therm. Expansion, parallel | 25    | E-6/K | ISO 11359-1/-2 |
| Coeff. of Linear Therm. Expansion, normal   | 115   | E-6/K | ISO 11359-1/-2 |
| Burning Behav. at 1.5 mm Nom. Thickn.       | HB    | class | UL 94          |
| Thickness tested                            | 1.5   | mm    | -              |
| UL recognition                              | yes   | -     | -              |
| Burning Behav. at thickness h               | HB    | class | UL 94          |
| Thickness tested                            | 0.8   | mm    | -              |
| UL recognition                              | yes   | -     | -              |
| Oxygen index                                | 19.5  | %     | ISO 4589-1/-2  |
| <b>ASTM Data</b>                            |       |       |                |
| DTUL @ 66 psi                               | 220   | °C    | ASTM D 648     |
| DTUL @ 264 psi                              | 210   | °C    | ASTM D 648     |
| Melting Temperature                         | 223   | °C    | ASTM D 3418    |

| Electrical Properties        | Value | Unit | Test Standard |
|------------------------------|-------|------|---------------|
| <b>ISO Data</b>              |       |      |               |
| Relative permittivity, 100Hz | 4     | -    | IEC 62631-2-1 |
| Relative permittivity, 1MHz  | 3.8   | -    | IEC 62631-2-1 |
| Dissipation Factor, 100Hz    | 25    | E-4  | IEC 62631-2-1 |
| Dissipation Factor, 1MHz     | 170   | E-4  | IEC 62631-2-1 |
| Surface Resistivity          | 1E13  | Ohm  | IEC 62631-3-2 |

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|                            |     |       |             |
|----------------------------|-----|-------|-------------|
| Electric Strength          | 37  | kV/mm | IEC 60243-1 |
| Comparative tracking index | 375 | -     | 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             | 1530  | kg/m³ | ISO 1183       |

| Material Specific Properties | Value | Unit  | Test Standard       |
|------------------------------|-------|-------|---------------------|
| <b>ISO Data</b>              |       |       |                     |
| Viscosity number             | 105   | cm³/g | ISO 307, 1157, 1628 |

| Rheological calculation properties | Value | Unit     | Test Standard |
|------------------------------------|-------|----------|---------------|
| <b>ISO Data</b>                    |       |          |               |
| Density of melt                    | 1300  | kg/m³    | -             |
| Thermal Conductivity of Melt       | 0.22  | W/(m K)  | -             |
| Spec. heat capacity of melt        | 1770  | J/(kg K) | -             |
| Ejection temperature               | 180   | °C       | -             |

| Test specimen production              | Value | Unit | Test Standard |
|---------------------------------------|-------|------|---------------|
| <b>ISO Data</b>                       |       |      |               |
| Injection Molding, melt temperature   | 260   | °C   | ISO 294       |
| Injection Molding, mold temperature   | 80    | °C   | ISO 294       |
| Injection Molding, injection velocity | 200   | mm/s | ISO 294       |

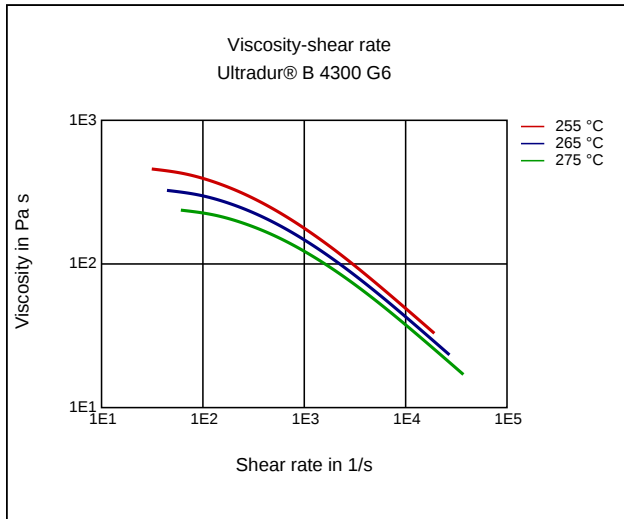
| Processing Recommendation Injection Molding | Value     | Unit | Test Standard |
|---------------------------------------------|-----------|------|---------------|
| Pre-drying - Temperature                    | 80 - 120  | °C   | -             |
| Pre-drying - Time                           | 4  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

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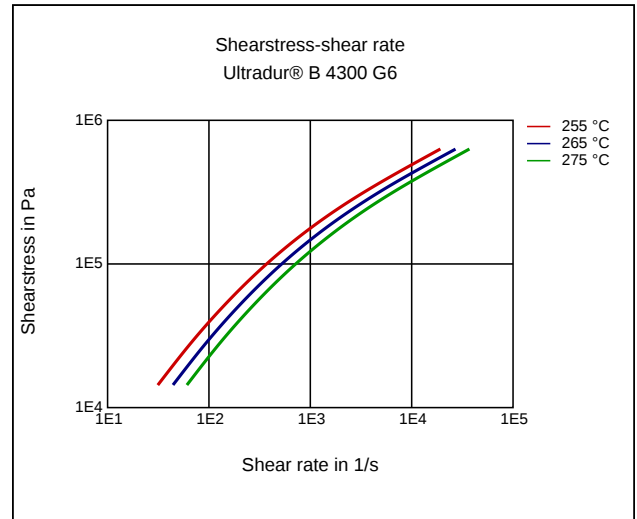
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**Diagrams**

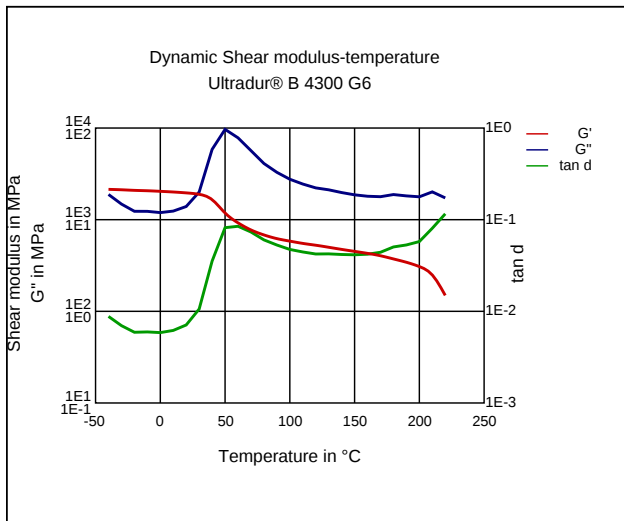
**Viscosity-shear rate**



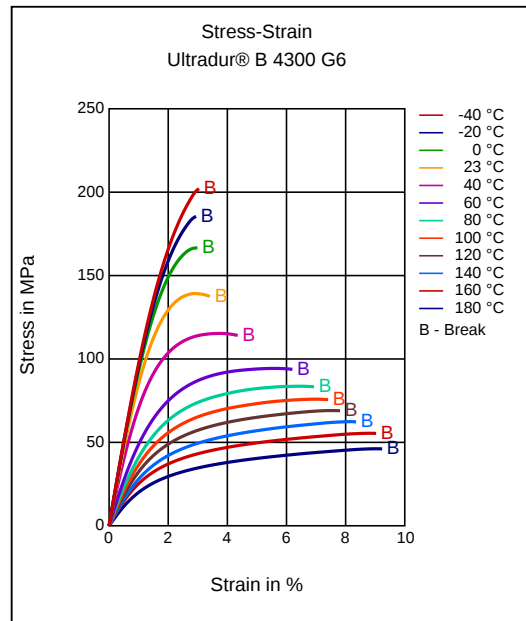
**Shearstress-shear rate**



**Dynamic Shear modulus-temperature**



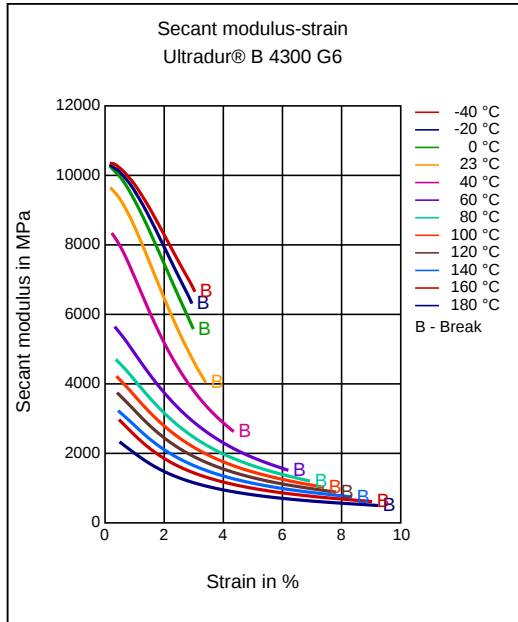
**Stress-strain**



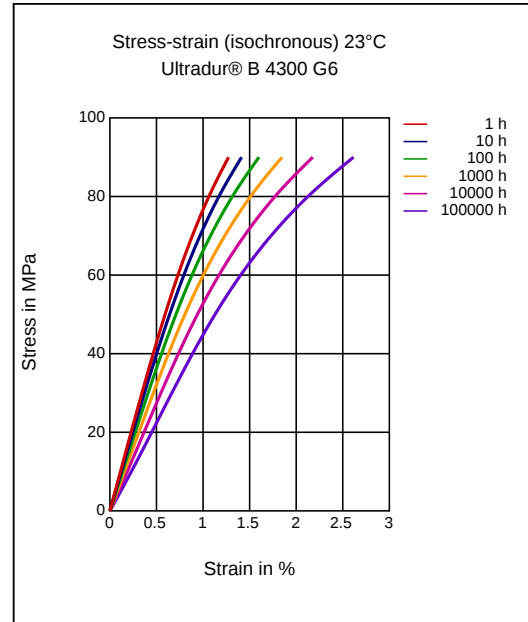
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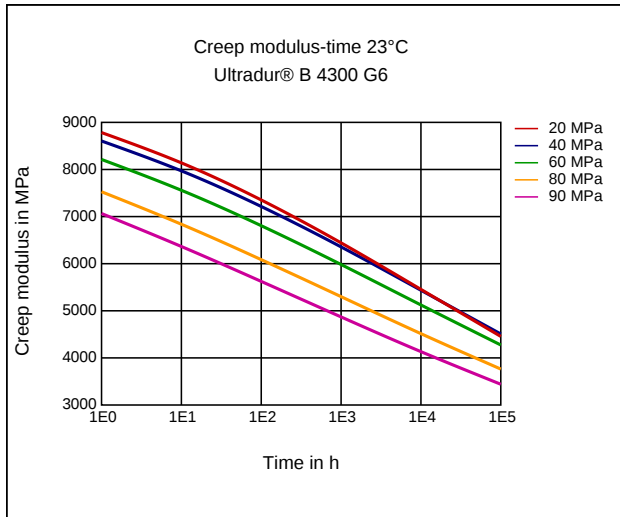
**Secant modulus-strain**



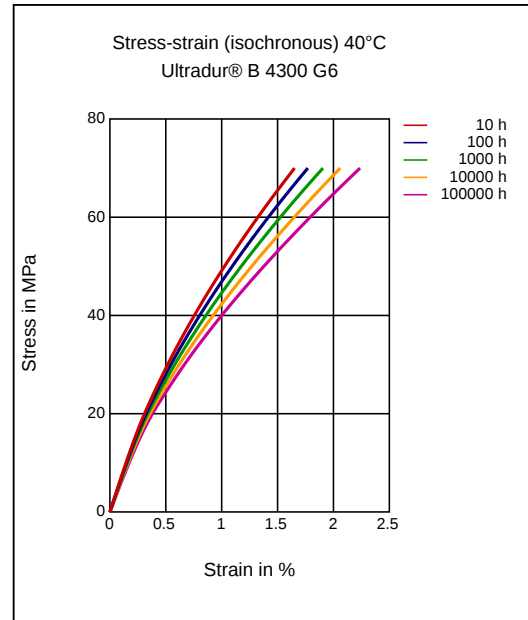
**Stress-strain (isochronous) 23°C**



**Creep modulus-time 23°C**



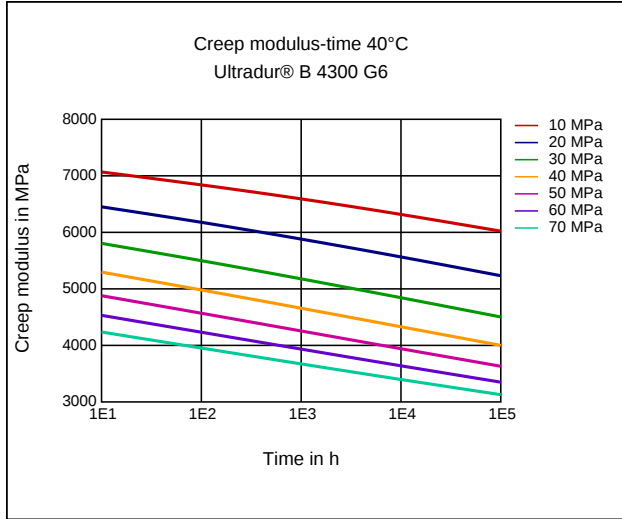
**Stress-strain (isochronous) 40°C**



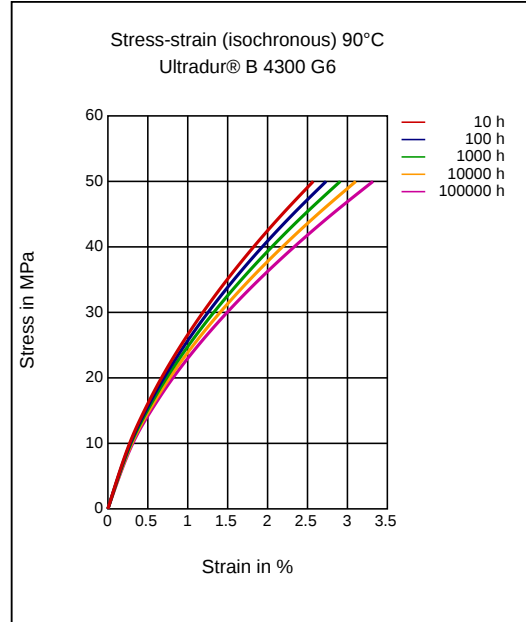
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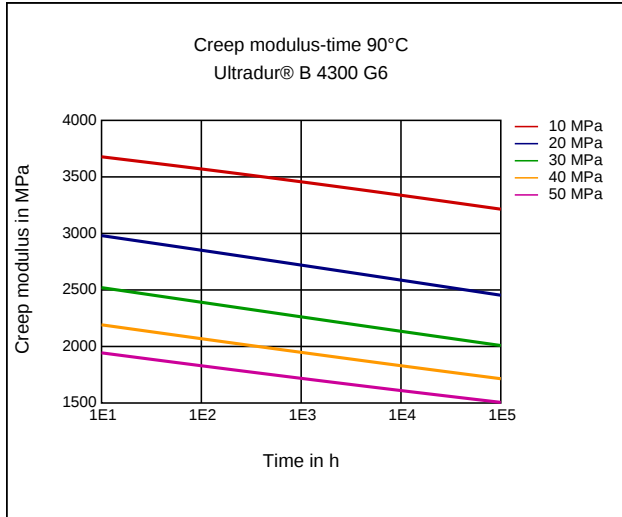
**Creep modulus-time 40°C**



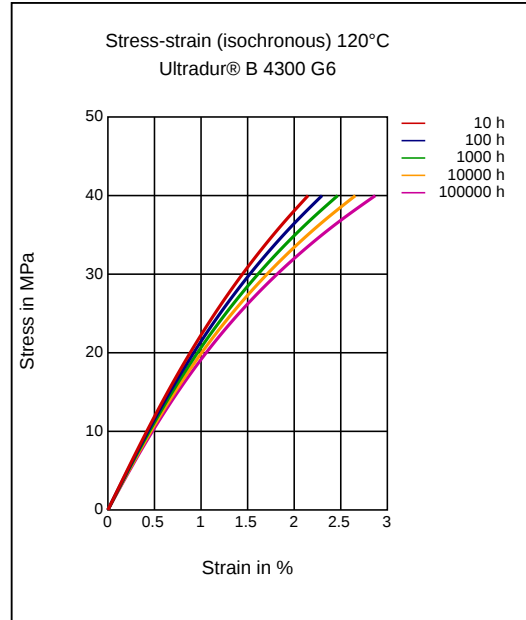
**Stress-strain (isochronous) 90°C**



**Creep modulus-time 90°C**



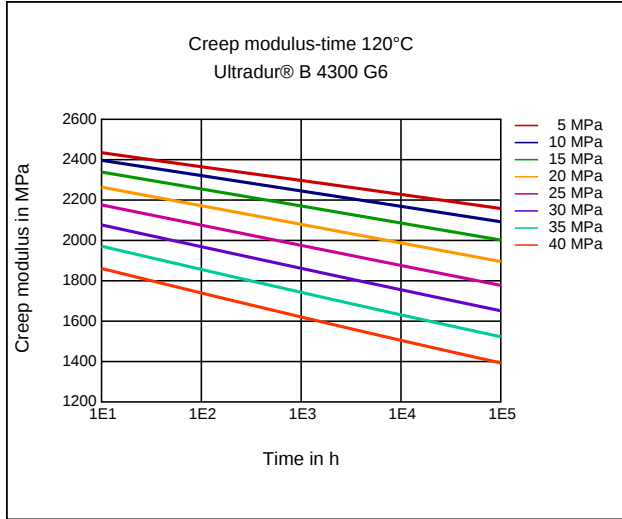
**Stress-strain (isochronous) 120°C**



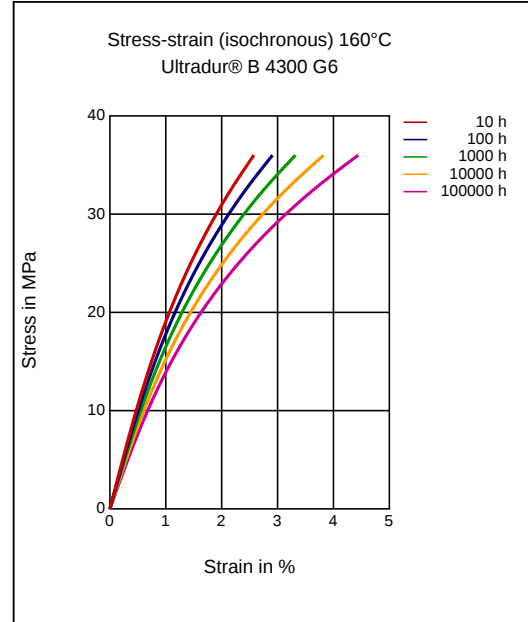
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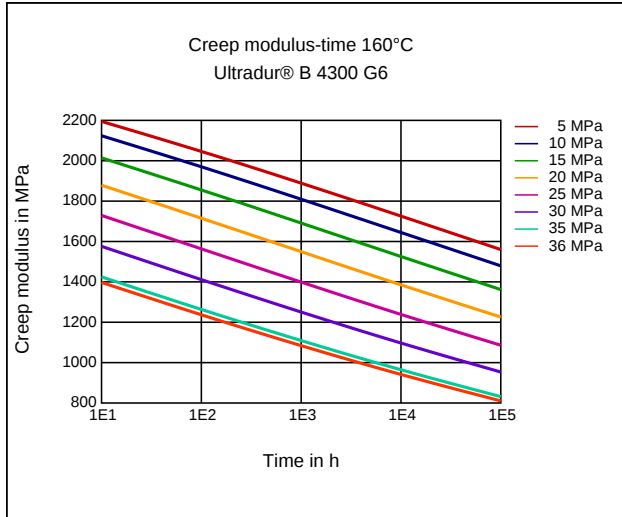
**Creep modulus-time 120 °C**



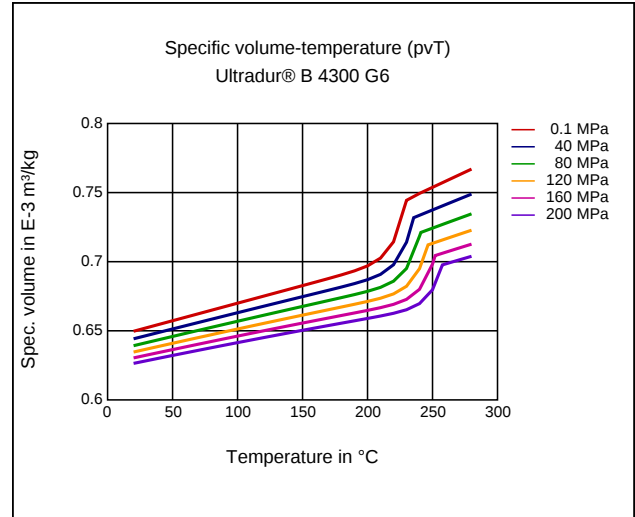
**Stress-strain (isochronous) 160 °C**



**Creep modulus-time 160 °C**



**Specific volume-temperature (pvT)**

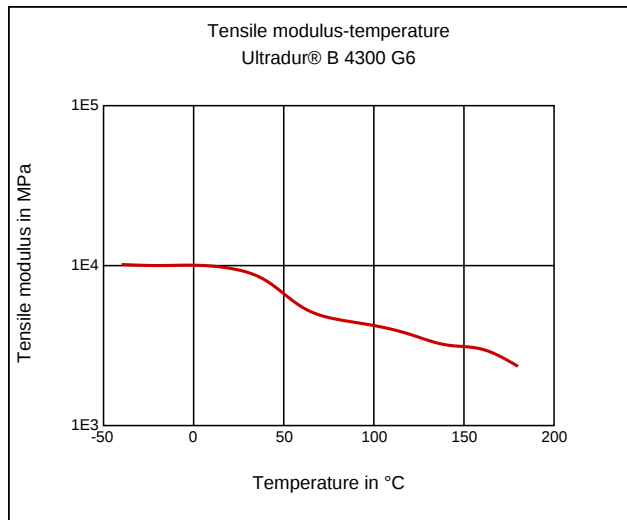


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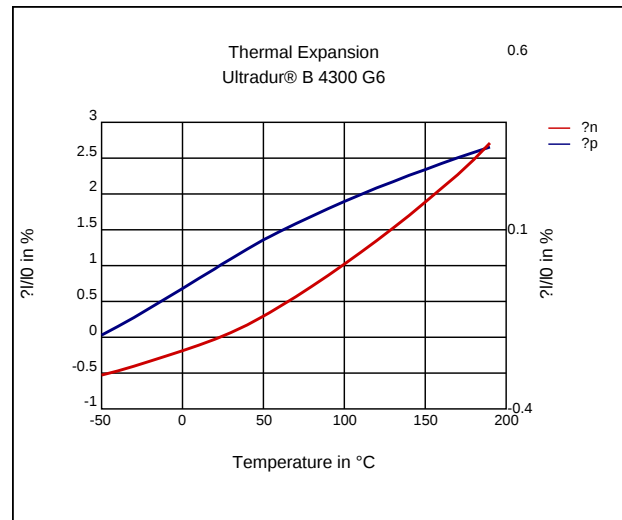
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#### Tensile Modulus-Temperature



#### Coeff. of linear thermal expansion, normal



#### Characteristics

##### Processing

Injection Molding

##### Delivery form

Pellets, Natural Color

##### Additives

Lubricants

##### Special Characteristics

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

##### 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

#### Chemical Media Resistance

##### Acids

- ✓ Acetic Acid (5% by mass) (23°C)