

## Ultramid® A3WG6 HRX BK23591

PA66-GF30

BASF

Glass fibre reinforced injection moulding grade with enhanced resistance to hydrolysis and heat ageing. I.e.: for applications in the automotive cooling circuit.

| Rheological properties      | dry / cond | Unit      | Test Standard   |
|-----------------------------|------------|-----------|-----------------|
| <b>ISO Data</b>             |            |           |                 |
| Melt volume-flow rate, MVR  | 10 / *     | cm³/10min | ISO 1133        |
| Temperature                 | 275 / *    | °C        | -               |
| Load                        | 5 / *      | kg        | -               |
| Molding shrinkage, parallel | 0.4 / *    | %         | ISO 294-4, 2577 |
| Molding shrinkage, normal   | 1.2 / *    | %         | ISO 294-4, 2577 |

| Mechanical Properties                   | dry / cond  | Unit  | Test Standard |
|-----------------------------------------|-------------|-------|---------------|
| <b>ISO Data</b>                         |             |       |               |
| Tensile Modulus                         | 9500 / 6000 | MPa   | ISO 527       |
| Stress at Break                         | 185 / 110   | MPa   | ISO 527       |
| Strain at Break                         | 3.7 / 7.2   | %     | ISO 527       |
| Tensile Creep Modulus, 1000h            | * / 4800    | MPa   | ISO 899-1     |
| Impact Strength (Charpy), +23°C         | 90 / 95     | kJ/m² | ISO 179/1eU   |
| Impact Strength (Charpy), -30°C         | 75 / 75     | kJ/m² | ISO 179/1eU   |
| Notched Impact Strength (Charpy), +23°C | 11 / 15     | kJ/m² | ISO 179/1eA   |
| Notched Impact Strength (Charpy), -30°C | 8 / -       | kJ/m² | ISO 179/1eA   |

| Thermal Properties                        | dry / cond | Unit | Test Standard  |
|-------------------------------------------|------------|------|----------------|
| <b>ISO Data</b>                           |            |      |                |
| Melting Temperature (10°C/min)            | 260 / *    | °C   | ISO 11357-1/-3 |
| Temp. of deflection under load (1.80 MPa) | 245 / *    | °C   | ISO 75-1/-2    |
| Temp. of deflection under load (0.45 MPa) | 260 / *    | °C   | ISO 75-1/-2    |

| Electrical Properties | dry / cond | Unit  | Test Standard |
|-----------------------|------------|-------|---------------|
| <b>ISO Data</b>       |            |       |               |
| Volume Resistivity    | 8.3E10 / - | Ohm*m | IEC 62631-3-1 |
| Surface Resistivity   | * / 8.4E12 | Ohm   | IEC 62631-3-2 |

| Other Properties    | dry / cond | Unit  | Test Standard  |
|---------------------|------------|-------|----------------|
| <b>ISO Data</b>     |            |       |                |
| Water Absorption    | 5.95 / *   | %     | Sim. to ISO 62 |
| Humidity absorption | 1.7 / *    | %     | Sim. to ISO 62 |
| Density             | 1370 / -   | kg/m³ | ISO 1183       |

| Material Specific Properties | dry / cond | Unit  | Test Standard       |
|------------------------------|------------|-------|---------------------|
| <b>ISO Data</b>              |            |       |                     |
| Viscosity number             | 160 / *    | cm³/g | ISO 307, 1157, 1628 |

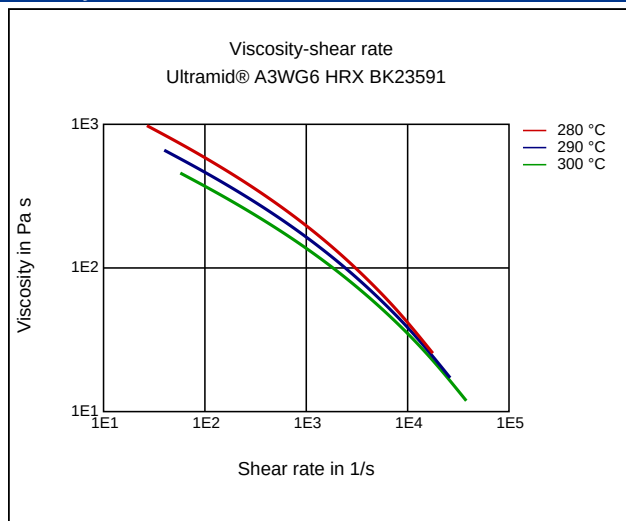
| Processing Recommendation Injection Molding | Value     | Unit | Test Standard |
|---------------------------------------------|-----------|------|---------------|
| Pre-drying - Temperature                    | 80        | °C   | -             |
| Pre-drying - Time                           | 4         | h    | -             |
| Processing humidity                         | ≤0.15     | %    | -             |
| Melt temperature                            | 280 - 300 | °C   | -             |
| Mold temperature                            | 80 - 90   | °C   | -             |

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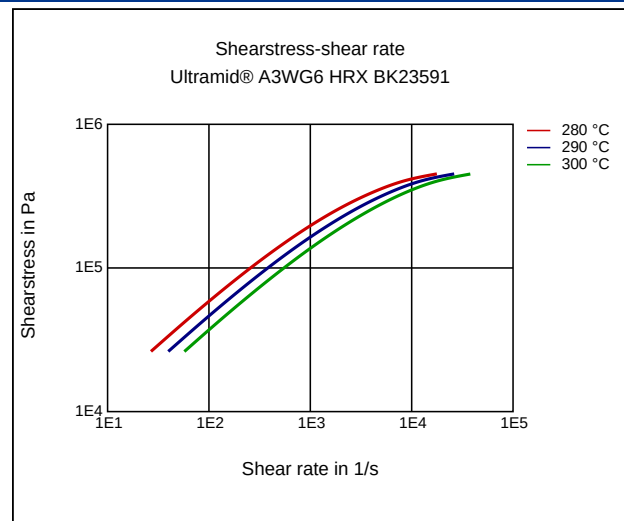
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Diagrams

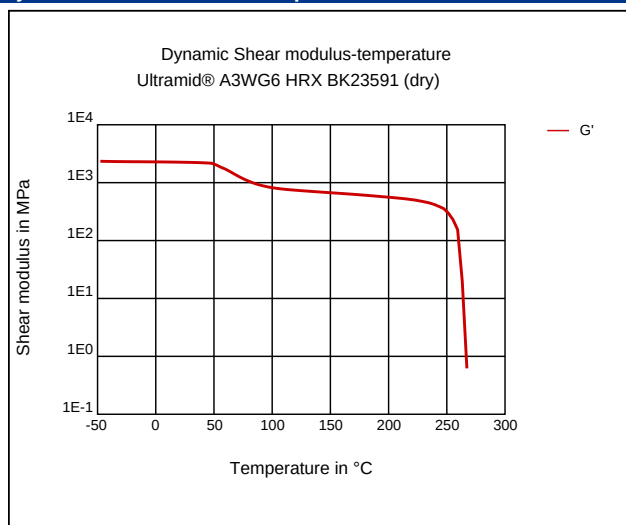
Viscosity-shear rate



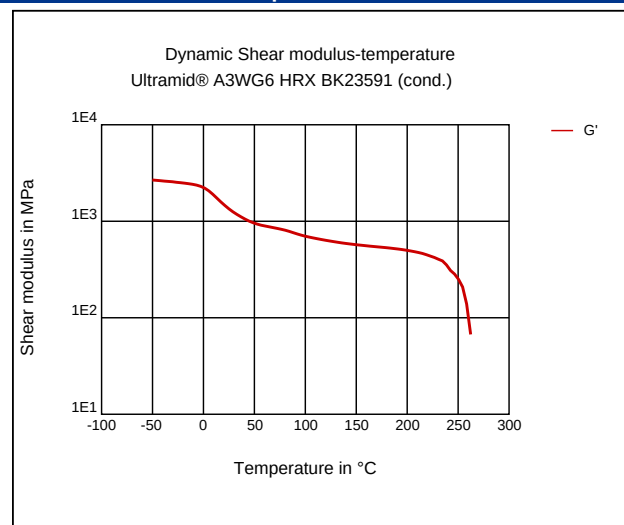
Shearstress-shear rate



Dynamic Shear modulus-temperature



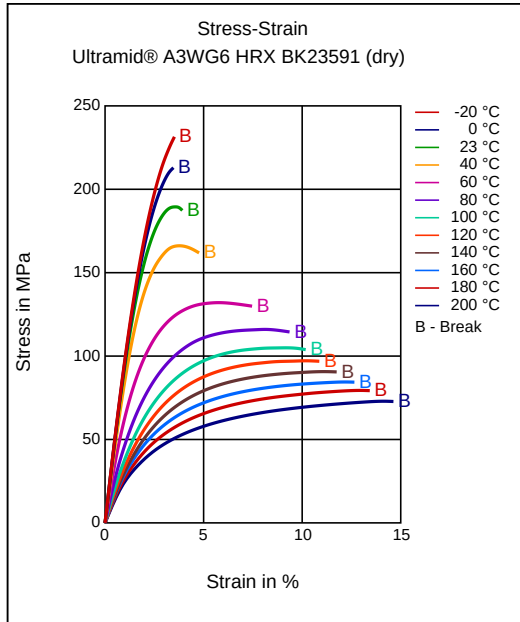
Dynamic Shear modulus-temperature



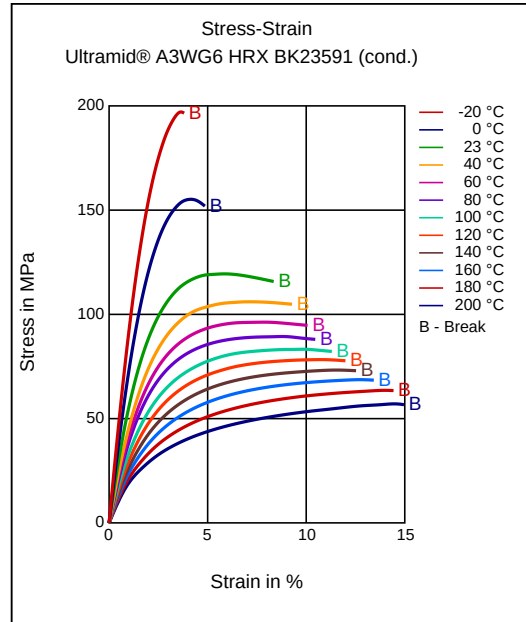
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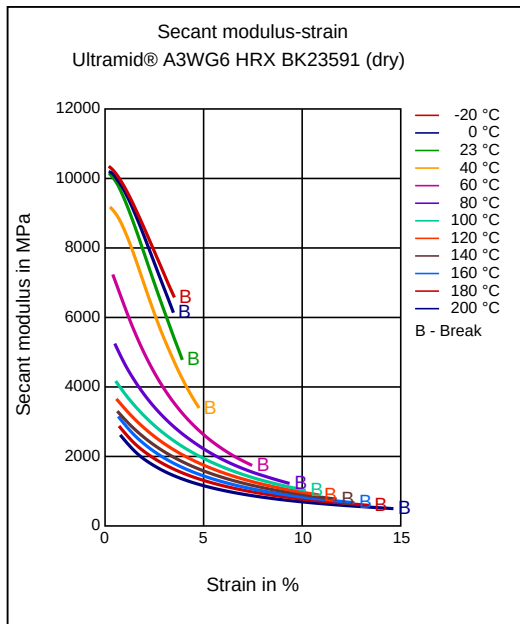
**Stress-strain**



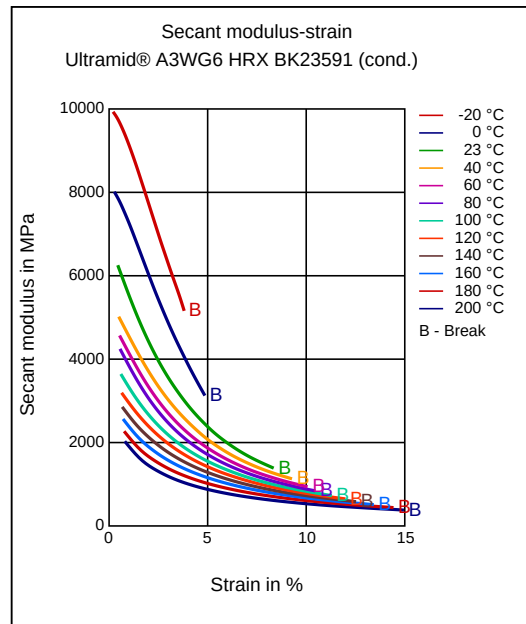
**Stress-strain**



**Secant modulus-strain**



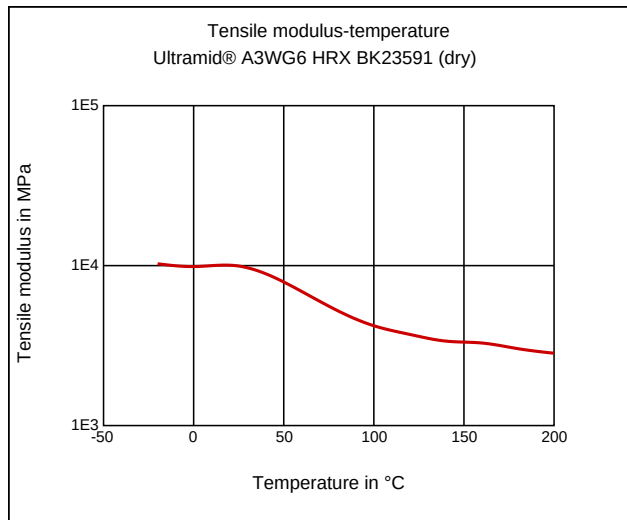
**Secant modulus-strain**



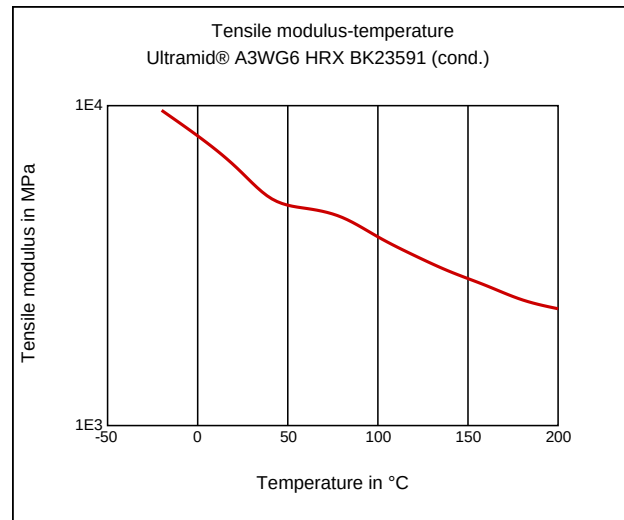
## Ultramid® A3WG6 HRX BK23591 PA66-GF30

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### Tensile Modulus-Temperature



### Tensile Modulus-Temperature



### Characteristics

#### Processing

Injection Molding

#### Delivery form

Pellets, Black

#### Special Characteristics

Heat aging stabilized

#### Chemical Resistance

Hydrolysis

#### Applications

Automotive

### Injection Molding

#### PREPROCESSING

Pre/Post-processing, max. allowed water content: .15 %

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

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

#### PROCESSING

injection molding, Melt temperature, range: 280 - 300 °C

injection molding, Melt temperature, recommended: 290 °C

injection molding, Mold temperature, range: 80 - 90 °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)