

CAMPUS® Datasheet

Ultramid® A3WG7 HRX bk 23591 - PA66-GF35
BASF



Product Texts

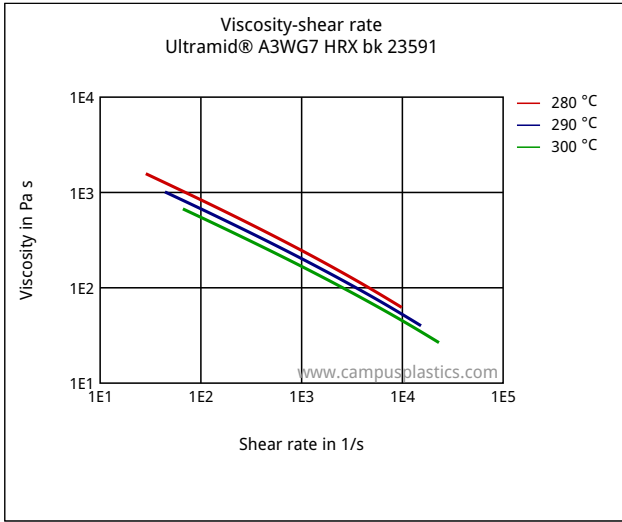
Glass fibre reinforced injection moulding grade with enhanced resistance to hydrolysis and heat ageing. I.e.: for applications in the automotive cooling circuit.

Rheological properties	dry / cond	Unit	Test Standard
Melt volume-flow rate, MVR	10 / *	cm ³ /10min	ISO 1133
Temperature	275 / *	°C	ISO 1133
Load	5 / *	kg	ISO 1133
Molding shrinkage, parallel	0.4 / *	%	ISO 294-4, 2577
Molding shrinkage, normal	1.1 / *	%	ISO 294-4, 2577
Mechanical properties	dry / cond	Unit	Test Standard
Tensile modulus	11000 / 7300	MPa	ISO 527-1/-2
Stress at break	205 / 130	MPa	ISO 527-1/-2
Strain at break	3.4 / 5.7	%	ISO 527-1/-2
Tensile creep modulus, 1000h	* / 4100	MPa	ISO 899-1
Charpy impact strength, +23°C	100 / 105	kJ/m ²	ISO 179/1eU
Charpy impact strength, -30°C	85 / 95	kJ/m ²	ISO 179/1eU
Charpy notched impact strength, +23°C	12 / 17	kJ/m ²	ISO 179/1eA
Charpy notched impact strength, -30°C	9.5 / 10	kJ/m ²	ISO 179/1eA
Thermal properties	dry / cond	Unit	Test Standard
Melting temperature, 10°C/min	260 / *	°C	ISO 11357-1/-3
Temp. of deflection under load, 1.80 MPa	250 / *	°C	ISO 75-1/-2
Temp. of deflection under load, 0.45 MPa	260 / *	°C	ISO 75-1/-2
Coeff. of linear therm. expansion, parallel	23 / *	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, normal	96 / *	E-6/K	ISO 11359-1/-2
Electrical properties	dry / cond	Unit	Test Standard
Relative permittivity, 1MHz	3.9 / 4.7	-	IEC 62631-2-1
Dissipation factor, 1MHz	180 / 910	E-4	IEC 62631-2-1
Volume resistivity	2.1E12 / 2.4E8	Ohm*m	IEC 62631-3-1
Surface resistivity	* / 5.8E12	Ohm	IEC 62631-3-2
Comparative tracking index	- / 350	-	IEC 60112
Other properties	dry / cond	Unit	Test Standard
Water absorption	5.35 / *	%	Sim. to ISO 62
Humidity absorption	1.6 / *	%	Sim. to ISO 62
Density	1420 / -	kg/m ³	ISO 1183
Material specific properties	dry / cond	Unit	Test Standard
Viscosity number	155 / *	cm ³ /g	ISO 307, 1157, 1628
Test specimen production	Value	Unit	Test Standard
Injection molding, melt temperature	290	°C	ISO 294
Injection molding, mold temperature	80	°C	ISO 294
Injection molding, injection velocity	200	mm/s	ISO 294

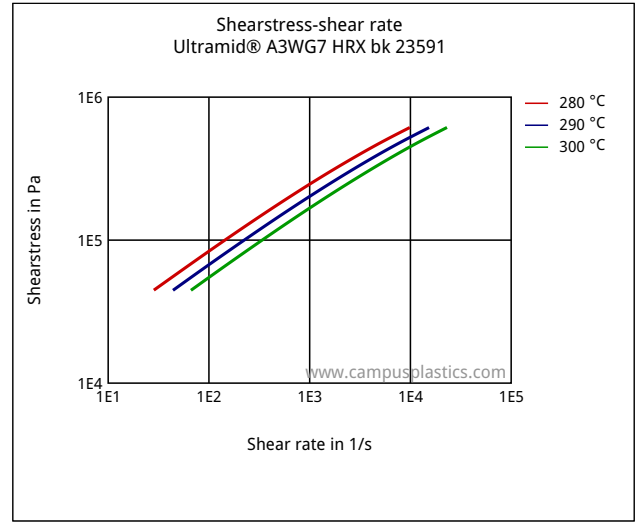
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Diagrams

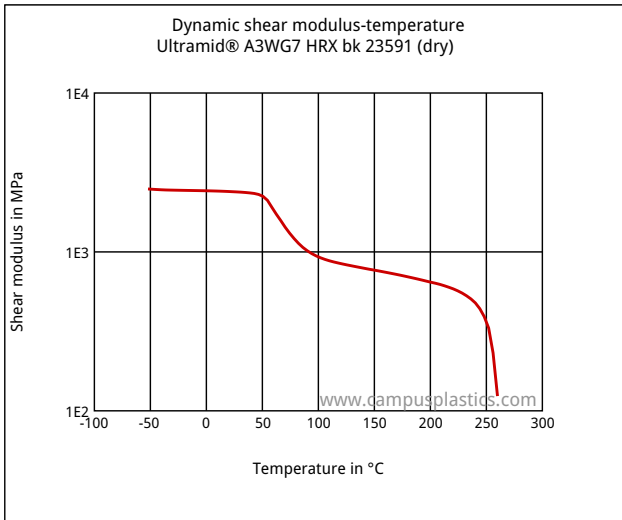
Viscosity-shear rate



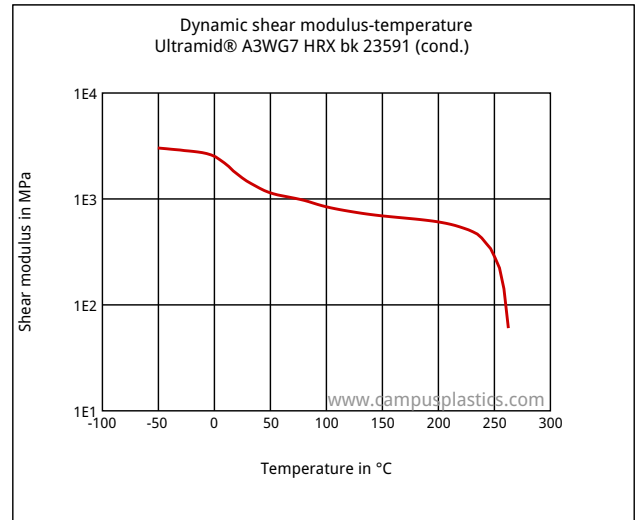
Shearstress-shear rate



Dynamic shear modulus-temperature

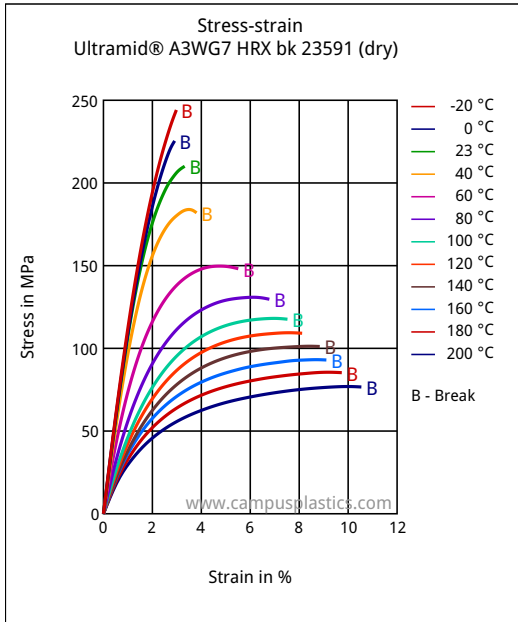


Dynamic shear modulus-temperature

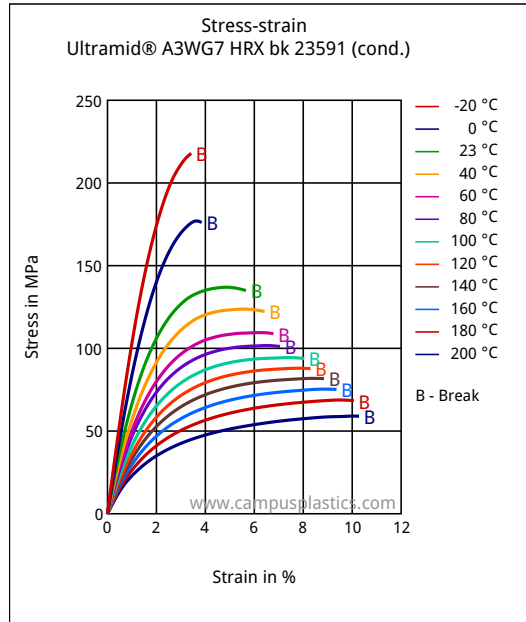


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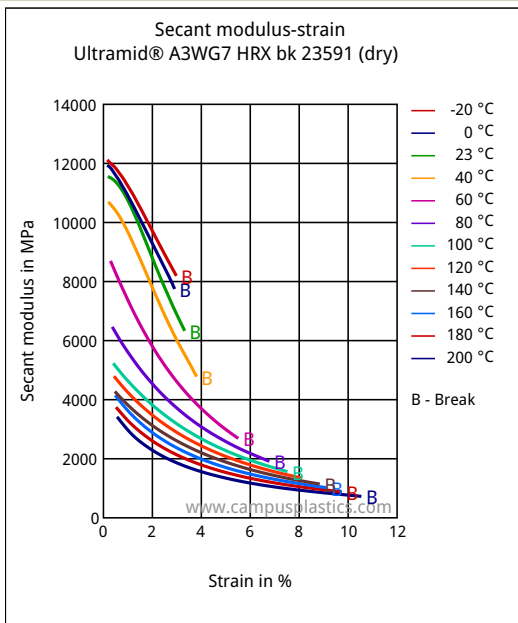
Stress-strain



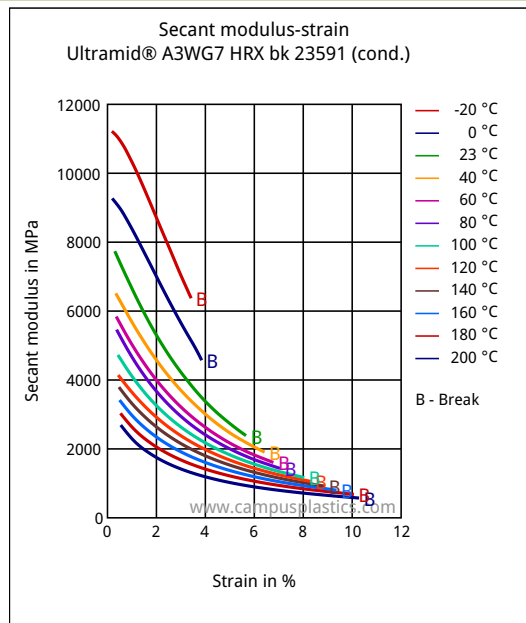
Stress-strain



Secant modulus-strain

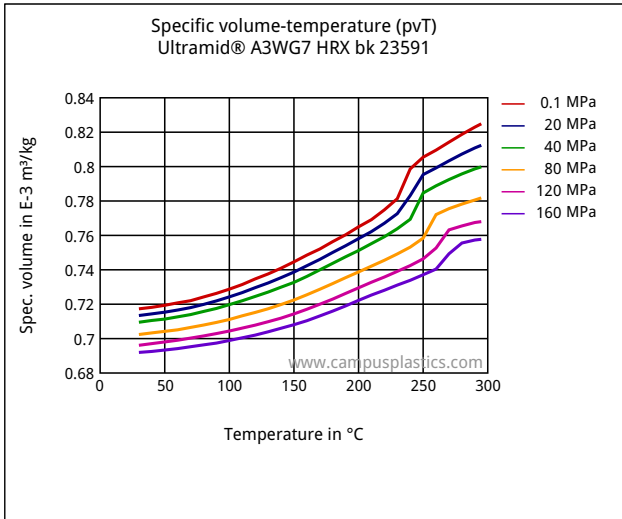


Secant modulus-strain

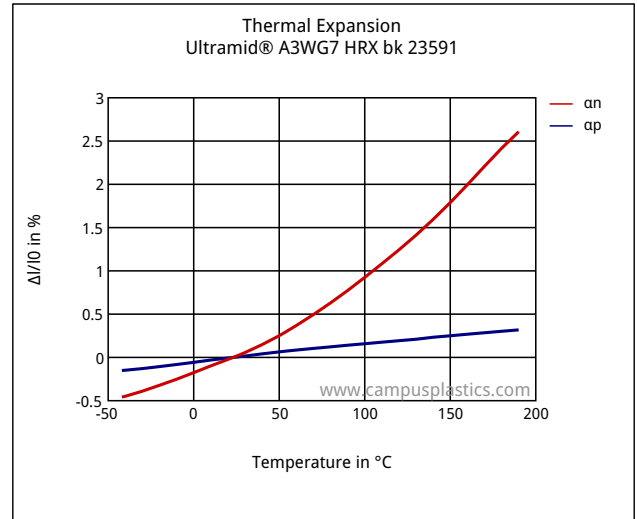


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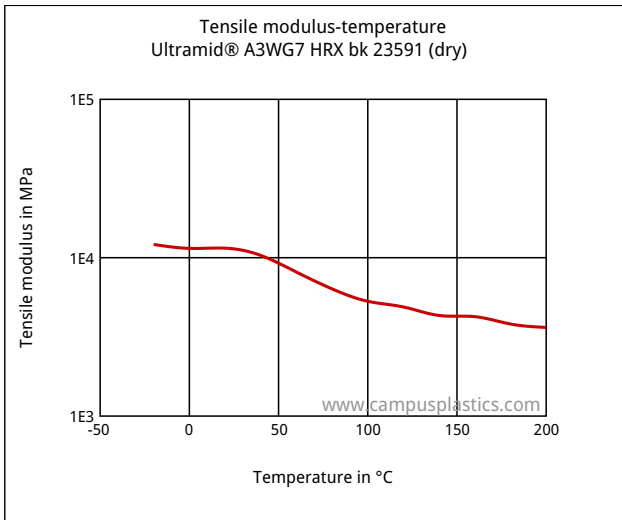
Specific volume-temperature (pvT)



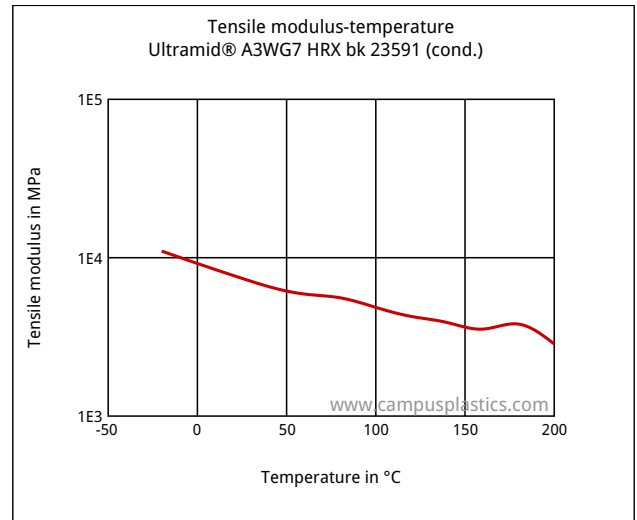
Thermal expansion



Tensile modulus-temperature



Tensile modulus-temperature



Characteristics

Processing

Injection Molding

Delivery form

Pellets

Other text information

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 - 310 °C

Special Characteristics

Heat stabilized or stable to heat

Regional Availability

Europe

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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)
- ☺ Citric Acid solution (10% by mass) (23°C)
- ☺ Lactic Acid (10% by mass) (23°C)
- ☹ Hydrochloric Acid (36% by mass) (23°C)
- ☹ Nitric Acid (40% by mass) (23°C)
- ☹ Sulfuric Acid (38% by mass) (23°C)
- ☹ Sulfuric Acid (5% by mass) (23°C)
- ☹ Chromic Acid solution (40% by mass) (23°C)

Bases

- ☹ Sodium Hydroxide solution (35% by mass) (23°C)
- ☺ Sodium Hydroxide solution (1% by mass) (23°C)

Alcohols

- ☺ Isopropyl alcohol (23°C)
- ☺ Methanol (23°C)
- ☺ Ethanol (23°C)

Hydrocarbons

- ☺ n-Hexane (23°C)
- ☺ Toluene (23°C)
- ☺ iso-Octane (23°C)

Ketones

- ☺ Acetone (23°C)

Ethers

- ☺ Diethyl ether (23°C)

Mineral oils

- ☺ SAE 10W40 multigrade motor oil (23°C)
- ☺ SAE 10W40 multigrade motor oil (130°C)

Standard Fuels

- ☺ Diesel fuel (pref. ISO 1817 Liquid F) (23°C)
- ☹ Diesel fuel (pref. ISO 1817 Liquid F) (>90°C)




Salt solutions

- ☺ Sodium Chloride solution (10% by mass) (23°C)
- ☹ Sodium Hypochlorite solution (10% by mass) (23°C)
- ☹ Zinc Chloride solution (50% by mass) (23°C)

Other

- ☺ Ethyl Acetate (23°C)
- ☹ Hydrogen peroxide (23°C)

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-  DOT No. 4 Brake fluid (130°C)
-  Ethylene Glycol (50% by mass) in water (108°C)
-  Water (23°C)

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