

Ultramid® A3WG10
PA66-GF50

BASF

Glass fibre reinforced and heat aging resistance injection moulding grade for industrial articles having very high rigidity.

Rheological properties	dry / cond	Unit	Test Standard
ISO Data			
Melt volume-flow rate, MVR	10 / *	cm³/10min	ISO 1133
Temperature	275 / *	°C	-
Load	5 / *	kg	-
Molding shrinkage, parallel	0.3 / *	%	ISO 294-4, 2577
Molding shrinkage, normal	0.9 / *	%	ISO 294-4, 2577

Mechanical Properties	dry / cond	Unit	Test Standard
ISO Data			
Tensile Modulus	16800 / 12500	MPa	ISO 527
Stress at Break	240 / 180	MPa	ISO 527
Strain at Break	2.5 / 3.5	%	ISO 527
Tensile Creep Modulus, 1h	* / 9800	MPa	ISO 899-1
Tensile Creep Modulus, 1000h	* / 7800	MPa	ISO 899-1
Impact Strength (Charpy), +23°C	95 / 100	kJ/m²	ISO 179/1eU
Impact Strength (Charpy), -30°C	90 / 103	kJ/m²	ISO 179/1eU
Notched Impact Strength (Charpy), +23°C	18 / 25	kJ/m²	ISO 179/1eA
Notched Impact Strength (Charpy), -30°C	13 / 12.6	kJ/m²	ISO 179/1eA

Thermal Properties	dry / cond	Unit	Test Standard
ISO Data			
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)	250 / *	°C	ISO 75-1/-2
Vicat softening temperature, 50°C/h 50N	250 / *	°C	ISO 306
Coeff. of Linear Therm. Expansion, parallel	16 / *	E-6/K	ISO 11359-1/-2
Coeff. of Linear Therm. Expansion, normal	80 / *	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	24 / *	%	ISO 4589-1/-2

Electrical Properties	dry / cond	Unit	Test Standard
ISO Data			
Relative permittivity, 1MHz	3.8 / 6.6	-	IEC 62631-2-1
Dissipation Factor, 100Hz	150 / 1700	E-4	IEC 62631-2-1
Dissipation Factor, 1MHz	150 / 3000	E-4	IEC 62631-2-1
Volume Resistivity	1E13 / 1E10	Ohm*m	IEC 62631-3-1
Surface Resistivity	* / 1E10	Ohm	IEC 62631-3-2
Electric Strength	40 / 34	kV/mm	IEC 60243-1
Comparative tracking index	- / 550	-	IEC 60112

Other Properties	dry / cond	Unit	Test Standard
ISO Data			
Water Absorption	4 / *	%	Sim. to ISO 62
Humidity absorption	1.2 / *	%	Sim. to ISO 62
Density	1560 / -	kg/m³	ISO 1183

Material Specific Properties	dry / cond	Unit	Test Standard
ISO Data			
Viscosity number	130 / *	cm³/g	ISO 307, 1157, 1628

Rheological calculation properties	Value	Unit	Test Standard
ISO Data			
Density of melt	1340	kg/m³	-

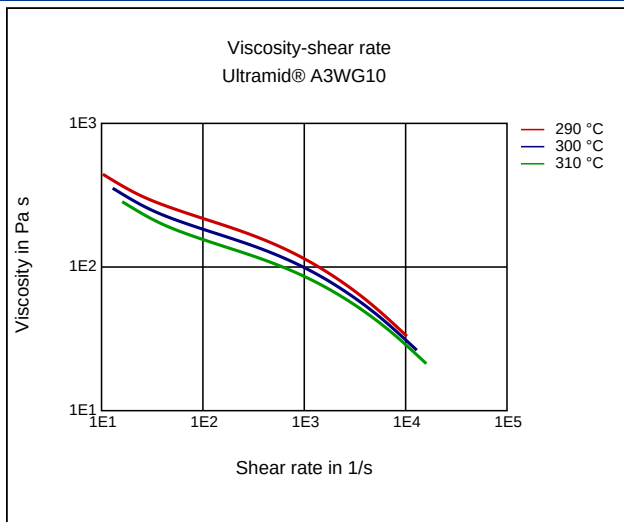
Ejection temperature	200	°C	-
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Test specimen production	Value	Unit	Test Standard
ISO Data			
Injection Molding, melt temperature	300	°C	ISO 294
Injection Molding, mold temperature	80	°C	ISO 294
Injection Molding, injection velocity	200	mm/s	ISO 294

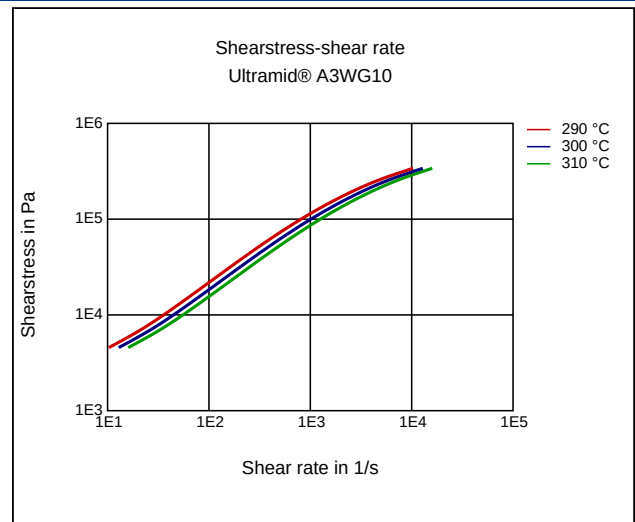
Processing Recommendation Injection Molding	Value	Unit	Test Standard
Pre-drying - Temperature	80	°C	-
Pre-drying - Time	4	h	-
Processing humidity	≤0.15	%	-
Melt temperature	290 - 310	°C	-
Mold temperature	80 - 90	°C	-

Diagrams

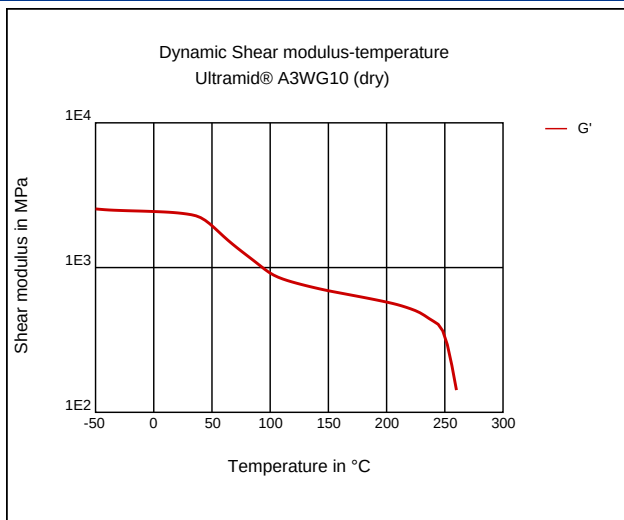
Viscosity-shear rate



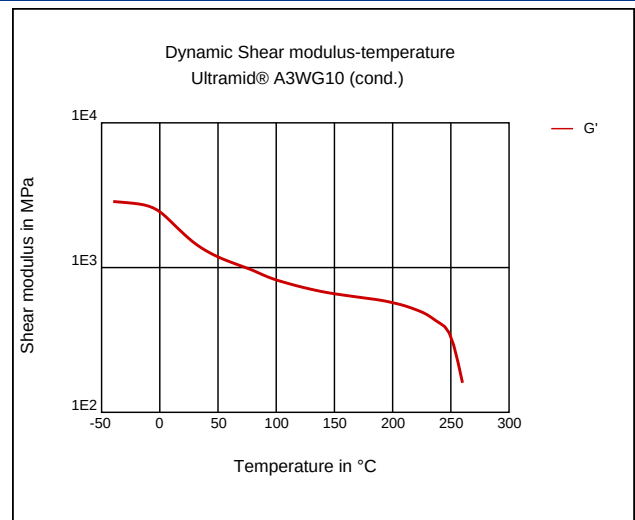
Shearstress-shear rate



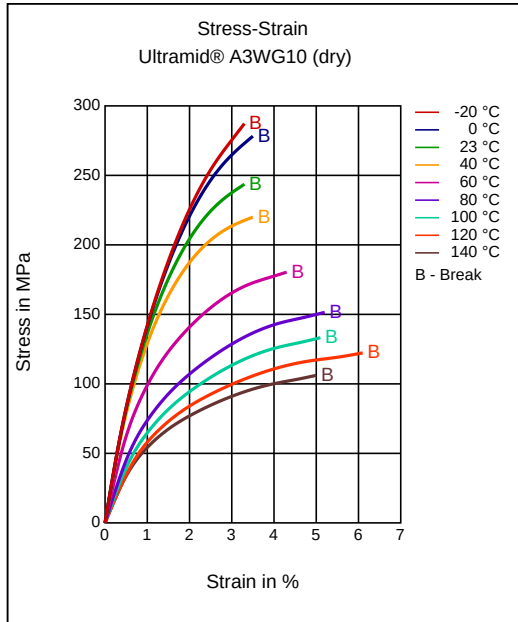
Dynamic Shear modulus-temperature



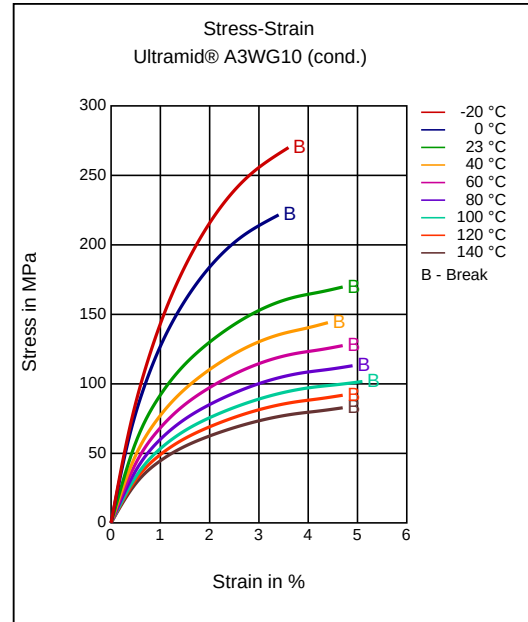
Dynamic Shear modulus-temperature



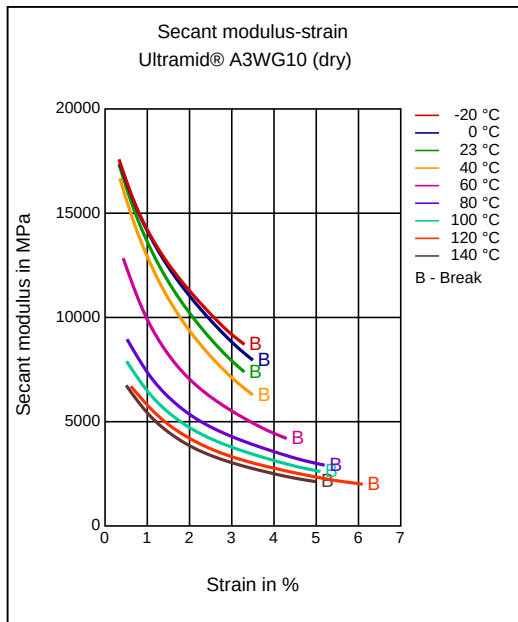
Stress-strain



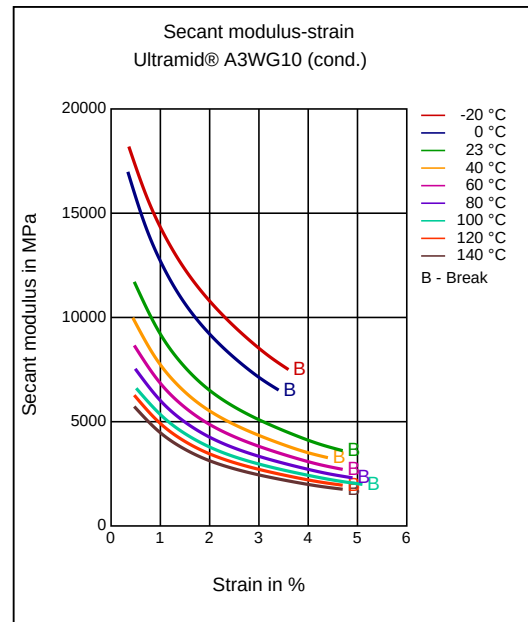
Stress-strain



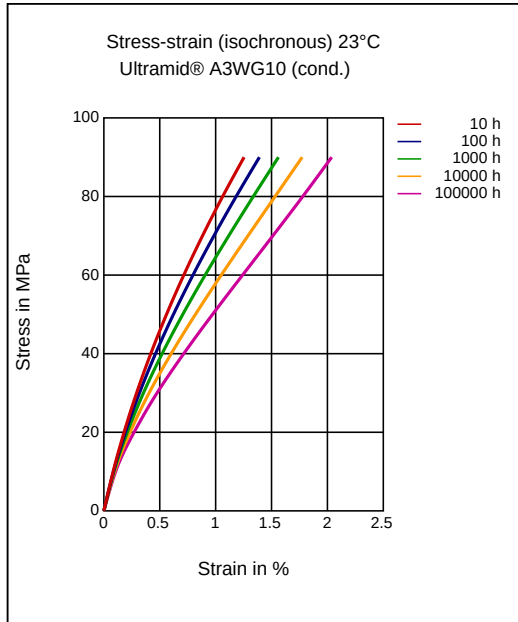
Secant modulus-strain



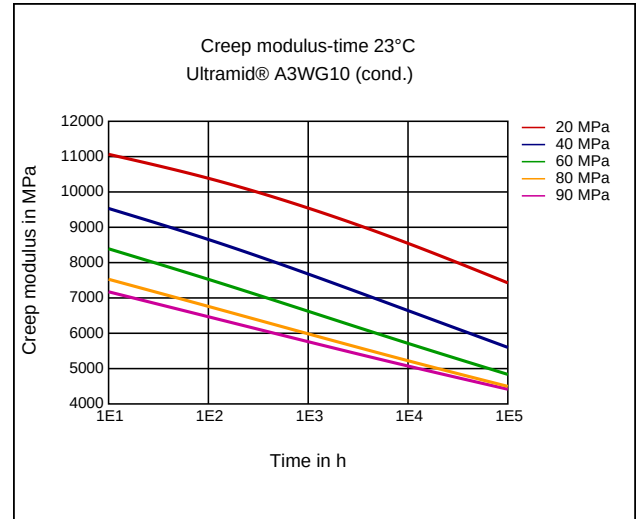
Secant modulus-strain



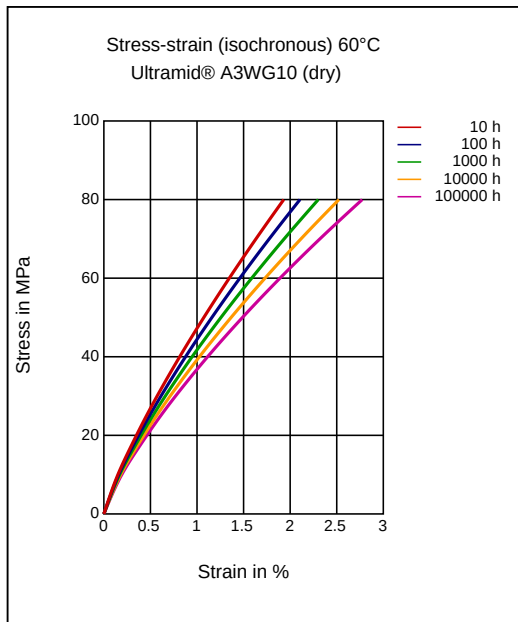
Stress-strain (isochronous) 23°C



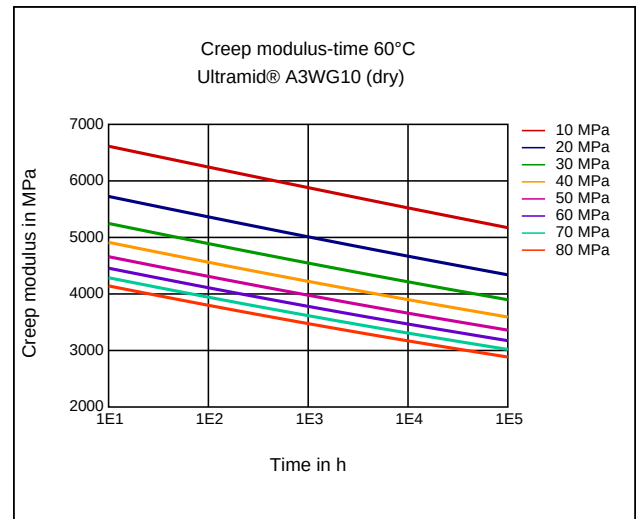
Creep modulus-time 23°C



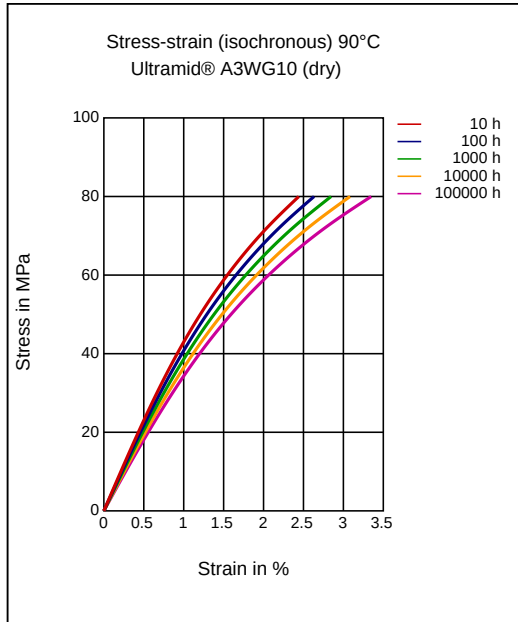
Stress-strain (isochronous) 60°C



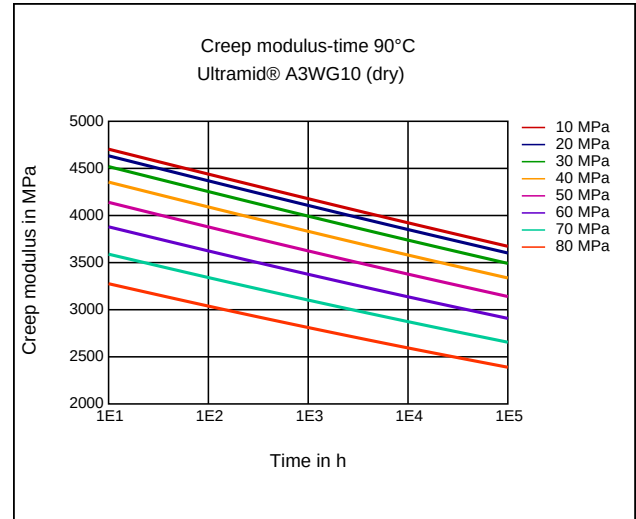
Creep modulus-time 60°C



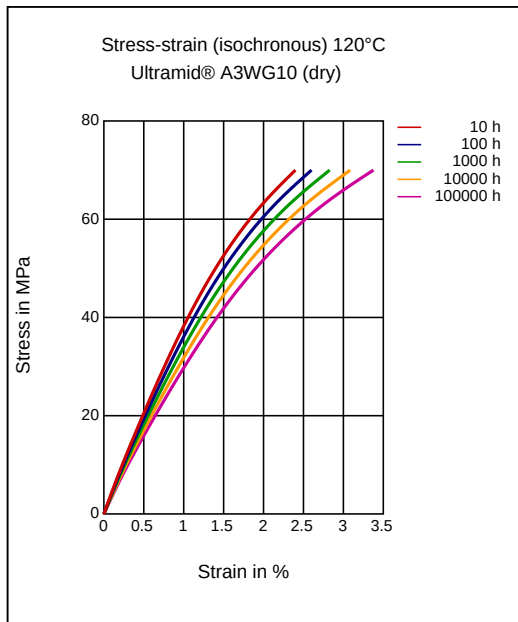
Stress-strain (isochronous) 90 °C



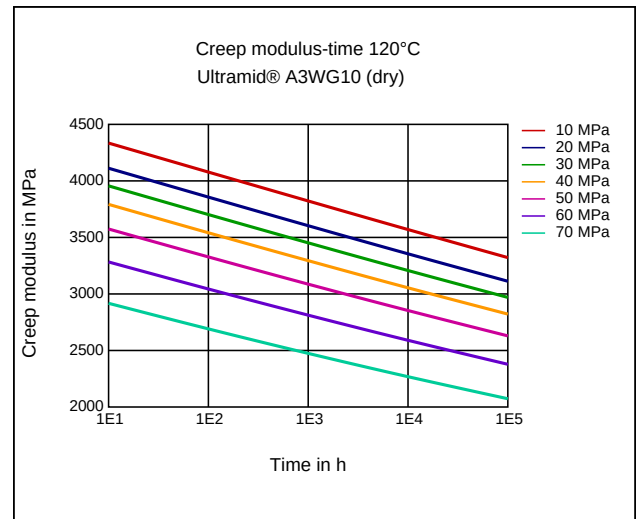
Creep modulus-time 90 °C



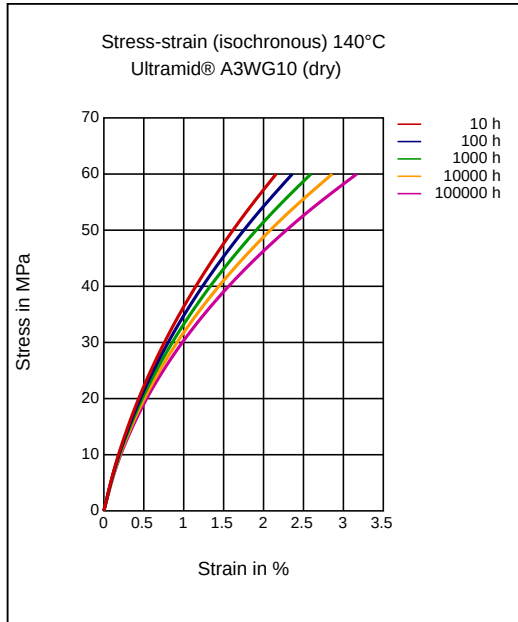
Stress-strain (isochronous) 120 °C



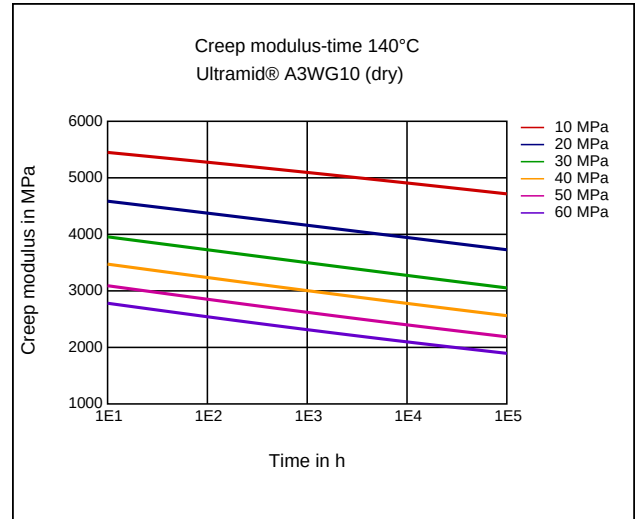
Creep modulus-time 120 °C



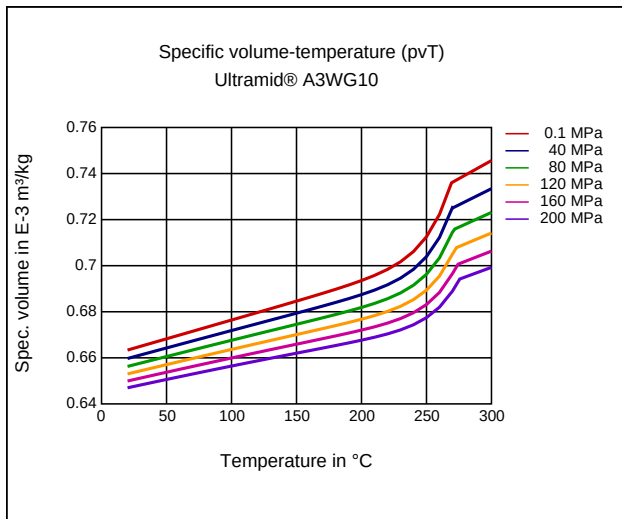
Stress-strain (isochronous) 140°C



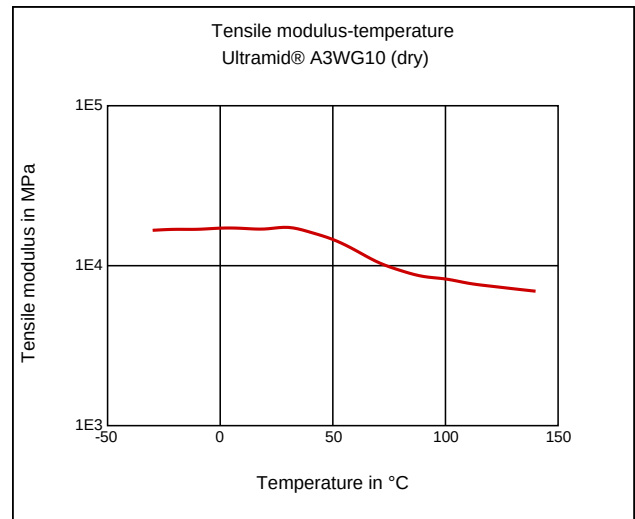
Creep modulus-time 140°C



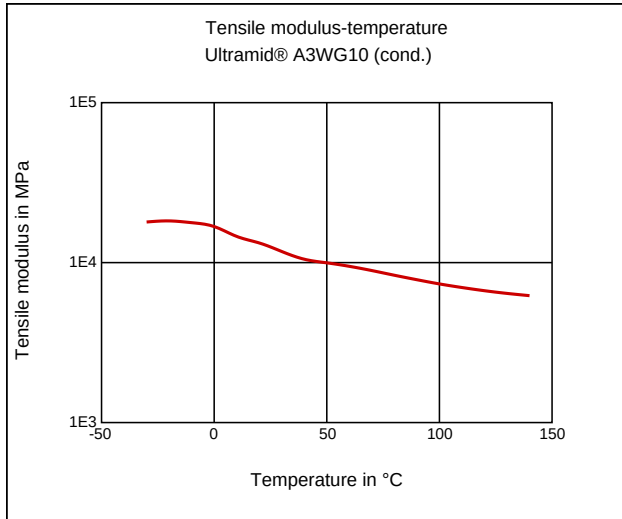
Specific volume-temperature (pvT)



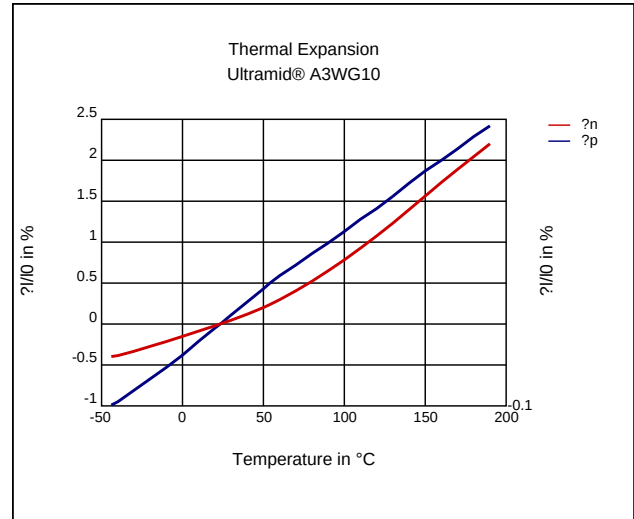
Tensile Modulus-Temperature



Tensile Modulus-Temperature



Coeff. of linear thermal expansion, normal



Characteristics

Processing

Injection Molding

Delivery form

Pellets

Additives

Lubricants, Release agent

Special Characteristics

Heat aging stabilized

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: 290 - 310 °C

injection molding, Melt temperature, recommended: 300 °C

injection molding, Mold temperature, range: 80 - 100 °C

injection molding, Mold temperature, recommended: 100 °C

injection molding, Dwell time, thermoplastics: 10 min

Chemical Media Resistance

Acids

✓ Acetic Acid (5% by mass) (23°C)

Disclaimer

Liability Exclusion

These guide values are measured and provided by the product manufacturer and have been determined on standardised test specimens and can be affected by pigmentation, mould design and processing conditions. M-Base has taken the guide values from the producer's original Technical Data Sheet. **ALBIS AND M-BASE ARE THEREFORE NOT RESPONSIBLE FOR THE ACCURACY OF THE GUIDE VALUES AND CANNOT GIVE ANY WARRANTY WITH REGARD TO THEIR CORRECTNESS.**

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