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BASF
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ALBIS

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	-

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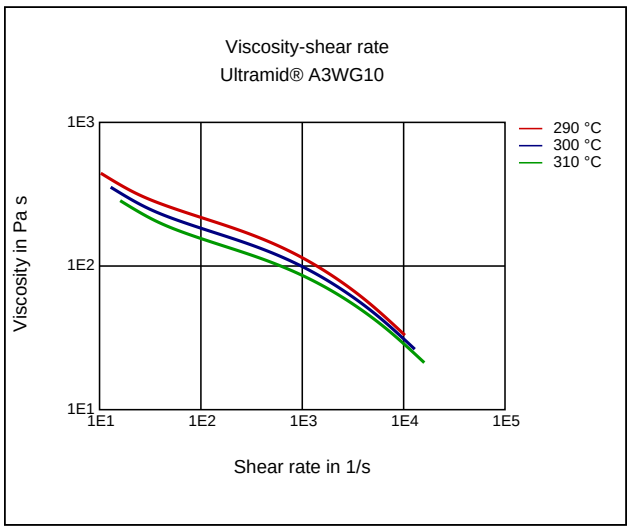
Ejection temperature	200	°C	-

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

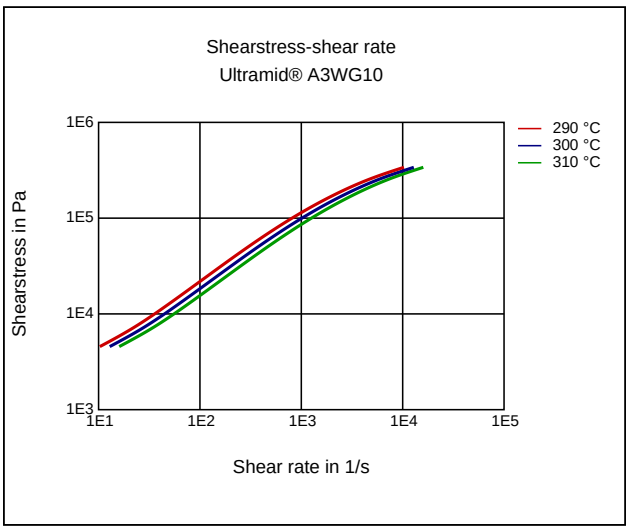
Processing Recommendation Injection Molding	Value	Unit	Test Standard
Pre-drying - Temperature	80	°C	-
Pre-drying - Time	4	h	-
Processing humidity	≤0.15	%	-
Melt temperature	290 - 310	°C	-
Mold temperature	80 - 90	°C	-

Diagrams

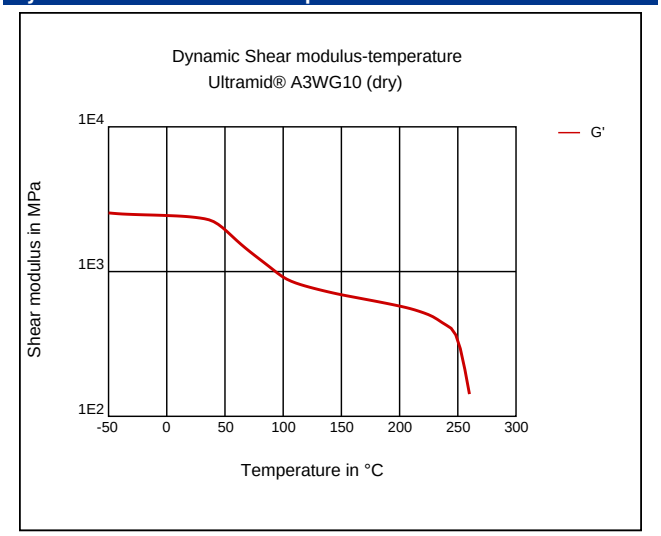
Viscosity-shear rate



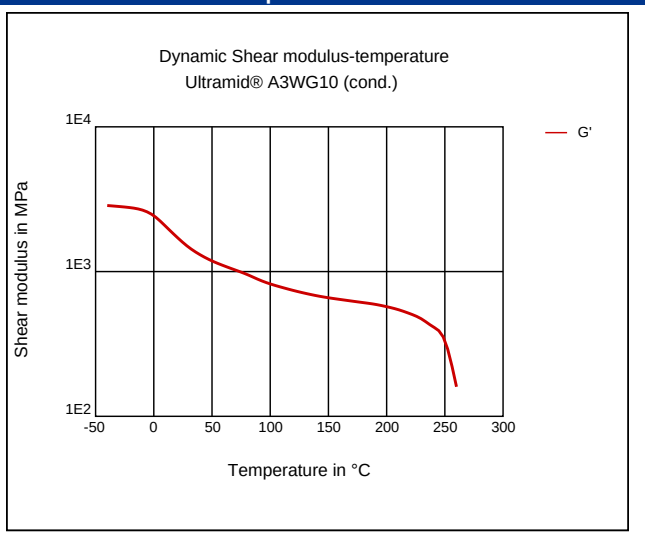
Shearstress-shear rate



Dynamic Shear modulus-temperature



Dynamic Shear modulus-temperature



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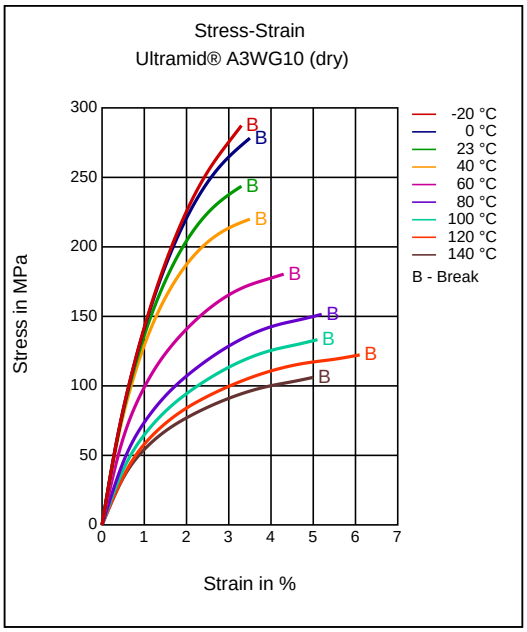
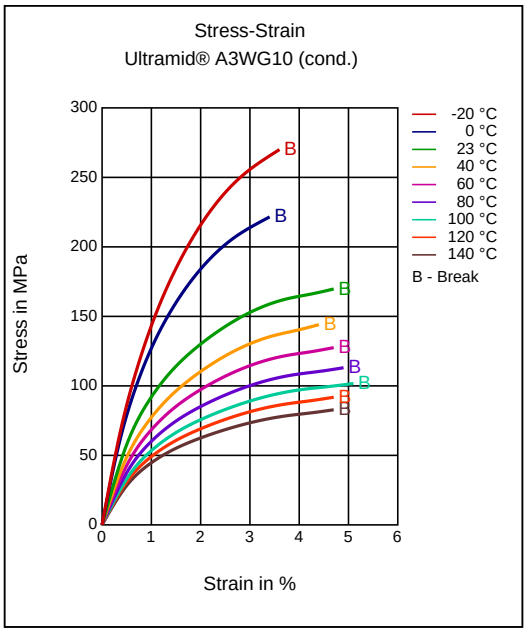
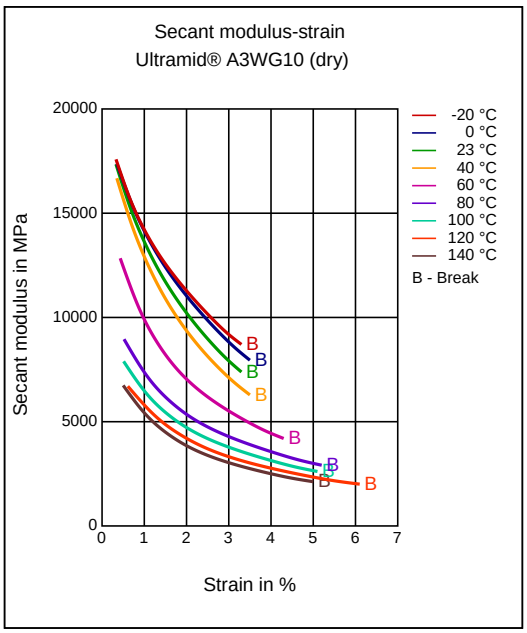
Stress-strain



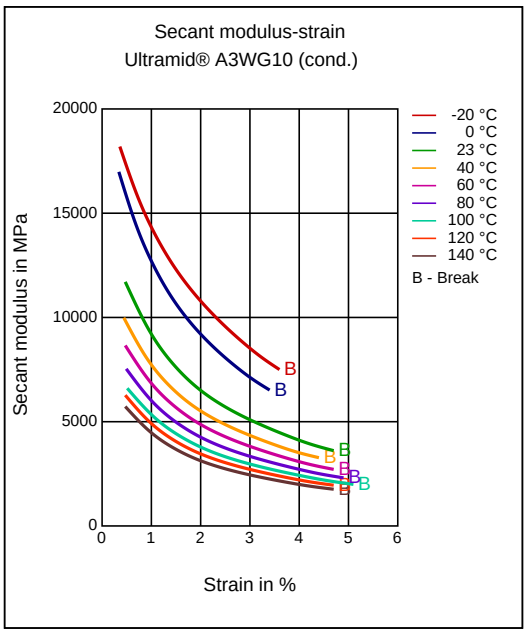
Stress-strain



Secant modulus-strain



Secant modulus-strain



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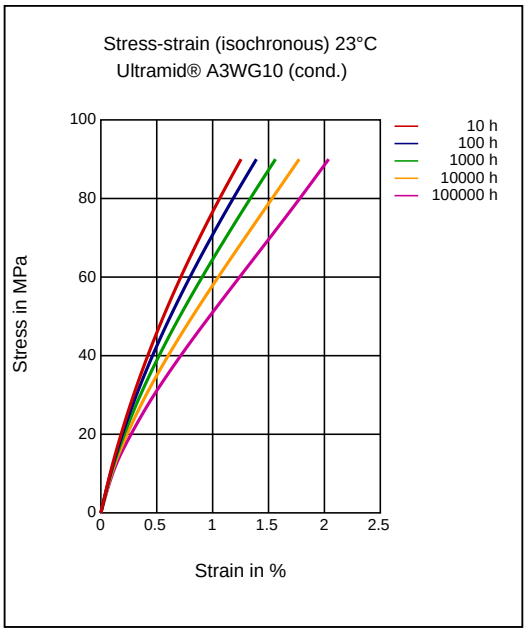
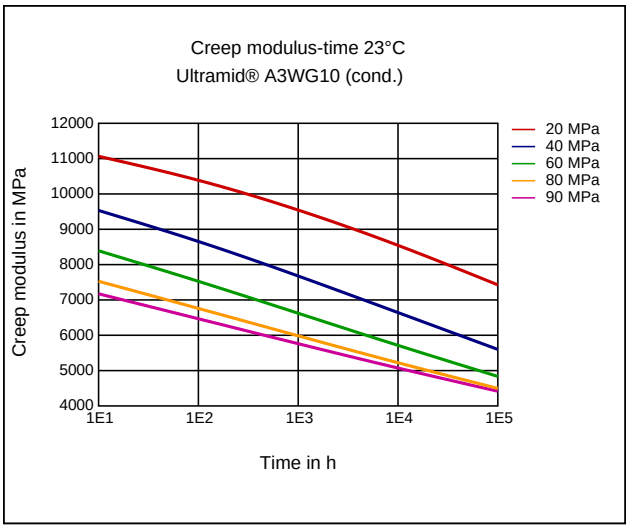
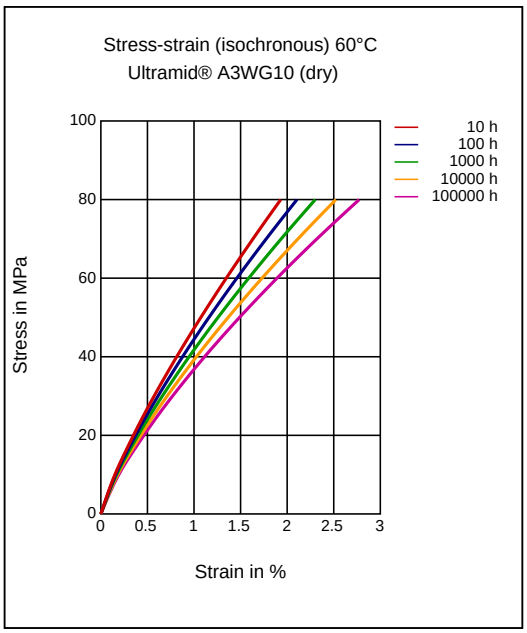
Stress-strain (isochronous) 23 °C



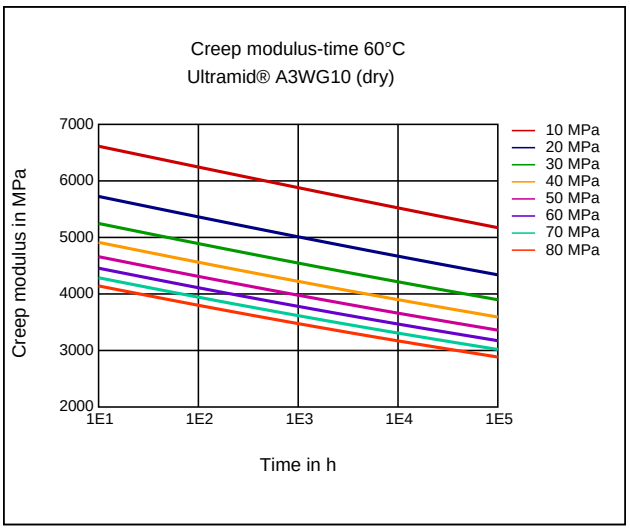
Creep modulus-time 23 °C



Stress-strain (isochronous) 60 °C



Creep modulus-time 60 °C



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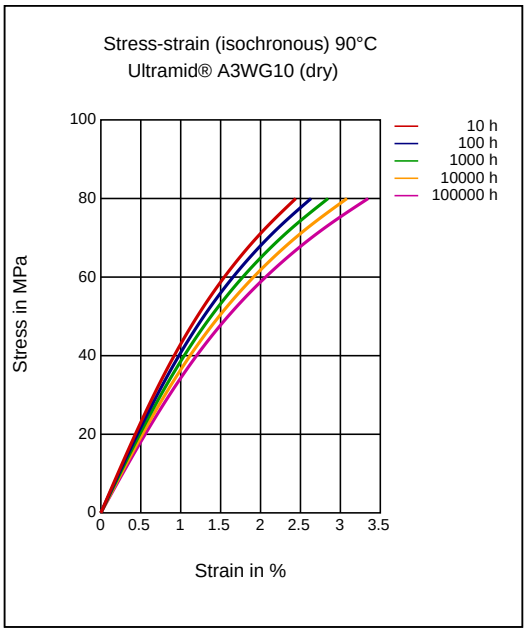
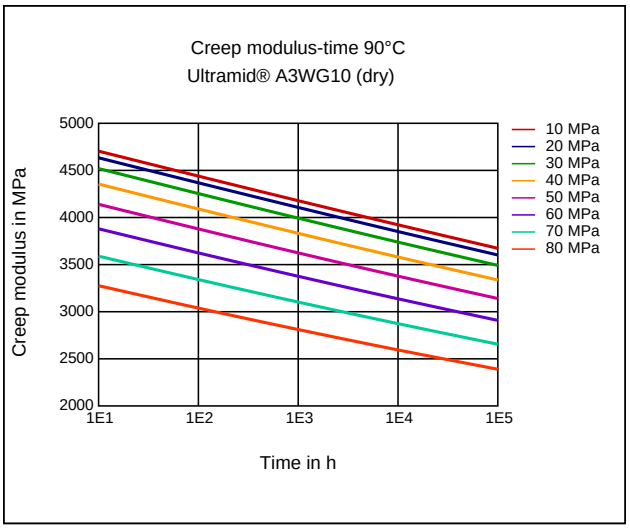
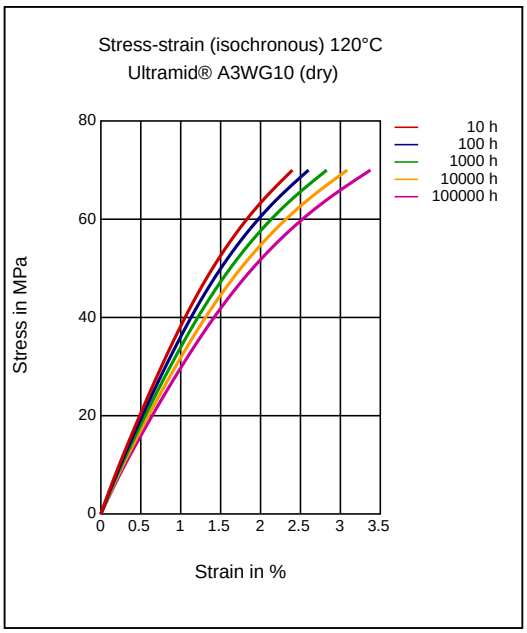
Stress-strain (isochronous) 90 °C



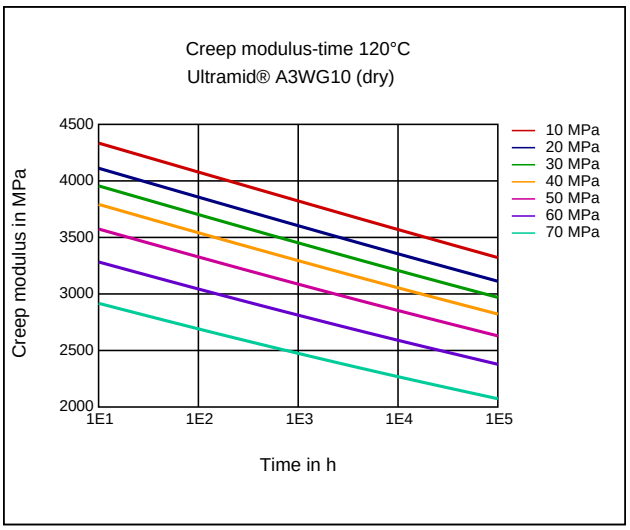
Creep modulus-time 90 °C



Stress-strain (isochronous) 120 °C



Creep modulus-time 120 °C



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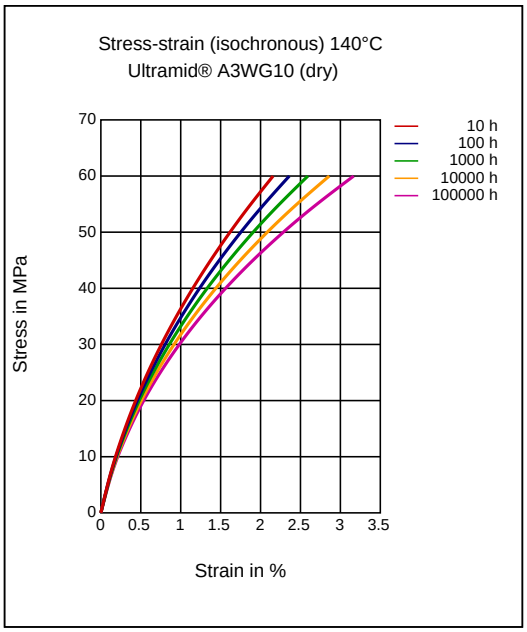
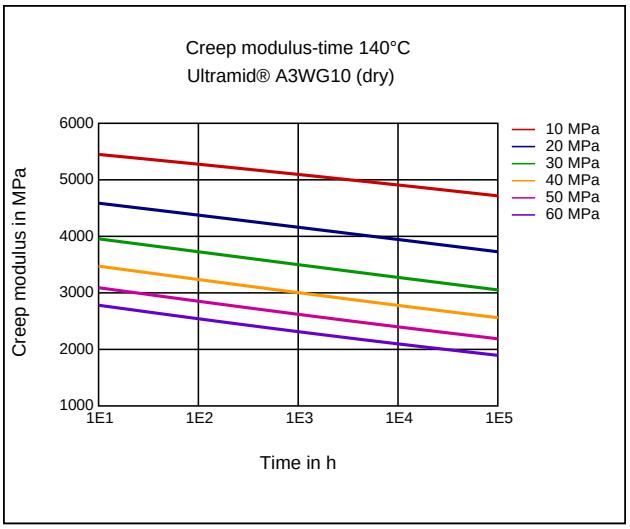
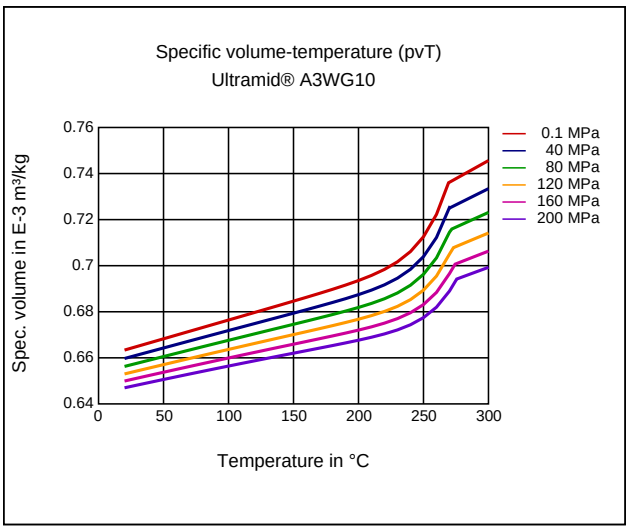
Stress-strain (isochronous) 140 °C



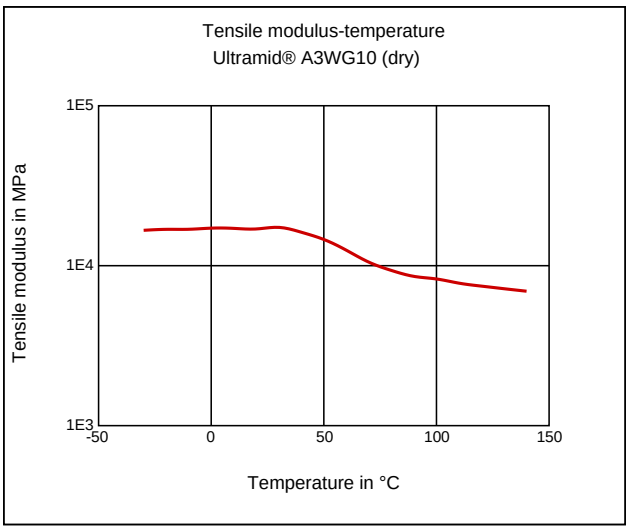
Creep modulus-time 140 °C



Specific volume-temperature (pvT)



Tensile Modulus-Temperature



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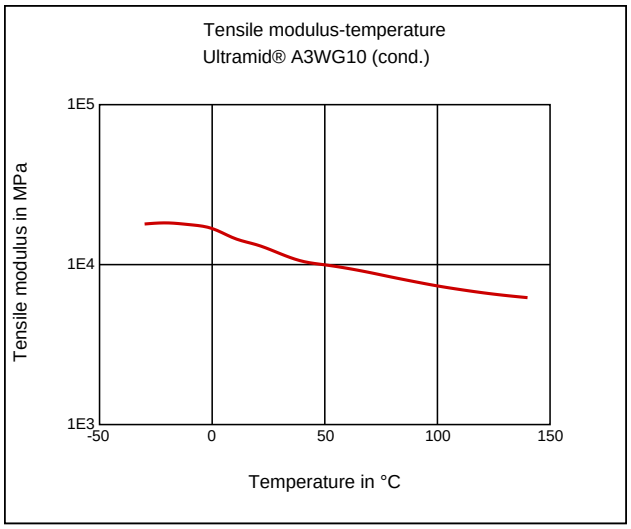
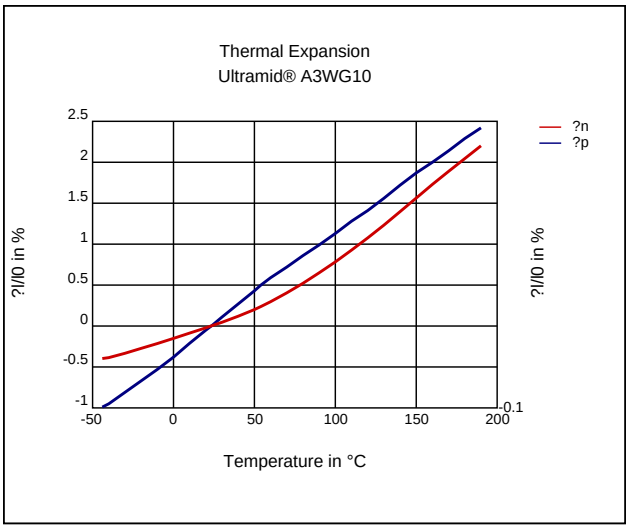
Tensile Modulus-Temperature



Coeff. of linear thermal expansion, normal



Characteristics

Processing
Injection Molding

Special Characteristics
Heat aging stabilized

Delivery form
Pellets

Applications
Automotive

Additives
Lubricants, Release agent

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)