CAMPUS® Datasheet

Ultramid® A3EG7 - PA66-GF35
BASF

Product Texts
Glass fibre reinforced injection moulding grade for machinery components and housings with high stiffness and dimensional stability such as lamp socket housings, heating pumps, flow heaters as well as electrically insulating parts. The products can also be offered as BMBcert™ and/or Ccycled™. Due to the Massbalance approach the product properties do not change.

Rheological properties	dry / cond	Unit	Test Standard
Melt volume-flow rate, MVR	**30 / ***	cm³/10min	ISO 1133
Temperature	**275 / ***	°C	ISO 1133
Load	**5 / ***	kg	ISO 1133
Molding shrinkage, parallel	**0.5 / ***	%	ISO 294-4, 2577
Molding shrinkage, normal	**1.0 / ***	%	ISO 294-4, 2577

Mechanical properties	dry / cond	Unit	Test Standard
Tensile modulus	**11500 / 8500**	MPa	ISO 527-1/-2
Stress at break	**210 / 150**	MPa	ISO 527-1/-2
Strain at break	**3 / 5**	%	ISO 527-1/-2
Tensile creep modulus, 1000h	*** / 6650**	MPa	ISO 899-1
Charpy impact strength, +23°C	**95 / 107**	kJ/m²	ISO 179/1eU
Charpy impact strength, -30°C	**75 / 77**	kJ/m²	ISO 179/1eU
Charpy notched impact strength, +23°C	**14 / 22**	kJ/m²	ISO 179/1eA
Charpy notched impact strength, -30°C	**12 / -**	kJ/m²	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
Vicat softening temperature, 50°C/h 50N	**250 / ***	°C	ISO 306
Coeff. of linear therm. expansion, parallel	**22 / ***	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, normal	**93 / ***	E-6/K	ISO 11359-1/-2
Burning behavior at 1.5 mm nominal thickness	**HB / ***	class	IEC 60695-11-10
Thickness tested (1.5)	**1.6 / ***	mm	IEC 60695-11-10
Yellow Card available	**Yes / ***	-	-
Burning behavior at thickness h	**HB / ***	class	IEC 60695-11-10
Thickness tested (h)	**0.8 / ***	mm	IEC 60695-11-10
Yellow Card available	**Yes / ***	-	-
Oxygen index	**24 / ***	%	ISO 4589-1/-2

Electrical properties	dry / cond	Unit	Test Standard
Relative permittivity, 100Hz	**4.3 / 10.1**	-	IEC 62631-2-1
Relative permittivity, 1MHz	**3.8 / 4.5**	-	IEC 62631-2-1
Dissipation factor, 100Hz	**120 / 1570**	E-4	IEC 62631-2-1
Dissipation factor, 1MHz	**210 / 830**	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	**39 / 37**	kV/mm	IEC 60243-1
Comparative tracking index	**- / 550**	-	IEC 60112

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Other properties	dry / cond	Unit	Test Standard
Water absorption	**5 / ***	%	Sim. to ISO 62
Humidity absorption	**1.6 / ***	%	Sim. to ISO 62
Density	**1410 / -**	kg/m³	ISO 1183

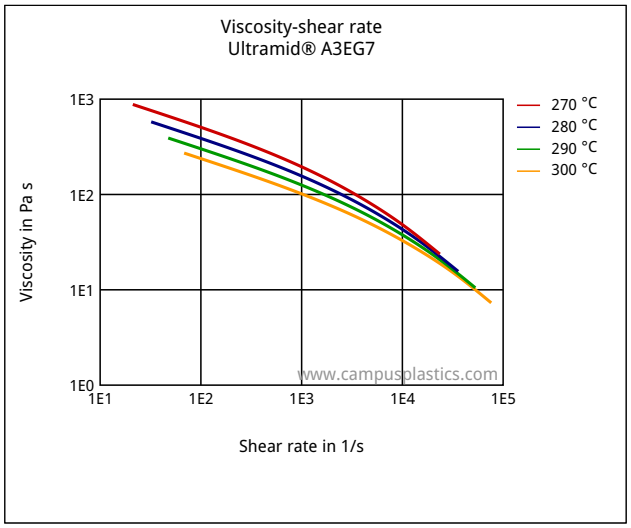
Material specific properties	dry / cond	Unit	Test Standard
Viscosity number	**145 / ***	cm³/g	ISO 307, 1157, 1628

Rheological calculation properties	Value	Unit	Test Standard
Ejection temperature	**195**	°C	-

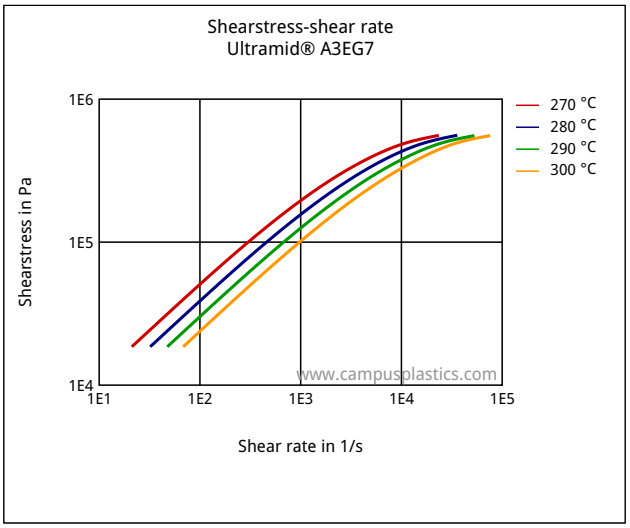
Test specimen production	Value	Unit	Test Standard
Injection molding, melt temperature	**290**	°C	ISO 294
Injection molding, mold temperature	**80**	°C	ISO 294
Injection molding, injection velocity	**200**	mm/s	ISO 294

Diagrams

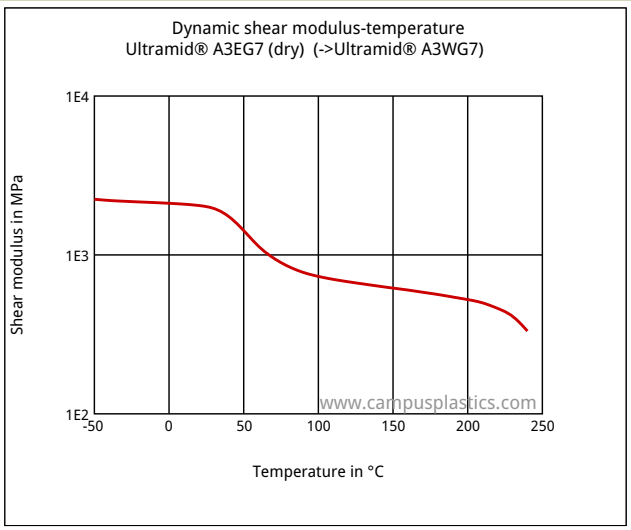
Viscosity-shear rate



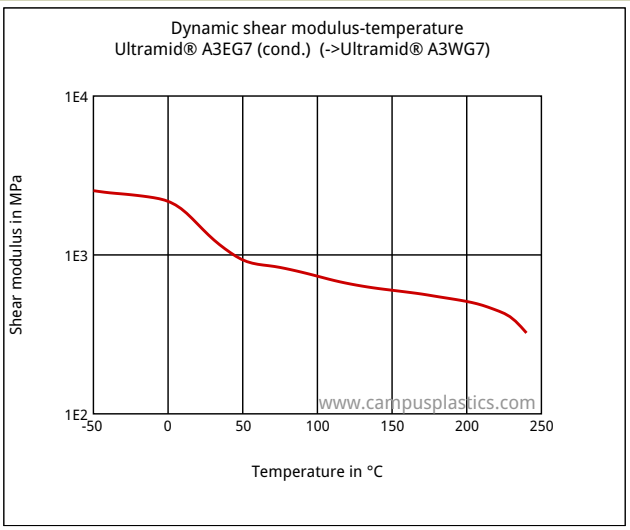
Shearstress-shear rate



Dynamic shear modulus-temperature



Dynamic shear modulus-temperature



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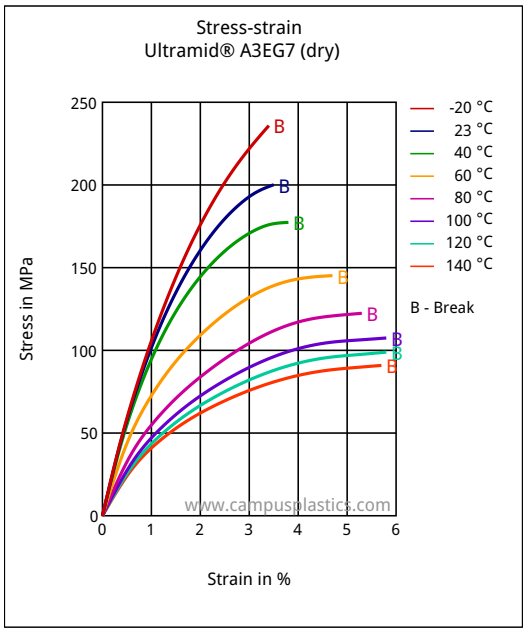
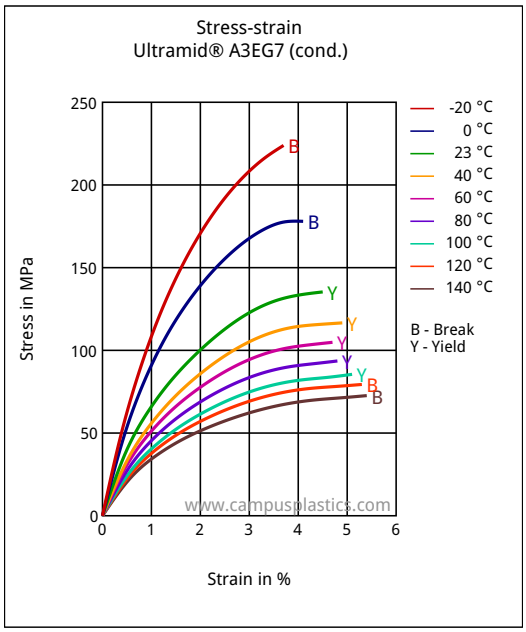
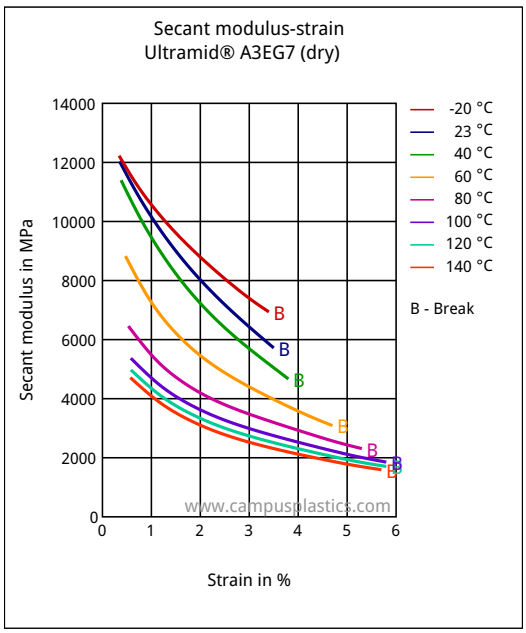
Stress-strain



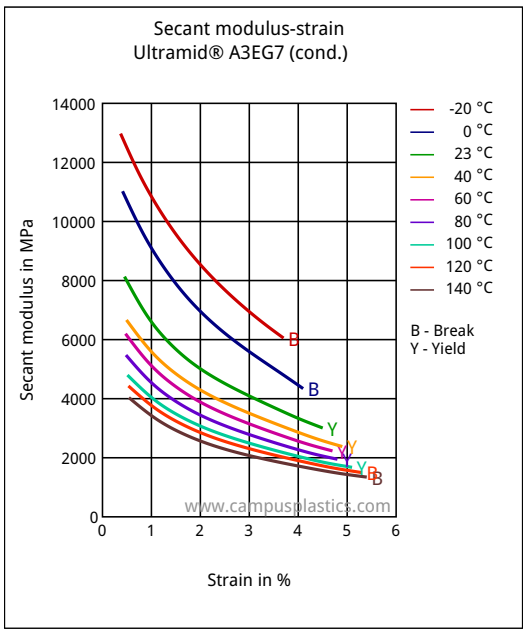
Stress-strain



Secant modulus-strain



Secant modulus-strain



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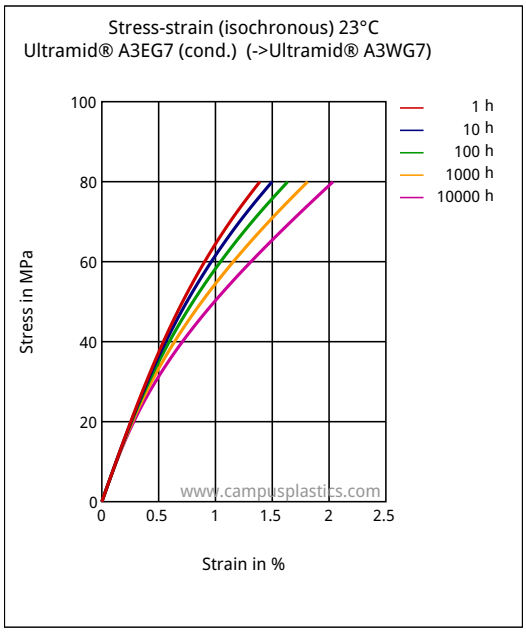
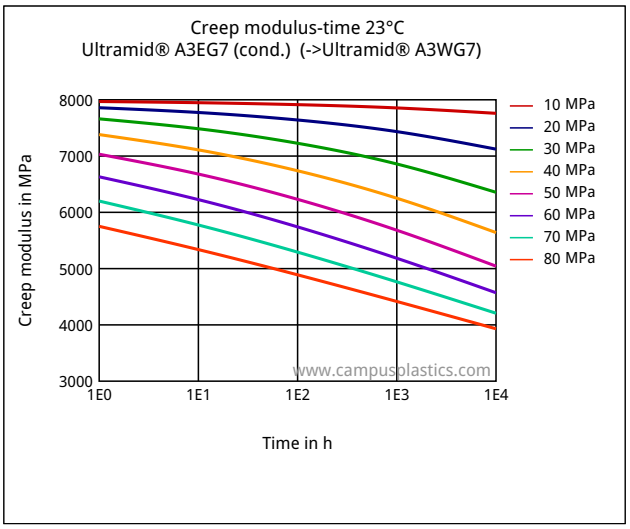
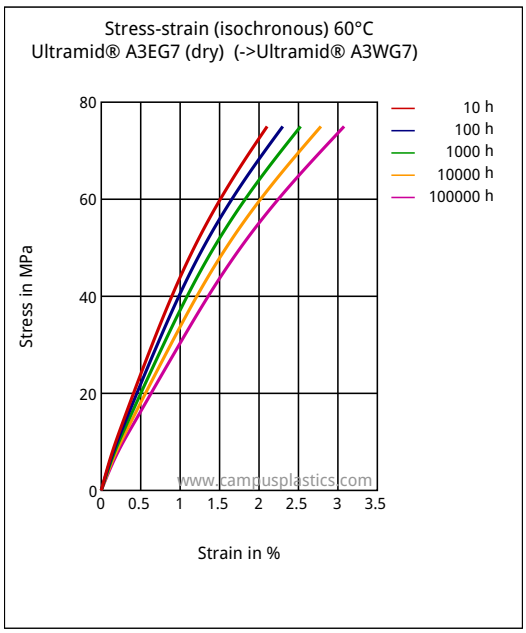
Stress-strain (isochronous) 23°C



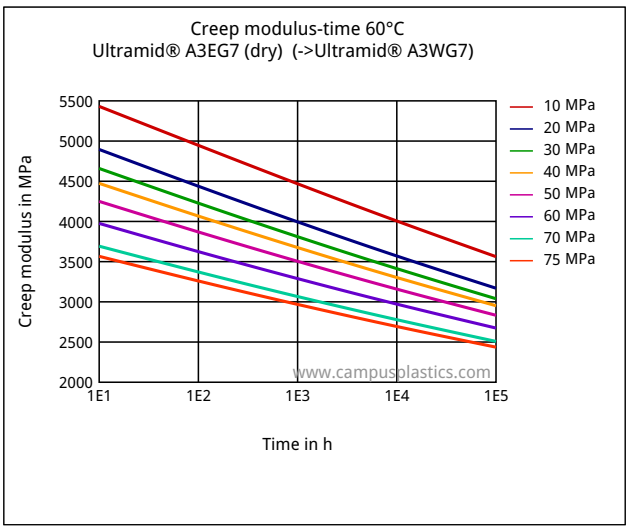
Creep modulus-time 23°C



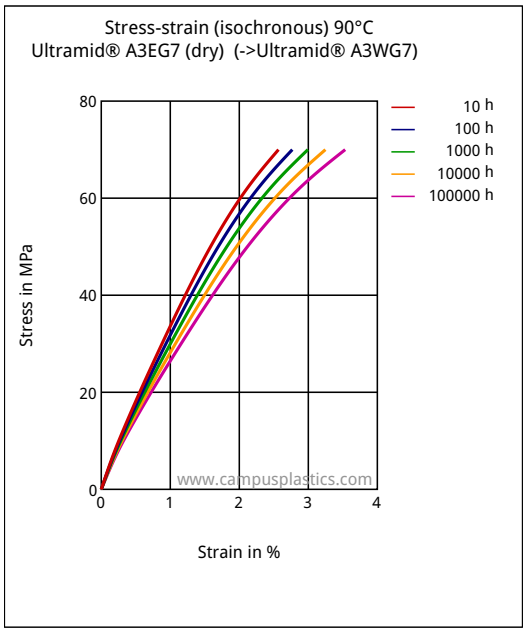
Stress-strain (isochronous) 60°C



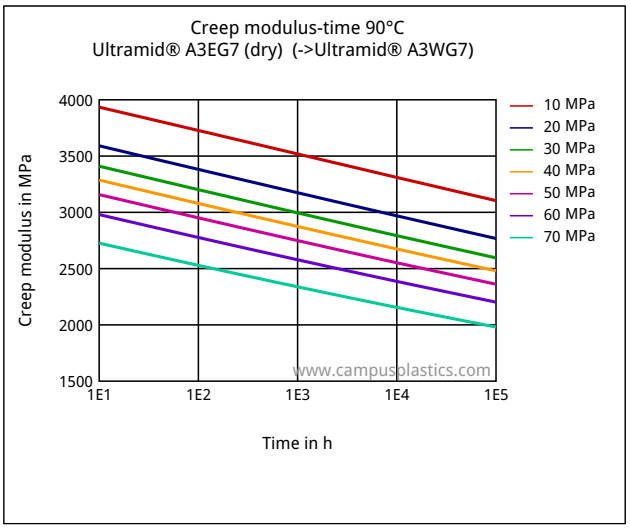
Creep modulus-time 60°C



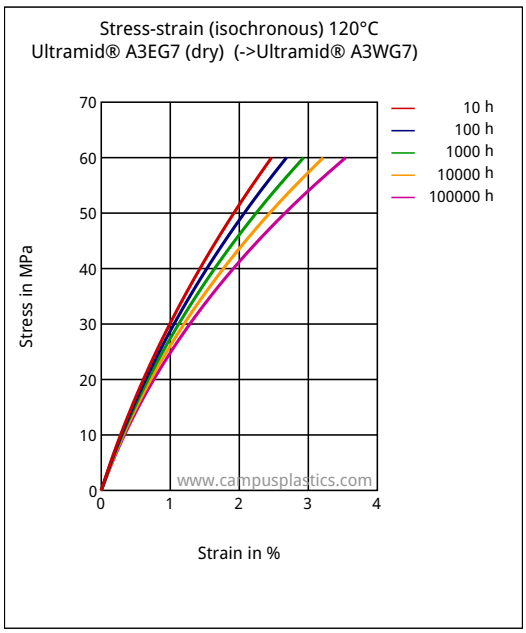
Stress-strain (isochronous) 90°C



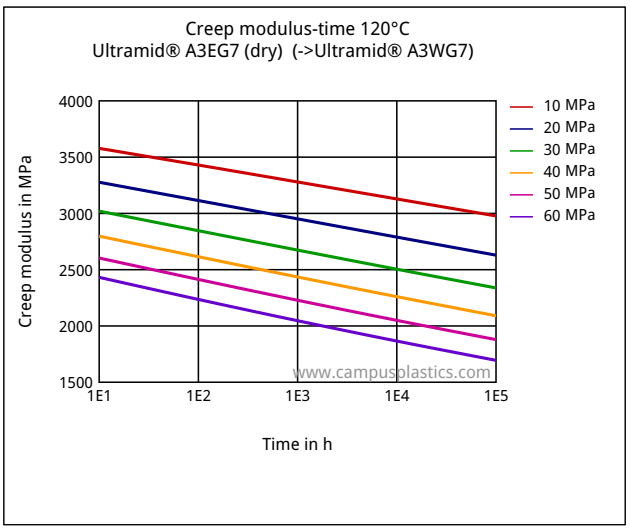
Creep modulus-time 90°C



Stress-strain (isochronous) 120°C



Creep modulus-time 120°C



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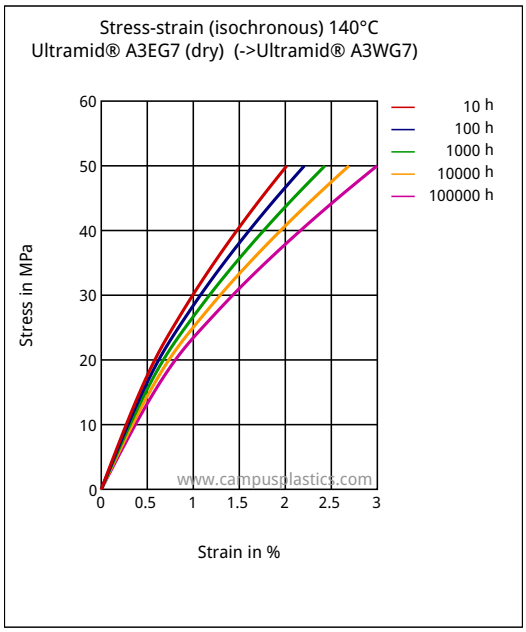
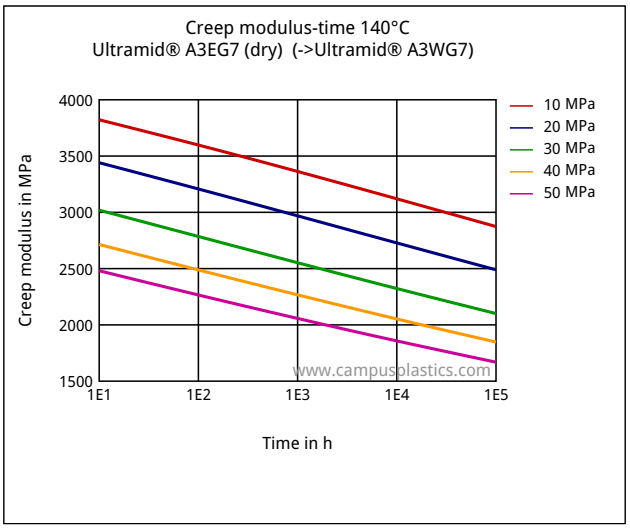
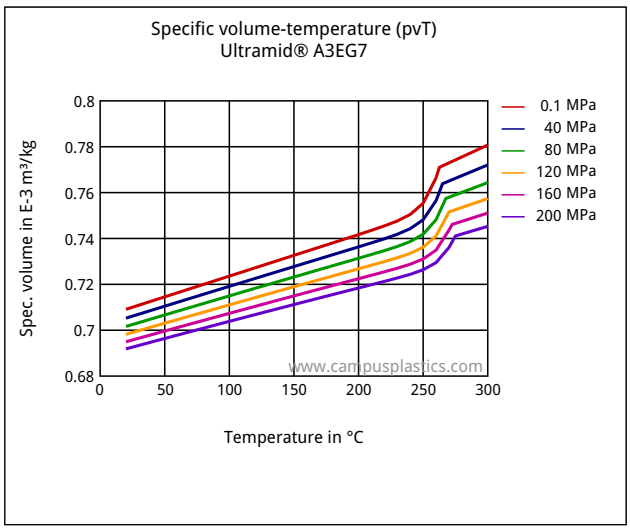
Stress-strain (isochronous) 140°C



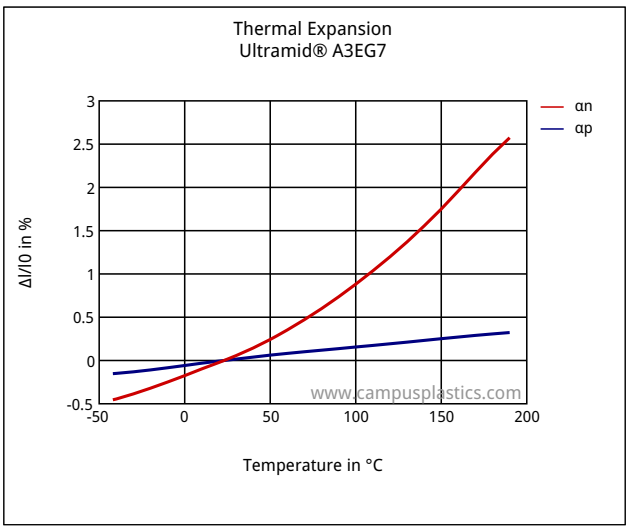
Creep modulus-time 140°C



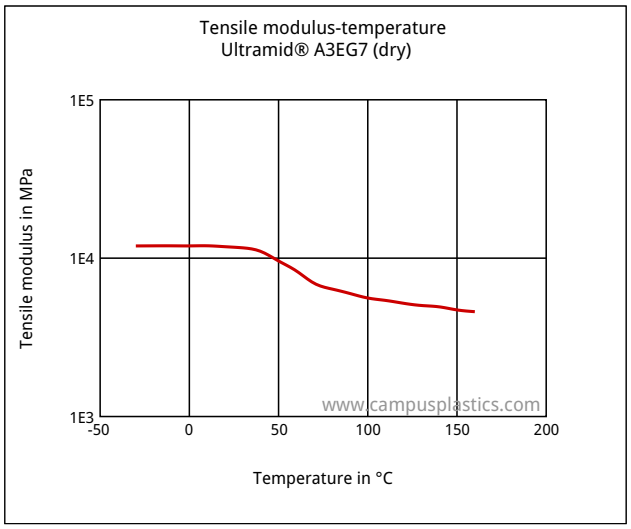
Specific volume-temperature (pvT)



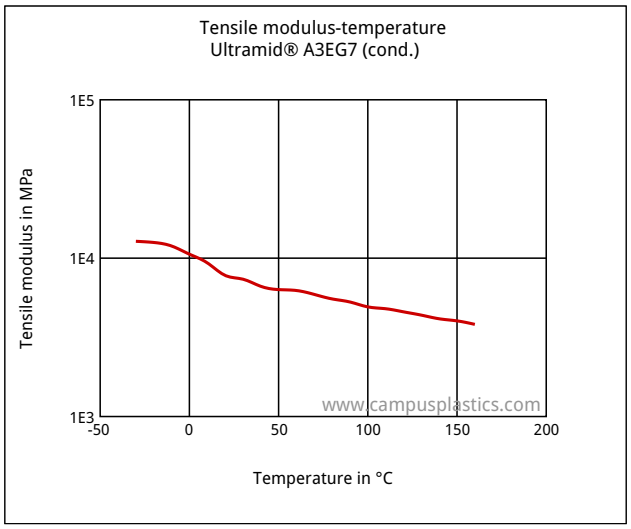
Thermal expansion



Tensile modulus-temperature



Tensile modulus-temperature



Characteristics

Processing
Injection Molding

Special Characteristics
Heat stabilized or stable to heat

Delivery form
Pellets

Regional Availability
North America, Europe, Asia Pacific, South and Central America, Near East/Africa

Additives
Lubricants, Release agent

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 - 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)

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