

Ultramid® A3Z
PA66-I

BASF

An impact-modified and stabilized injection moulding grade for components and housings with good low temperature impact resistance.

Rheological properties	dry / cond	Unit	Test Standard
ISO Data			
Melt volume-flow rate, MVR	21 / *	cm³/10min	ISO 1133
Temperature	275 / *	°C	-
Load	10 / *	kg	-
Molding shrinkage, parallel	2.0 / *	%	ISO 294-4, 2577
Molding shrinkage, normal	1.6 / *	%	ISO 294-4, 2577

Mechanical Properties	dry / cond	Unit	Test Standard
ISO Data			
Tensile Modulus	1800 / 700	MPa	ISO 527
Yield stress	45 / 30	MPa	ISO 527
Yield strain	4.5 / 40	%	ISO 527
Nominal strain at break	30 / -	%	ISO 527
Tensile Creep Modulus, 1000h	* / 450	MPa	ISO 899-1
Impact Strength (Charpy), +23°C	no break / no break	kJ/m²	ISO 179/1eU
Impact Strength (Charpy), -30°C	no break / no break	kJ/m²	ISO 179/1eU
Notched Impact Strength (Charpy), +23°C	90 / 115	kJ/m²	ISO 179/1eA
Notched Impact Strength (Charpy), -30°C	70 / 70	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)	60 / *	°C	ISO 75-1/-2
Temp. of deflection under load (0.45 MPa)	125 / *	°C	ISO 75-1/-2
Coeff. of Linear Therm. Expansion, parallel	133 / *	E-6/K	ISO 11359-1/-2
Coeff. of Linear Therm. Expansion, normal	120 / *	E-6/K	ISO 11359-1/-2
Burning Behav. at 1.5 mm Nom. Thickn.	HB / *	class	UL 94
Thickness tested	1.6 / *	mm	-
UL recognition	yes / *	-	-
Burning Behav. at thickness h	HB / *	class	UL 94
Thickness tested	3.1 / *	mm	-
UL recognition	yes / *	-	-

Electrical Properties	dry / cond	Unit	Test Standard
ISO Data			
Relative permittivity, 1MHz	3.1 / 3.6	-	IEC 62631-2-1
Dissipation Factor, 1MHz	160 / 700	E-4	IEC 62631-2-1
Volume Resistivity	4E12 / 1E10	Ohm*m	IEC 62631-3-1
Surface Resistivity	* / 1E12	Ohm	IEC 62631-3-2
Comparative tracking index	- / 600	-	IEC 60112

Other Properties	dry / cond	Unit	Test Standard
ISO Data			
Water Absorption	7.2 / *	%	Sim. to ISO 62
Humidity absorption	2.3 / *	%	Sim. to ISO 62
Density	1060 / -	kg/m³	ISO 1183

Test specimen production	Value	Unit	Test Standard
ISO Data			
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

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

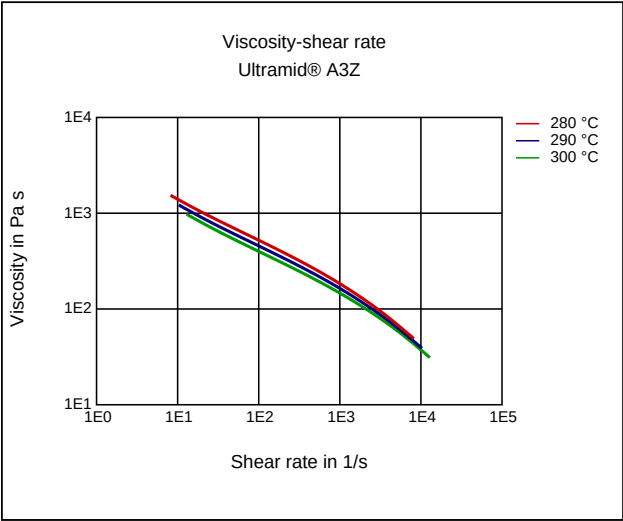
60 - 80

°C

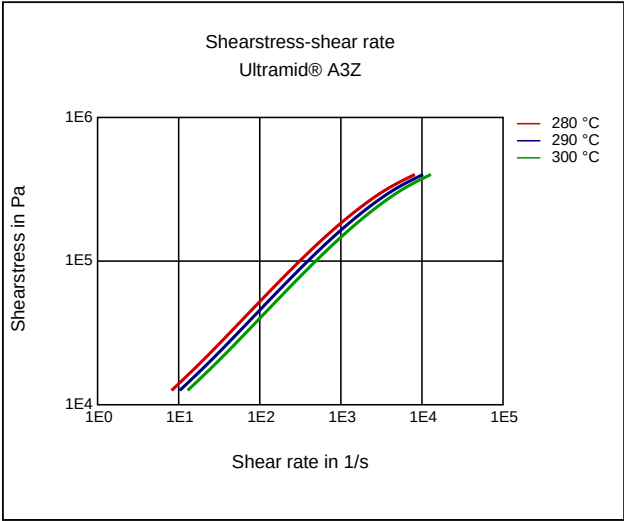
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Diagrams

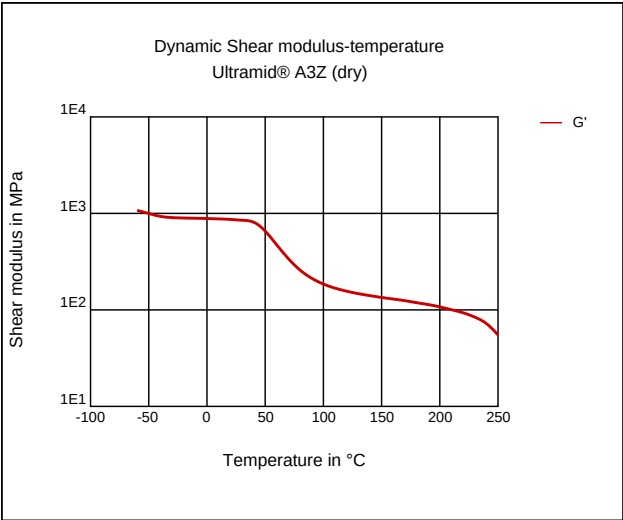
Viscosity-shear rate



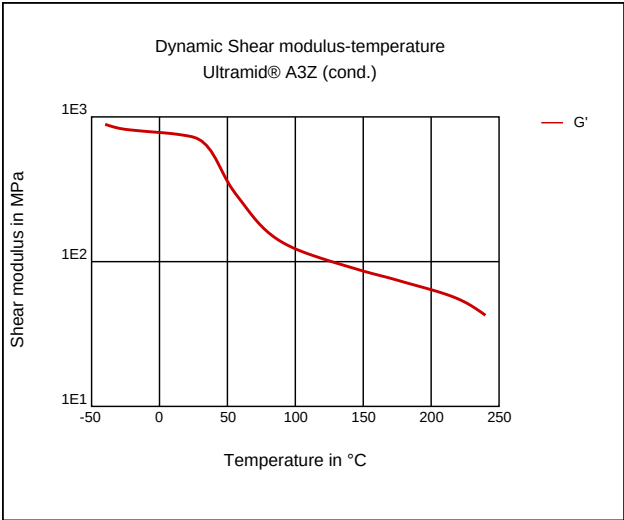
Shearstress-shear rate



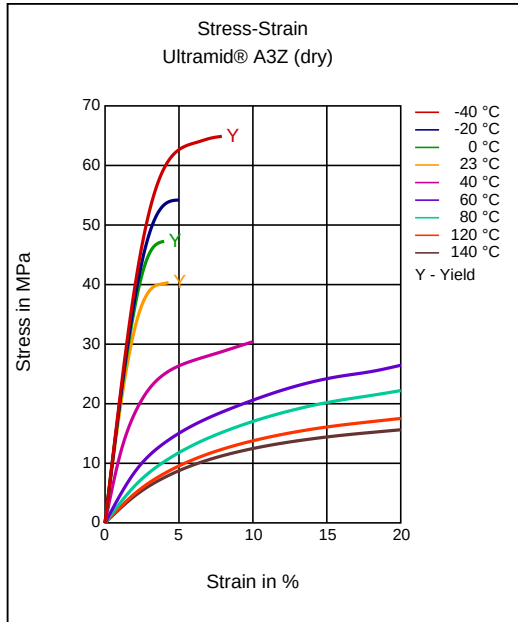
Dynamic Shear modulus-temperature



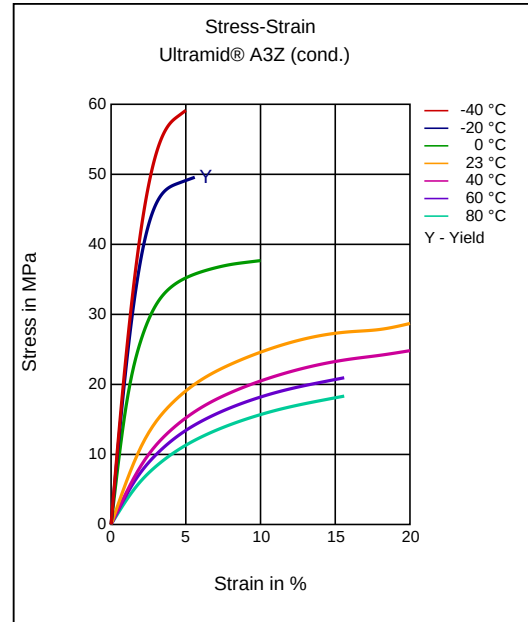
Dynamic Shear modulus-temperature



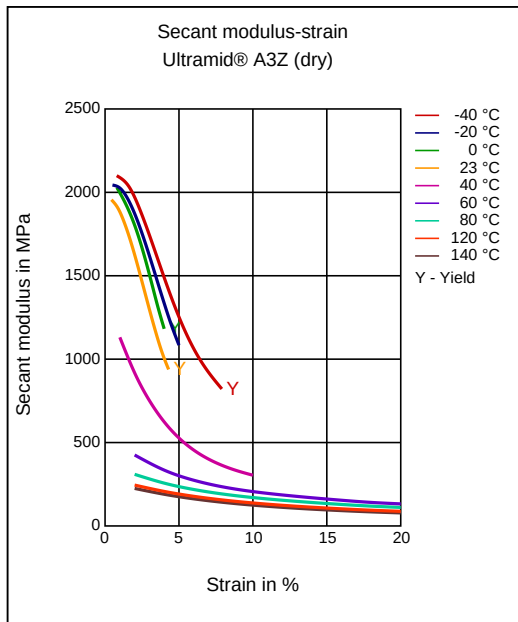
Stress-strain



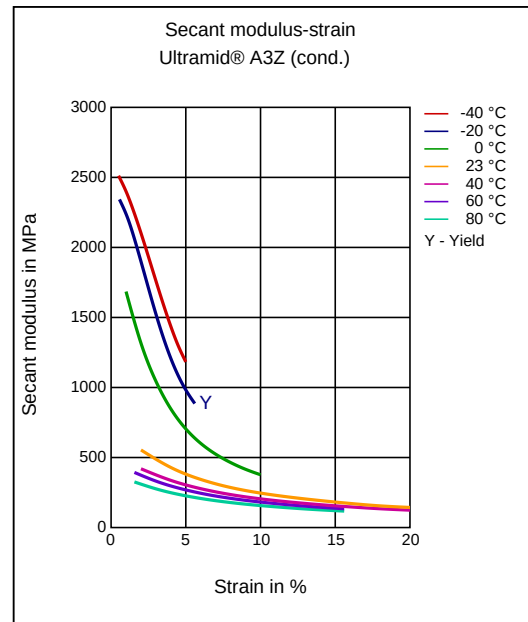
Stress-strain



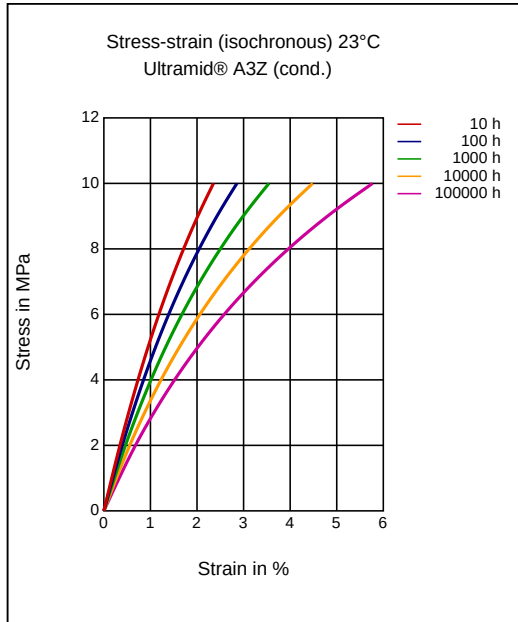
Secant modulus-strain



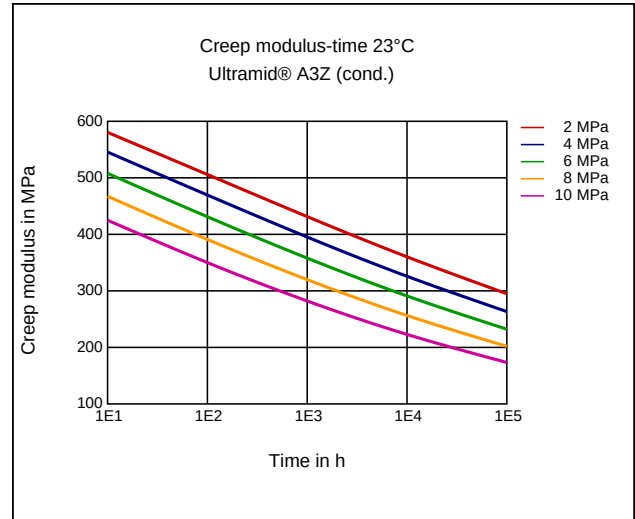
Secant modulus-strain



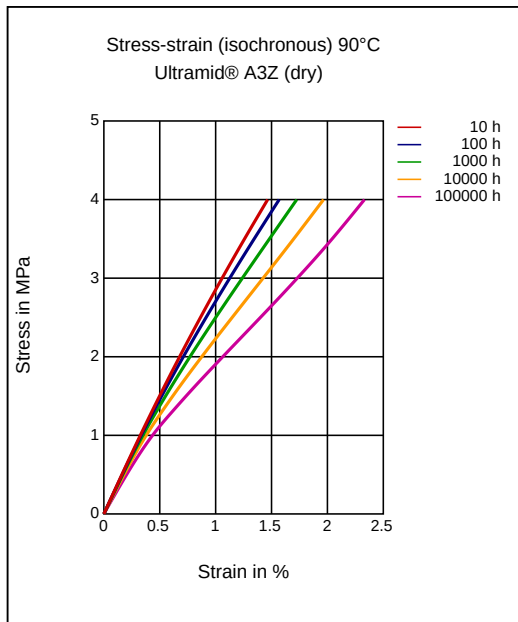
Stress-strain (isochronous) 23°C



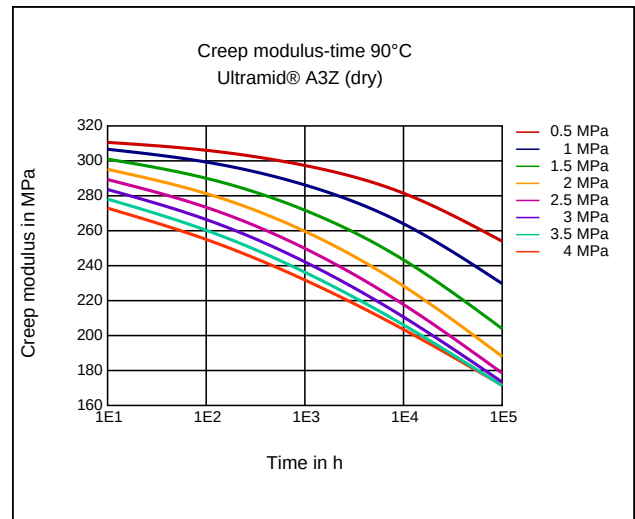
Creep modulus-time 23°C



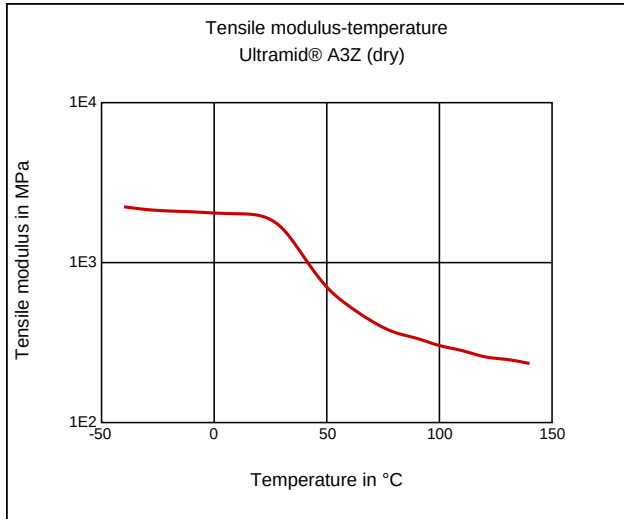
Stress-strain (isochronous) 90°C



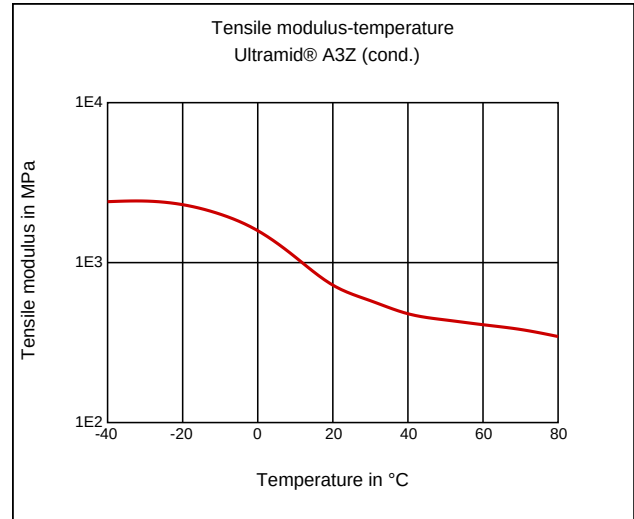
Creep modulus-time 90°C



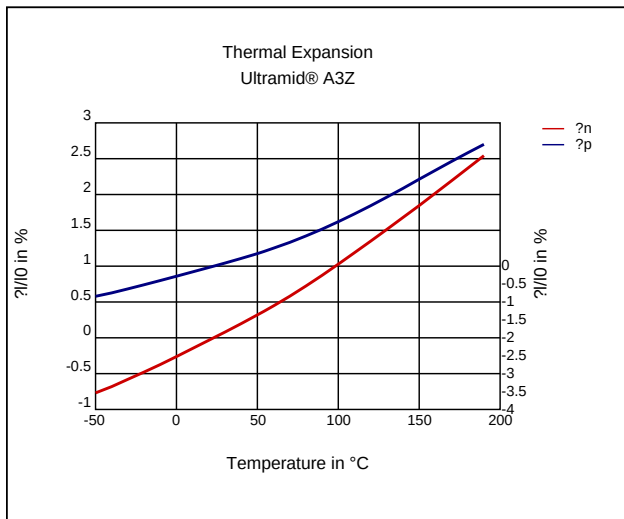
Tensile Modulus-Temperature



Tensile Modulus-Temperature



Coeff. of linear thermal expansion, normal



Characteristics

Processing

Injection Molding

Delivery form

Pellets

Special Characteristics

Impact modified, Heat aging stabilized

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: 60 - 80 °C

injection molding, Mold temperature, recommended: 60 °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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