

Ultramid® B3L

PA6-I

BASF

An impact-modified, easy flowing injection moulding grade for fast processing. Uses include impact-resistant articles (eg dowels, housings, fittings, small parts and anchors).

Rheological properties	dry / cond	Unit	Test Standard
ISO Data			
Melt volume-flow rate, MVR	100 / *	cm³/10min	ISO 1133
Temperature	275 / *	°C	-
Load	5 / *	kg	-
Molding shrinkage, parallel	1.3 / *	%	ISO 294-4, 2577
Molding shrinkage, normal	1.5 / *	%	ISO 294-4, 2577

Mechanical Properties	dry / cond	Unit	Test Standard
ISO Data			
Tensile Modulus	2800 / 900	MPa	ISO 527
Yield stress	70 / 35	MPa	ISO 527
Yield strain	3.5 / 18	%	ISO 527
Nominal strain at break	25 / >50	%	ISO 527
Tensile Creep Modulus, 1h	* / 800	MPa	ISO 899-1
Tensile Creep Modulus, 1000h	* / 550	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 / -	kJ/m²	ISO 179/1eU
Notched Impact Strength (Charpy), +23°C	10 / no break	kJ/m²	ISO 179/1eA
Notched Impact Strength (Charpy), -30°C	6 / -	kJ/m²	ISO 179/1eA

Thermal Properties	dry / cond	Unit	Test Standard
ISO Data			
Melting Temperature (10°C/min)	220 / *	°C	ISO 11357-1/-3
Temp. of deflection under load (1.80 MPa)	55 / *	°C	ISO 75-1/-2
Temp. of deflection under load (0.45 MPa)	150 / *	°C	ISO 75-1/-2
Vicat softening temperature, 50°C/h 50N	204 / *	°C	ISO 306
Coeff. of Linear Therm. Expansion, parallel	93 / *	E-6/K	ISO 11359-1/-2
Coeff. of Linear Therm. Expansion, normal	140 / *	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	0.4 / *	mm	-
UL recognition	yes / *	-	-
Oxygen index	22 / *	%	ISO 4589-1/-2

Electrical Properties	dry / cond	Unit	Test Standard
ISO Data			
Relative permittivity, 100Hz	4 / -	-	IEC 62631-2-1
Relative permittivity, 1MHz	3.5 / 6.4	-	IEC 62631-2-1
Dissipation Factor, 100Hz	100 / -	E-4	IEC 62631-2-1
Dissipation Factor, 1MHz	240 / 2400	E-4	IEC 62631-2-1
Volume Resistivity	1E13 / 1E10	Ohm*m	IEC 62631-3-1
Surface Resistivity	* / 1E10	Ohm	IEC 62631-3-2
Comparative tracking index	- / 600	-	IEC 60112

Other Properties	dry / cond	Unit	Test Standard
ISO Data			
Water Absorption	9 / *	%	Sim. to ISO 62
Humidity absorption	2.5 / *	%	Sim. to ISO 62
Density	1100 / -	kg/m³	ISO 1183

Rheological calculation properties	Value	Unit	Test Standard
ISO Data			
Ejection temperature	145	°C	-

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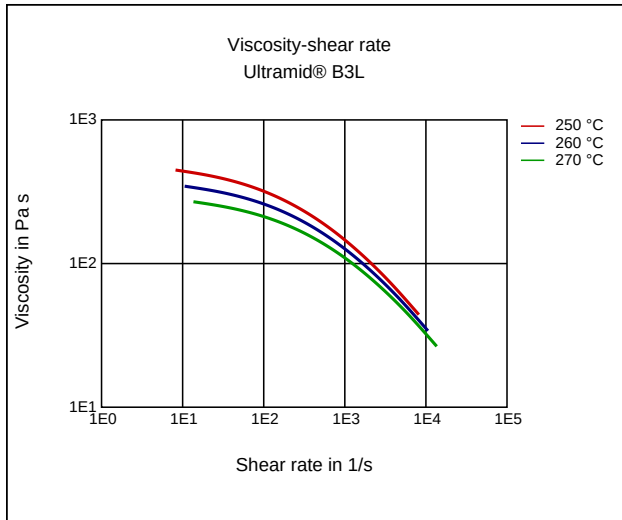
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Test specimen production	Value	Unit	Test Standard
ISO Data			
Injection Molding, melt temperature	250	°C	ISO 294
Injection Molding, mold temperature	80	°C	ISO 294
Injection Molding, injection velocity	200	mm/s	ISO 294

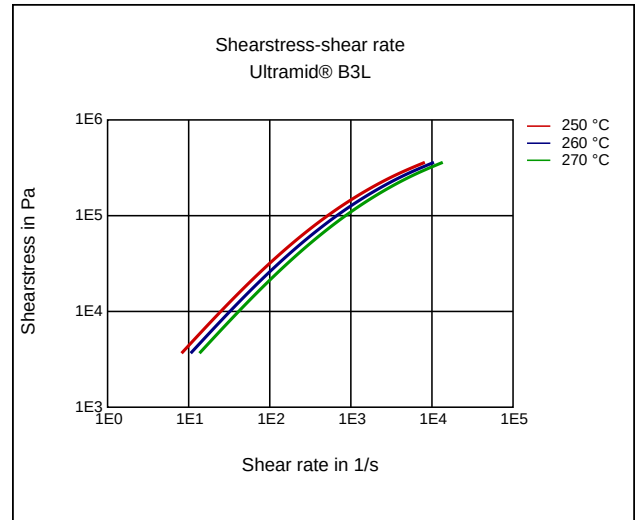
Processing Recommendation Injection Molding	Value	Unit	Test Standard
Pre-drying - Temperature	80	°C	-
Pre-drying - Time	4	h	-
Processing humidity	≤0.15	%	-
Melt temperature	250 - 270	°C	-
Mold temperature	40 - 60	°C	-

Diagrams

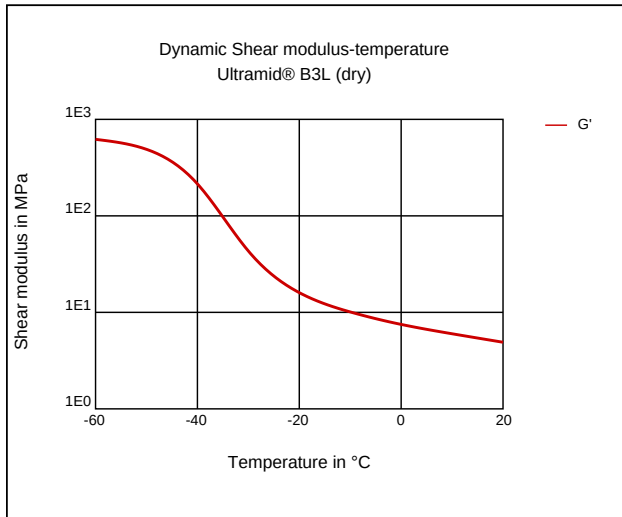
Viscosity-shear rate



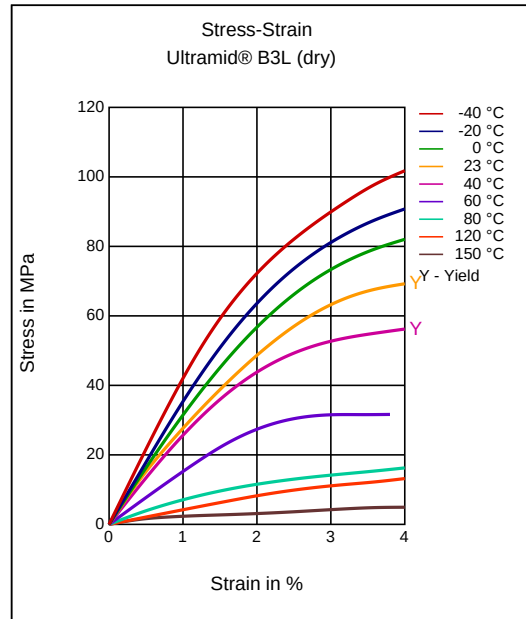
Shearstress-shear rate



Dynamic Shear modulus-temperature



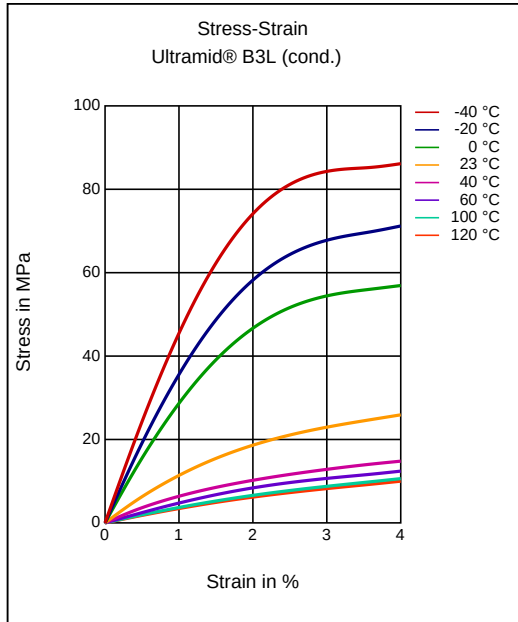
Stress-strain



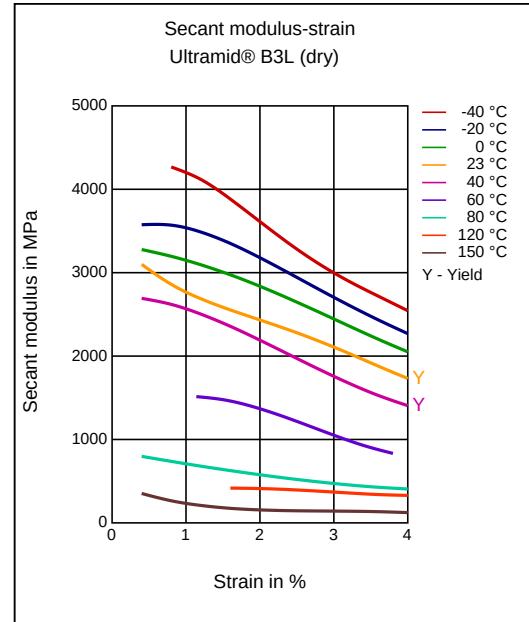
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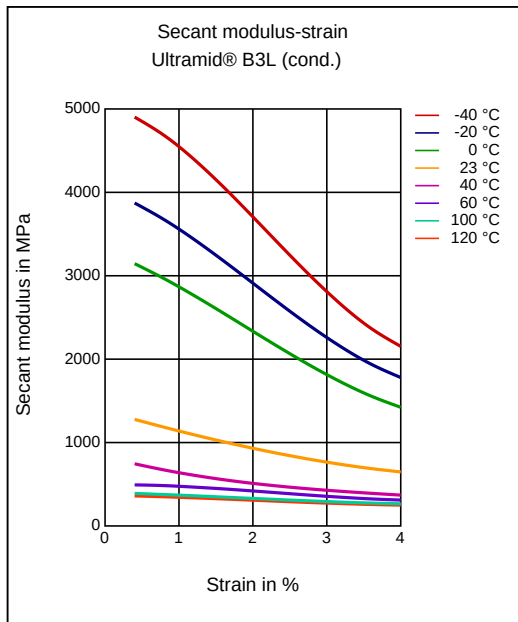
Stress-strain



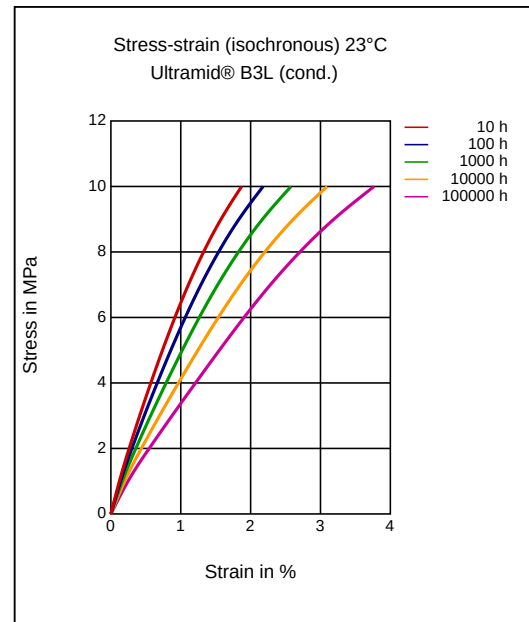
Secant modulus-strain



Secant modulus-strain



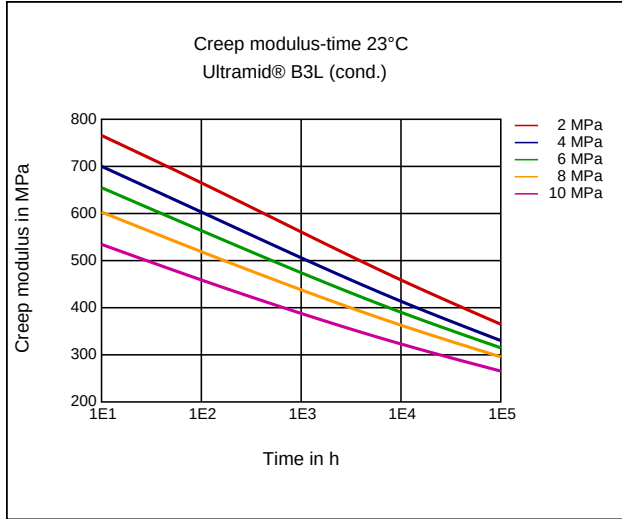
Stress-strain (isochronous) 23 °C



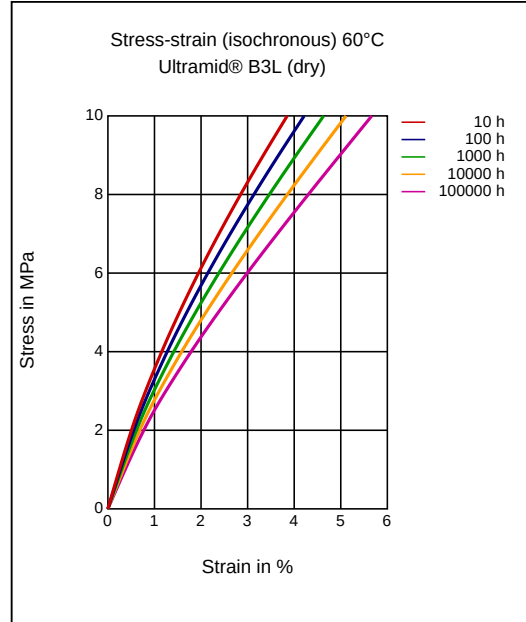
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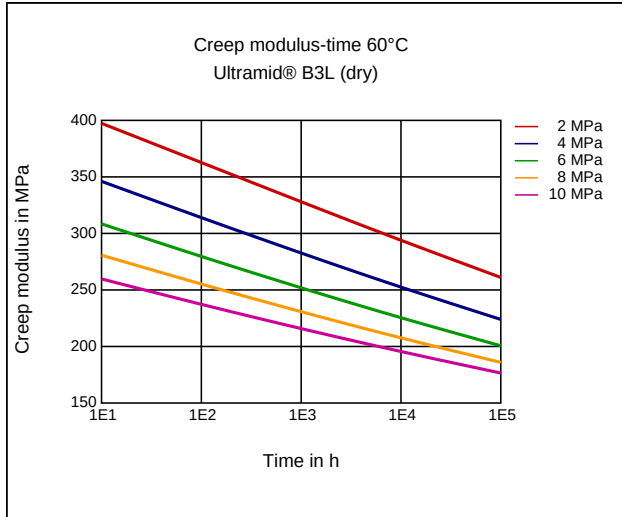
Creep modulus-time 23°C



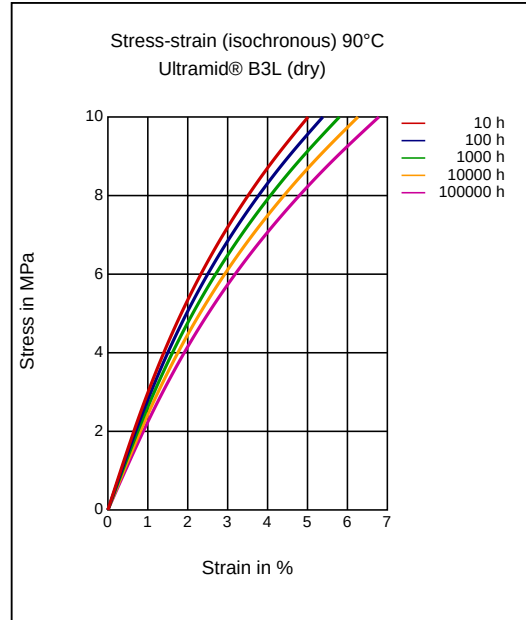
Stress-strain (isochronous) 60°C



Creep modulus-time 60°C



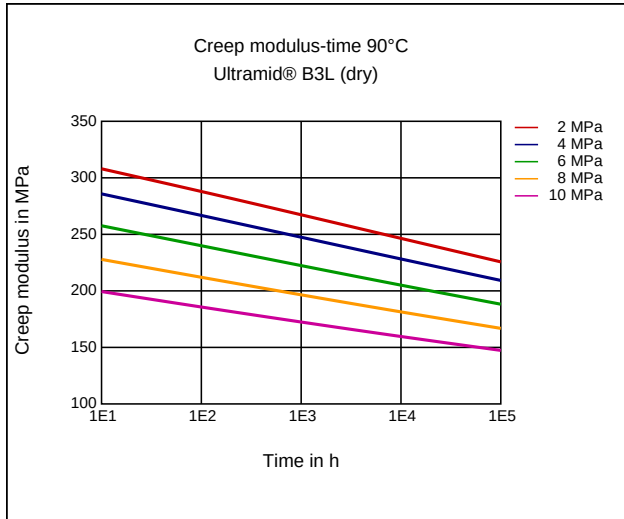
Stress-strain (isochronous) 90°C



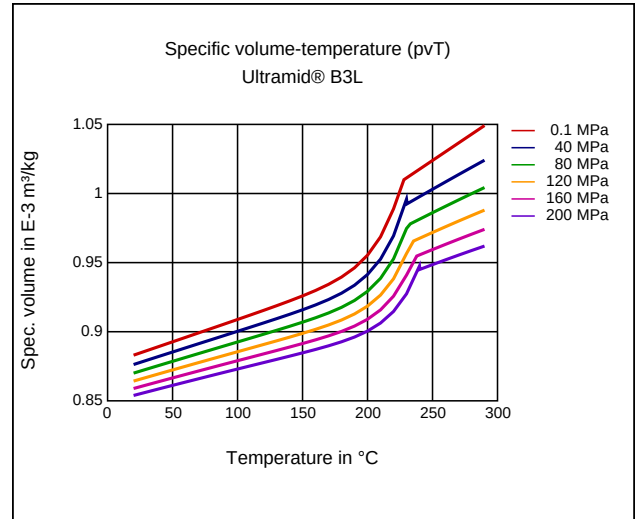
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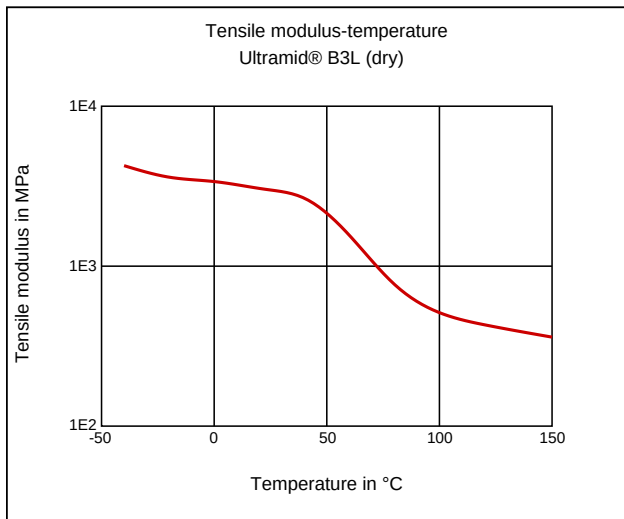
Creep modulus-time 90 °C



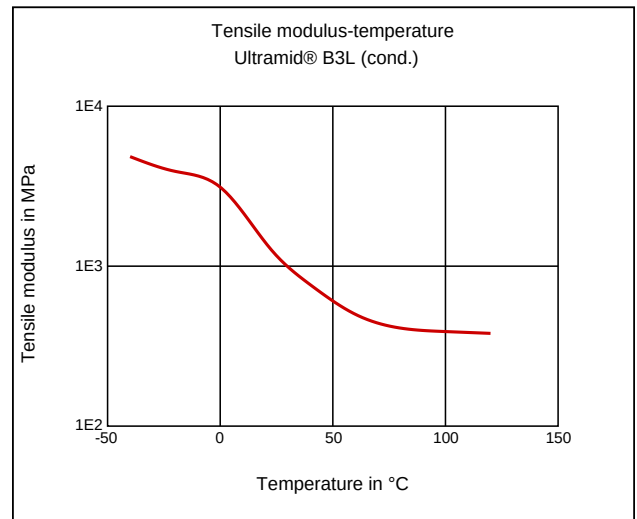
Specific volume-temperature (pvT)



Tensile Modulus-Temperature



Tensile Modulus-Temperature

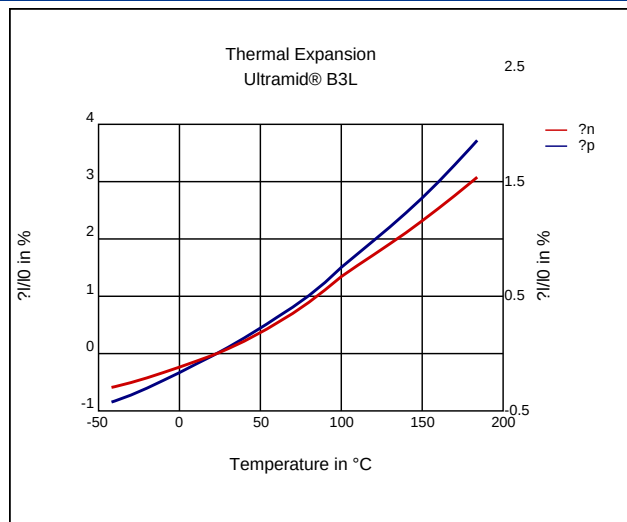


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Coeff. of linear thermal expansion, normal



Characteristics

Processing

Injection Molding

Additives

Lubricants, Release agent

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: 250 - 270 °C

injection molding, Melt temperature, recommended: 260 °C

injection molding, Mold temperature, range: 40 - 60 °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)