

Ultramid® T KR 4350

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Partially aromatic polyamide for injection molding and extrusion. High toughness, stiffness and strength, low water absorption, high melting point (295 °C).

Rheological properties	dry / cond	Unit	Test Standard
ISO Data			
Molding shrinkage, parallel	0.8 / *	%	ISO 294-4, 2577
Molding shrinkage, normal	1.1 / *	%	ISO 294-4, 2577

Mechanical Properties	dry / cond	Unit	Test Standard
ISO Data			
Tensile Modulus	3100 / 3100	MPa	ISO 527
Yield stress	80 / -	MPa	ISO 527
Yield strain	5 / -	%	ISO 527
Nominal strain at break	8 / -	%	ISO 527
Tensile Creep Modulus, 1000h	* / 2300	MPa	ISO 899-1
Impact Strength (Charpy), +23°C	140 / -	kJ/m²	ISO 179/1eU
Impact Strength (Charpy), -30°C	130 / -	kJ/m²	ISO 179/1eU
Notched Impact Strength (Charpy), +23°C	8 / -	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)	295 / *	°C	ISO 11357-1/-3
Glass Transition Temperature (10°C/min)	105 / *	°C	ISO 11357-1/-2
Temp. of deflection under load (1.80 MPa)	95 / *	°C	ISO 75-1/-2
Vicat softening temperature, 50°C/h 50N	280 / *	°C	ISO 306
Coeff. of Linear Therm. Expansion, parallel	70 / *	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	0.4 / *	mm	-
UL recognition	yes / *	-	-
Oxygen index	24 / *	%	ISO 4589-1/-2

Electrical Properties	dry / cond	Unit	Test Standard
ISO Data			
Relative permittivity, 1MHz	4 / 4	-	IEC 62631-2-1
Dissipation Factor, 1MHz	300 / 400	E-4	IEC 62631-2-1
Volume Resistivity	1E13 / 1E12	Ohm*m	IEC 62631-3-1
Surface Resistivity	* / 1E13	Ohm	IEC 62631-3-2
Electric Strength	38 / 35	kV/mm	IEC 60243-1
Comparative tracking index	- / 600	-	IEC 60112

Other Properties	dry / cond	Unit	Test Standard
ISO Data			
Water Absorption	7 / *	%	Sim. to ISO 62
Humidity absorption	1.8 / *	%	Sim. to ISO 62
Density	1160 / -	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			
Ejection temperature	195	°C	-

Test specimen production	Value	Unit	Test Standard
ISO Data			

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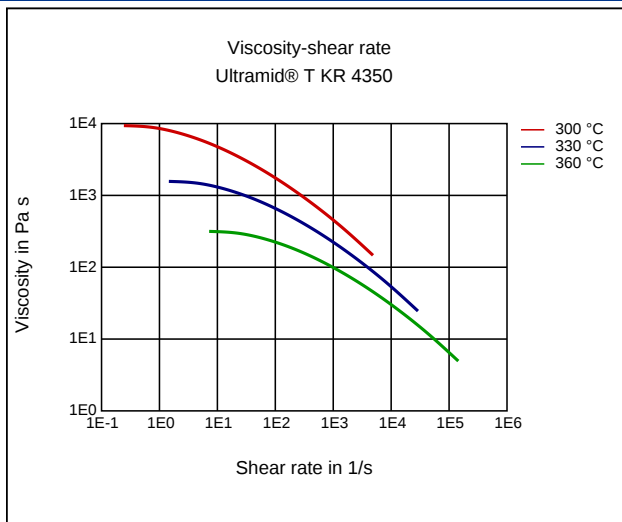
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Injection Molding, melt temperature	320	°C	ISO 294
Injection Molding, mold temperature	60	°C	ISO 294
Injection Molding, injection velocity	200	mm/s	ISO 294

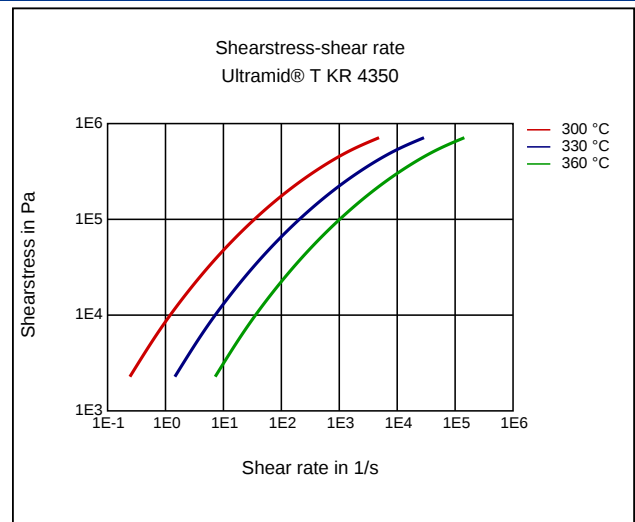
Processing Recommendation Injection Molding	Value	Unit	Test Standard
Pre-drying - Temperature	110	°C	-
Pre-drying - Time	8	h	-
Processing humidity	≤0.15	%	-
Melt temperature	310 - 330	°C	-
Mold temperature	70 - 100	°C	-

Diagrams

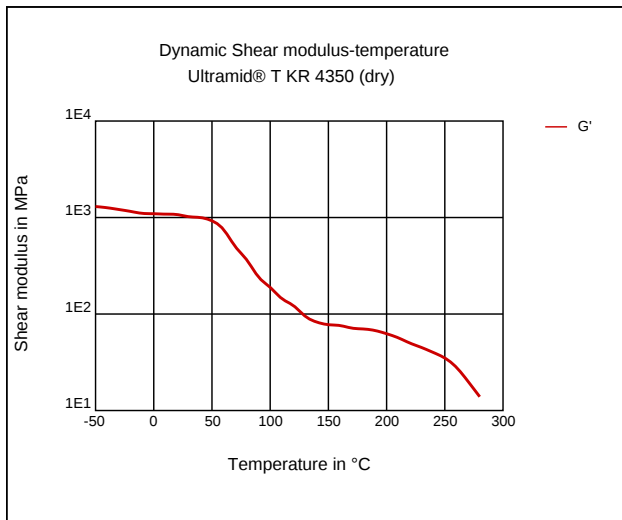
Viscosity-shear rate



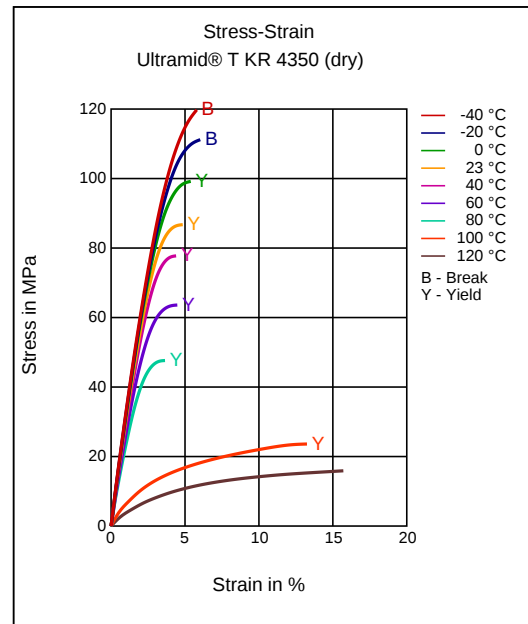
Shearstress-shear rate



Dynamic Shear modulus-temperature



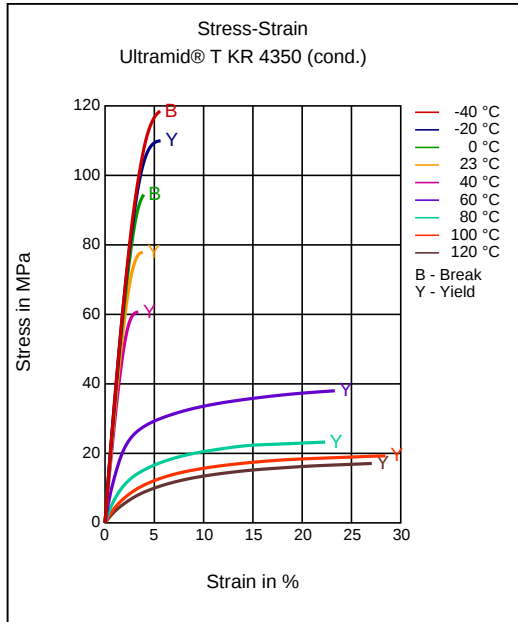
Stress-strain



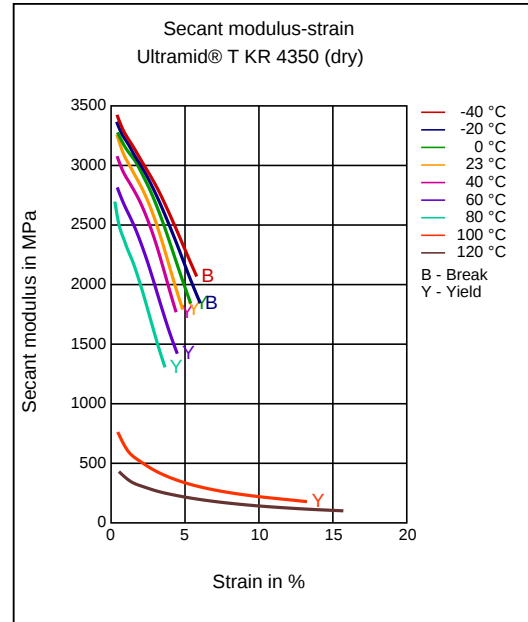
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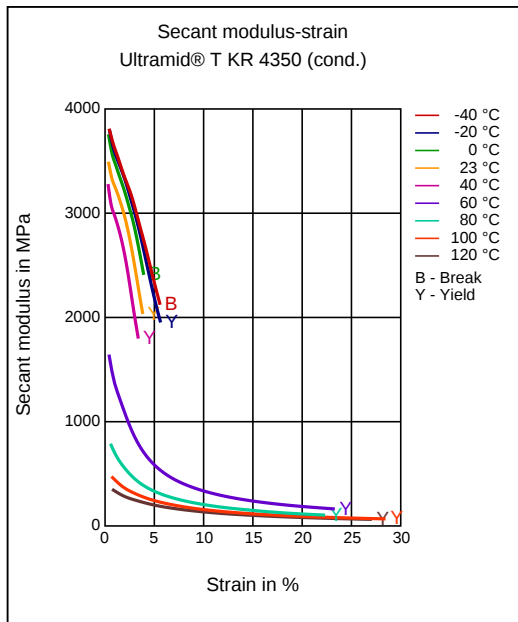
Stress-strain



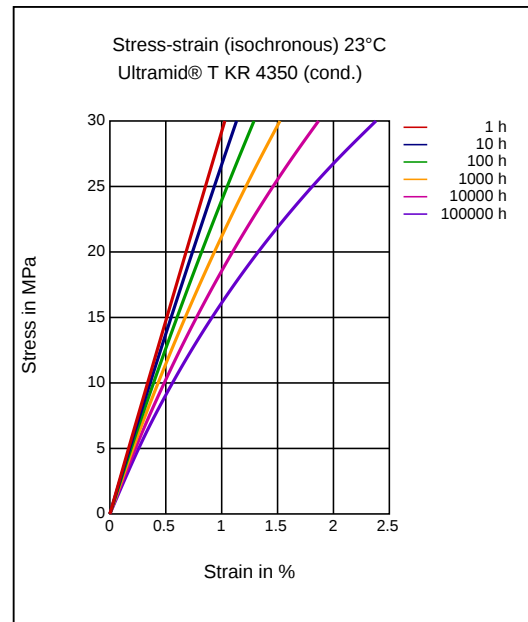
Secant modulus-strain



Secant modulus-strain



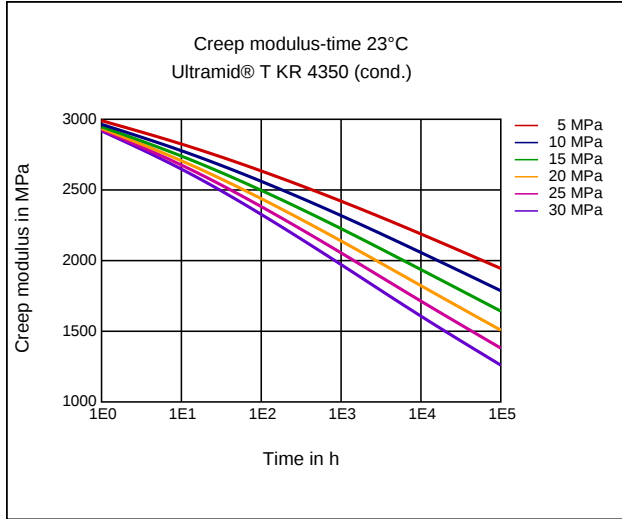
Stress-strain (isochronous) 23 °C



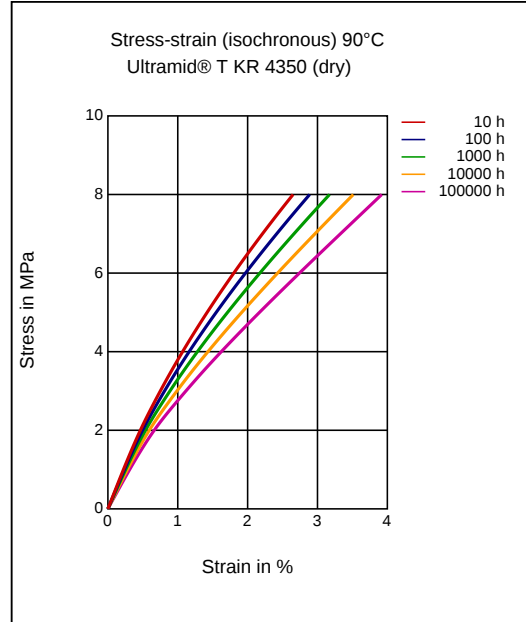
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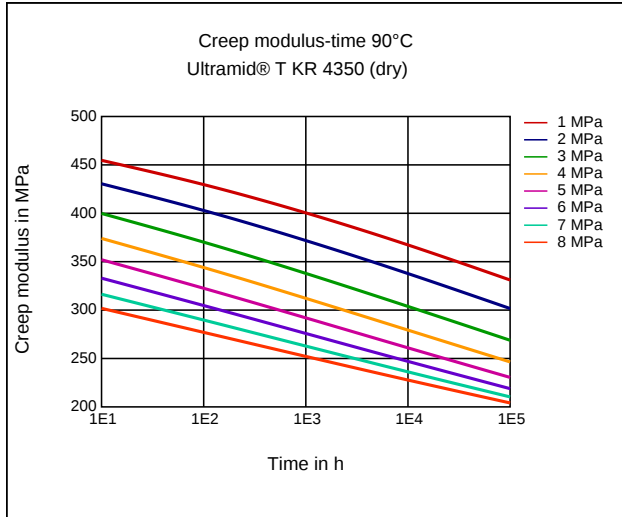
Creep modulus-time 23°C



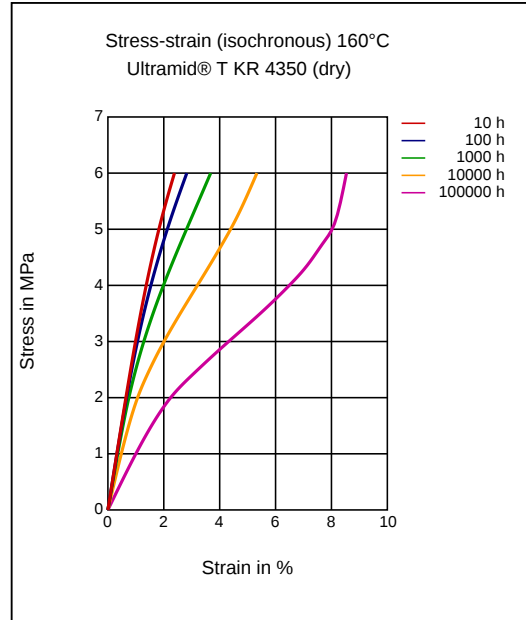
Stress-strain (isochronous) 90°C



Creep modulus-time 90°C



Stress-strain (isochronous) 160°C

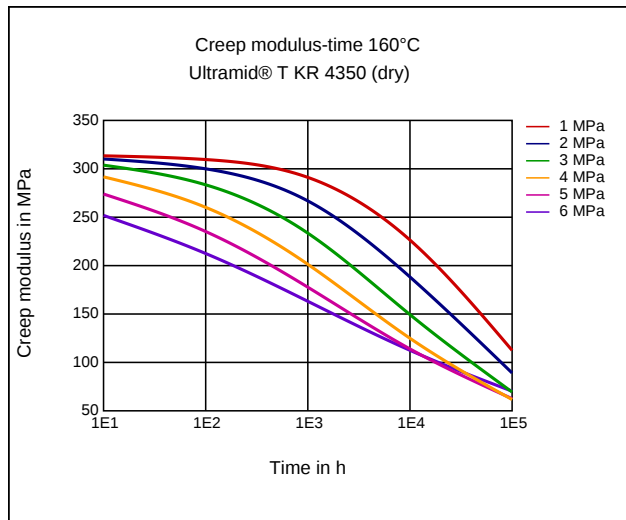


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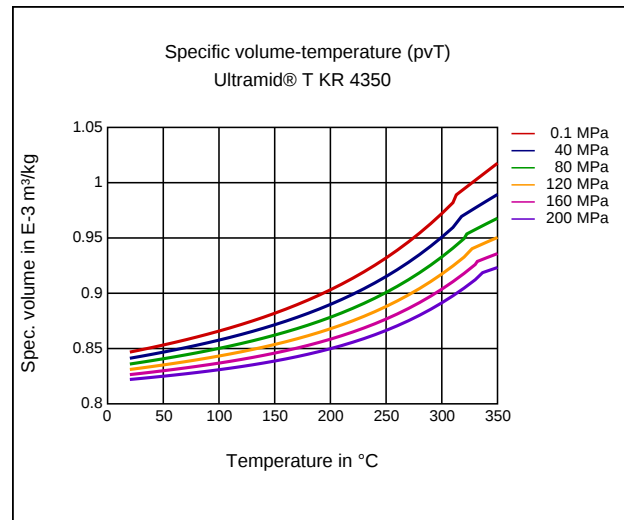
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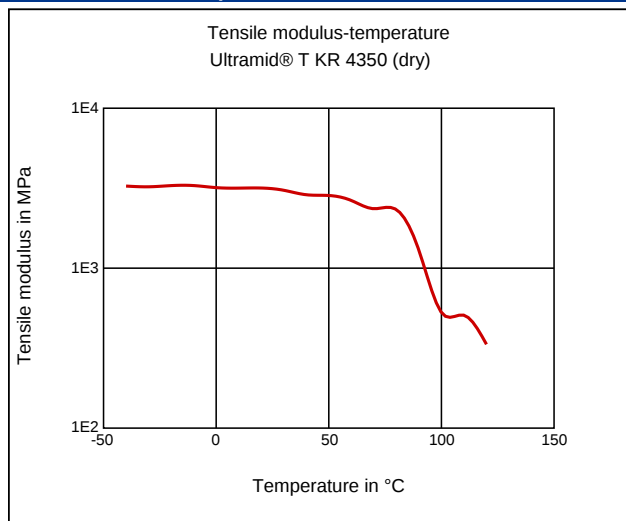
Creep modulus-time 160 °C



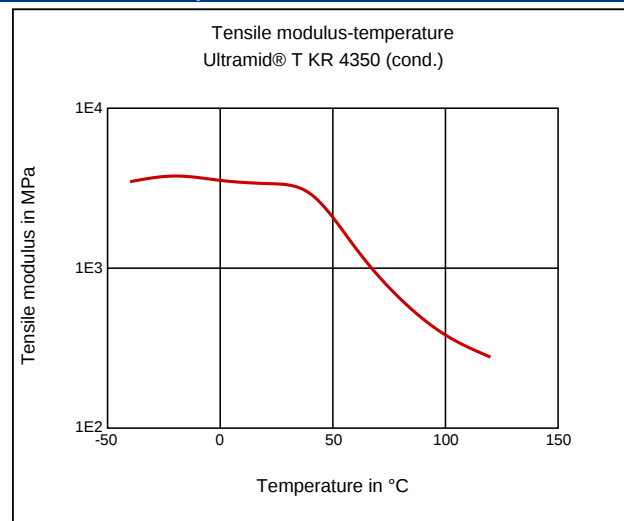
Specific volume-temperature (pvT)



Tensile Modulus-Temperature



Tensile Modulus-Temperature



Characteristics

Processing

Injection Molding, Other Extrusion

Delivery form

Pellets

Additives

Release agent

Special Characteristics

Heat aging stabilized

Injection Molding

PREPROCESSING

Pre/Post-processing, max. allowed water content: .15 %

Pre/Post-processing, Pre-drying, Temperature: 110 °C

Pre/Post-processing, Pre-drying, Time: 8 h

PROCESSING

injection molding, Melt temperature, range: 310 - 330 °C

injection molding, Melt temperature, recommended: 315 °C

injection molding, Mold temperature, range: 70 - 100 °C

injection molding, Mold temperature, recommended: 90 °C

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injection molding, Dwell time, thermoplastics: 5 min

Other Extrusion

PREPROCESSING

Pre/Post-processing, max. allowed water content: .15 %

Pre/Post-processing, Pre-drying, Temperature: 110 °C

Pre/Post-processing, Pre-drying, Time: 8 h

PROCESSING

Extrusion, Prepreg, Melt temperature: 310 - 340 °C

Chemical Media Resistance

Acids

- ✓ Acetic Acid (5% by mass) (23°C)