

Ultramid® T KR 4365 G5

PPA-GF25 FR(52)

BASF

A glass fibre reinforced, flame retardant, partially aromatic polyamide for injection molding. Good mechanical properties, low water absorption, high melting point (295°C). High tracking resistance, low tendency to form deposits on electrical contacts, very resistant to electrolytic corrosion, resistant to soldering temperatures, can be electroplated.

Rheological properties	dry / cond	Unit	Test Standard
ISO Data			
Molding shrinkage, parallel	0.6 / *	%	ISO 294-4, 2577
Molding shrinkage, normal	1.0 / *	%	ISO 294-4, 2577

Mechanical Properties	dry / cond	Unit	Test Standard
ISO Data			
Tensile Modulus	8300 / 8000	MPa	ISO 527
Stress at Break	150 / -	MPa	ISO 527
Strain at Break	3 / -	%	ISO 527
Tensile Creep Modulus, 1000h	* / 6400	MPa	ISO 899-1
Impact Strength (Charpy), +23°C	70 / 55	kJ/m²	ISO 179/1eU
Notched Impact Strength (Charpy), +23°C	8 / 7	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)	220 / *	°C	ISO 75-1/-2
Vicat softening temperature, 50°C/h 50N	285 / *	°C	ISO 306
Coeff. of Linear Therm. Expansion, parallel	24 / *	E-6/K	ISO 11359-1/-2
Coeff. of Linear Therm. Expansion, normal	67 / *	E-6/K	ISO 11359-1/-2
Burning Behav. at 1.5 mm Nom. Thickn.	V-0 / *	class	UL 94
Thickness tested	1.6 / *	mm	-
UL recognition	yes / *	-	-
Burning Behav. at thickness h	V-0 / *	class	UL 94
Thickness tested	0.8 / *	mm	-
UL recognition	yes / *	-	-
Burning Behav. 5V at Thickness h	5VA / *	class	IEC 60695-11-20
Thickness tested	1.5 / *	mm	-
Yellow Card available	yes / *	-	-
Oxygen index	26 / *	%	ISO 4589-1/-2

Electrical Properties	dry / cond	Unit	Test Standard
ISO Data			
Relative permittivity, 1MHz	4 / -	-	IEC 62631-2-1
Dissipation Factor, 1MHz	200 / -	E-4	IEC 62631-2-1
Volume Resistivity	1E13 / 1E12	Ohm*m	IEC 62631-3-1
Surface Resistivity	* / 1E14	Ohm	IEC 62631-3-2
Electric Strength	37 / 33	kV/mm	IEC 60243-1
Comparative tracking index	- / 600	-	IEC 60112

Other Properties	dry / cond	Unit	Test Standard
ISO Data			
Water Absorption	5.5 / *	%	Sim. to ISO 62
Humidity absorption	1.3 / *	%	Sim. to ISO 62
Density	1380 / -	kg/m³	ISO 1183

Material Specific Properties	dry / cond	Unit	Test Standard
ISO Data			
Viscosity number	130 / *	cm³/g	ISO 307, 1157, 1628

Test specimen production	Value	Unit	Test Standard
ISO Data			
Injection Molding, melt temperature	320	°C	ISO 294
Injection Molding, mold temperature	100	°C	ISO 294
Injection Molding, injection velocity	200	mm/s	ISO 294

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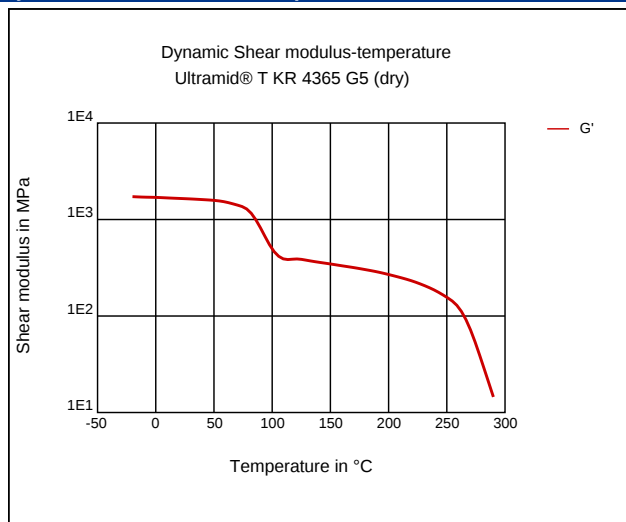
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Processing Recommendation Injection Molding

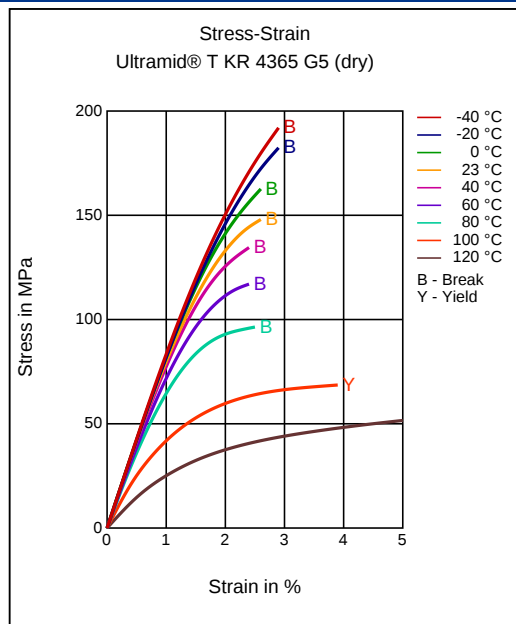
	Value	Unit	Test Standard
Pre-drying - Temperature	110	°C	-
Pre-drying - Time	8	h	-
Melt temperature	310 - 330	°C	-
Mold temperature	80 - 120	°C	-

Diagrams

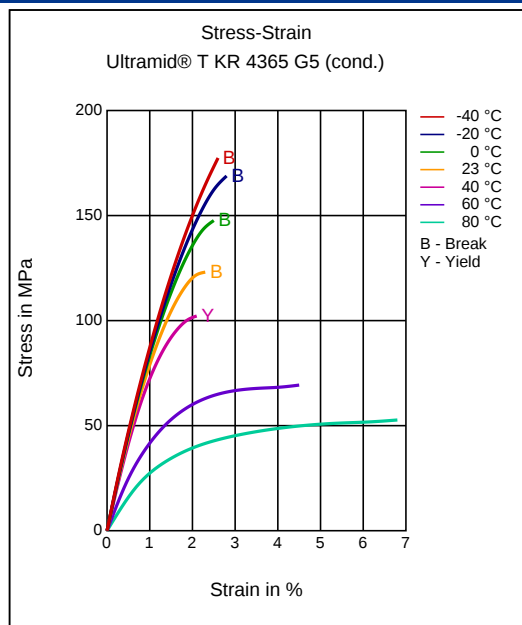
Dynamic Shear modulus-temperature



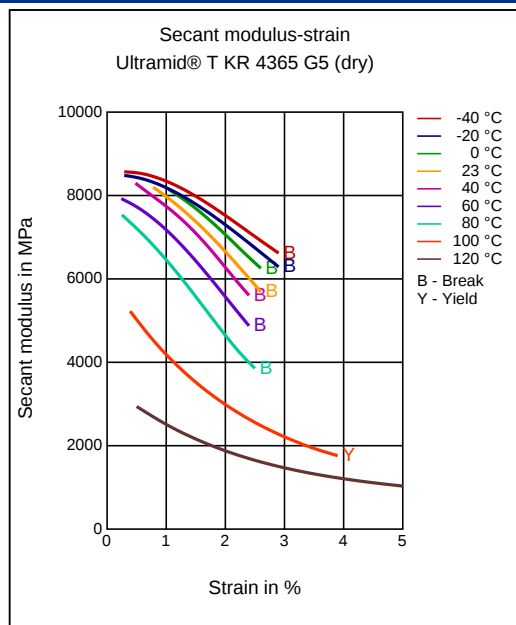
Stress-strain



Stress-strain



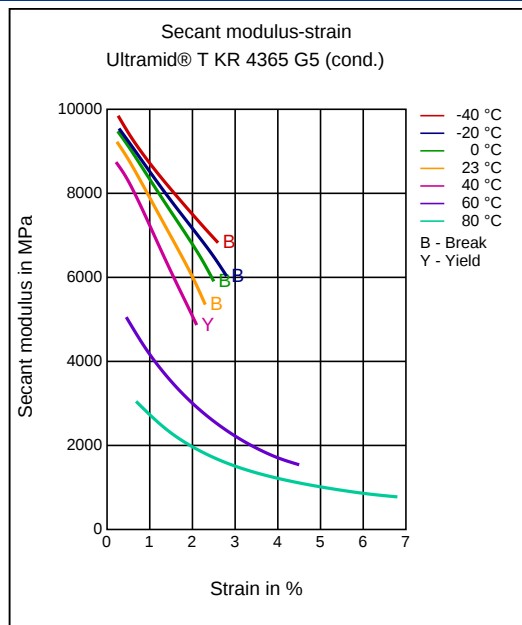
Secant modulus-strain



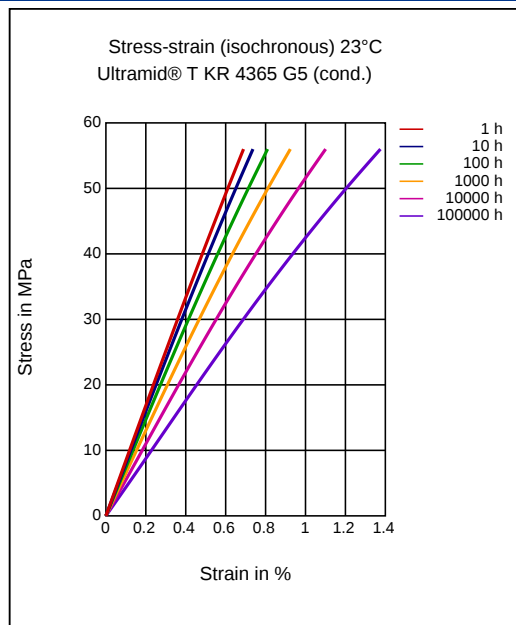
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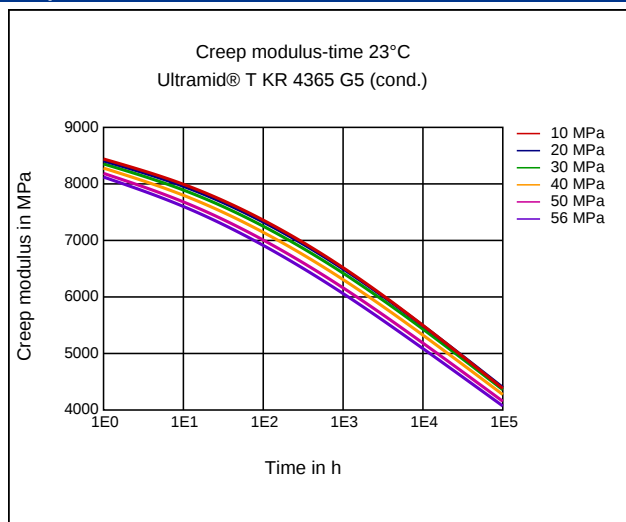
Secant modulus-strain



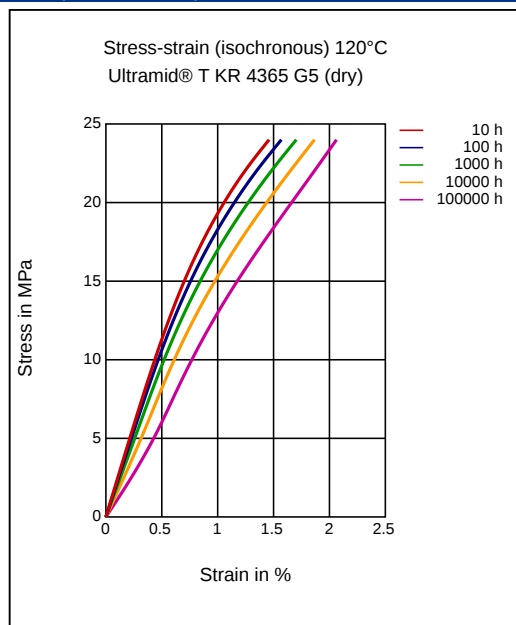
Stress-strain (isochronous) 23 °C



Creep modulus-time 23 °C



Stress-strain (isochronous) 120 °C

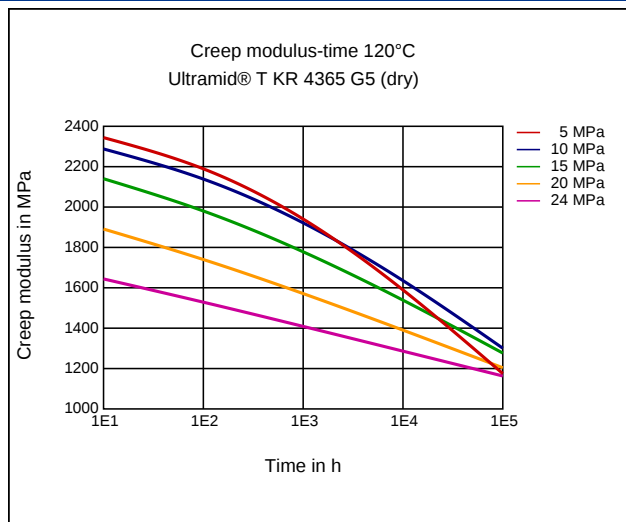


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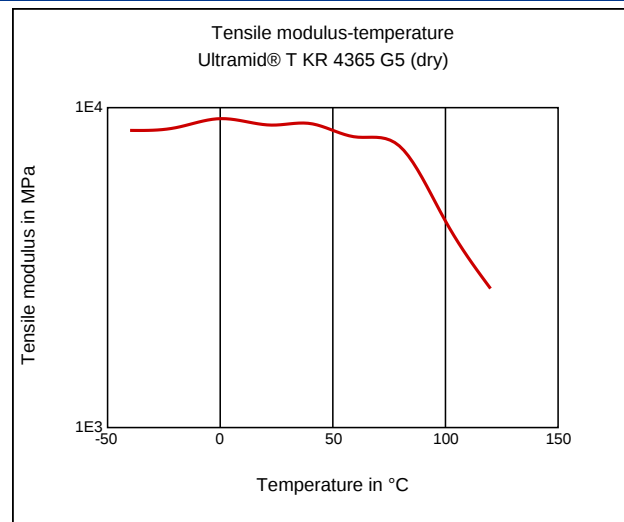
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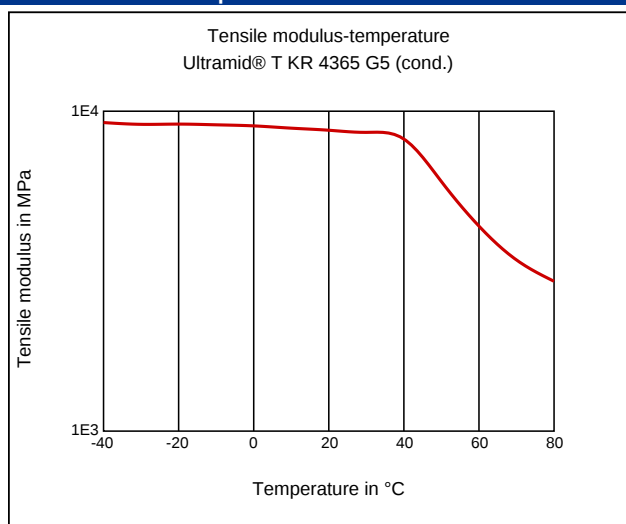
Creep modulus-time 120 °C



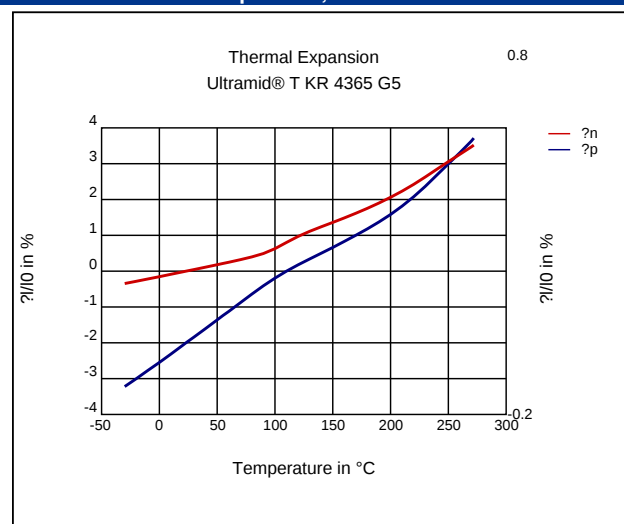
Tensile Modulus-Temperature



Tensile Modulus-Temperature



Coeff. of linear thermal expansion, normal



Characteristics

Processing

Injection Molding

Delivery form

Pellets

Additives

Release agent

Special Characteristics

Flame retardant, Halogen-free, Heat aging stabilized

Injection Molding

PREPROCESSING

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: 320 °C

injection molding, Mold temperature, range: 80 - 120 °C

injection molding, Mold temperature, recommended: 100 °C

injection molding, Dwell time, thermoplastics: 5 min

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Chemical Media Resistance

Acids

✓ Acetic Acid (5% by mass) (23°C)