

Ultradur® B 4300 K4
PBT-GB20

BASF

Injection molding grade with 20 % glass beads for low-warpage technical parts (e.g. precision parts for optical equipment, fuel level sensors, gas meter housings).

Abbreviated designation according to ISO 1043: PBT-GB20

Rheological properties	Value	Unit	Test Standard
ISO Data			
Melt volume-flow rate, MVR	16	cm³/10min	ISO 1133
Temperature	250	°C	-
Load	2.16	kg	-
Molding shrinkage, parallel	1.9	%	ISO 294-4, 2577
Molding shrinkage, normal	1.9	%	ISO 294-4, 2577

Mechanical Properties	Value	Unit	Test Standard
ISO Data			
Tensile Modulus	3500	MPa	ISO 527
Stress at Break	48	MPa	ISO 527
Strain at Break	6	%	ISO 527
Tensile Creep Modulus, 1000h	1300	MPa	ISO 899-1
Impact Strength (Charpy), +23°C	35	kJ/m²	ISO 179/1eU
Impact Strength (Charpy), -30°C	26	kJ/m²	ISO 179/1eU
Notched Impact Strength (Charpy), +23°C	3	kJ/m²	ISO 179/1eA

Thermal Properties	Value	Unit	Test Standard
ISO Data			
Melting Temperature (10°C/min)	223	°C	ISO 11357-1/-3
Temp. of deflection under load (1.80 MPa)	65	°C	ISO 75-1/-2
Temp. of deflection under load (0.45 MPa)	170	°C	ISO 75-1/-2
Coeff. of Linear Therm. Expansion, parallel	100	E-6/K	ISO 11359-1/-2
Coeff. of Linear Therm. Expansion, normal	100	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	0.8	mm	-
UL recognition	yes	-	-
Oxygen index	23	%	ISO 4589-1/-2

Electrical Properties	Value	Unit	Test Standard
ISO Data			
Relative permittivity, 100Hz	4	-	IEC 62631-2-1
Relative permittivity, 1MHz	3.7	-	IEC 62631-2-1
Dissipation Factor, 100Hz	12	E-4	IEC 62631-2-1
Dissipation Factor, 1MHz	190	E-4	IEC 62631-2-1
Volume Resistivity	>1E13	Ohm*m	IEC 62631-3-1
Surface Resistivity	1E13	Ohm	IEC 62631-3-2
Electric Strength	37	kV/mm	IEC 60243-1
Comparative tracking index	250	-	IEC 60112

Other Properties	Value	Unit	Test Standard
ISO Data			
Water Absorption	0.4	%	Sim. to ISO 62
Humidity absorption	0.2	%	Sim. to ISO 62
Density	1450	kg/m³	ISO 1183

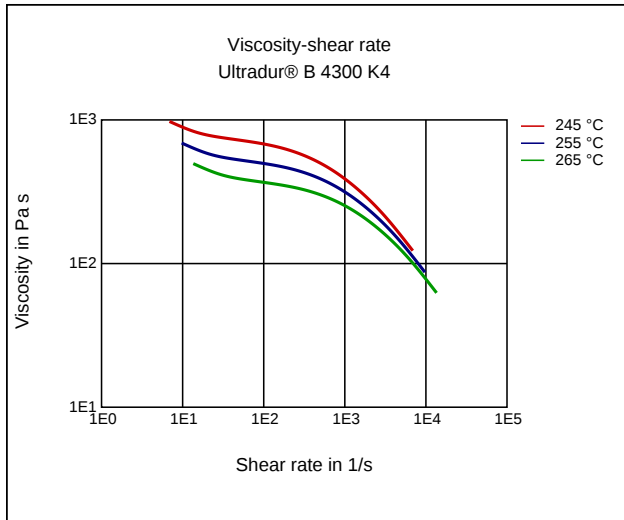
Material Specific Properties	Value	Unit	Test Standard
ISO Data			
Viscosity number	115	cm³/g	ISO 307, 1157, 1628

Test specimen production	Value	Unit	Test Standard
ISO Data			
Injection Molding, melt temperature	250	°C	ISO 294
Injection Molding, mold temperature	60	°C	ISO 294
Injection Molding, injection velocity	200	mm/s	ISO 294

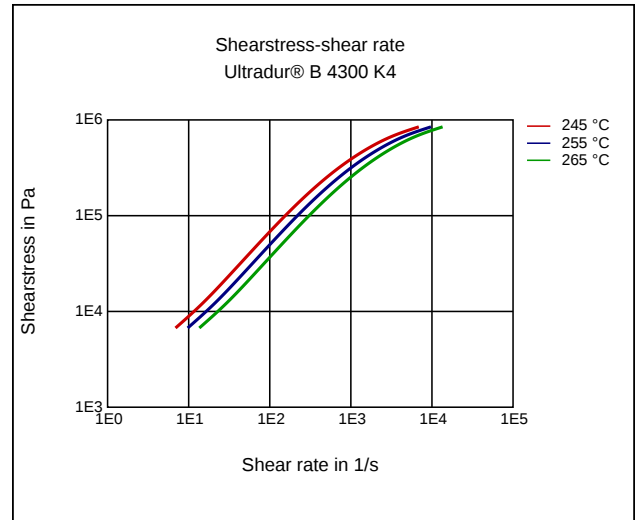
Processing Recommendation Injection Molding	Value	Unit	Test Standard
Pre-drying - Temperature	80 - 120	°C	-
Pre-drying - Time	4	h	-
Processing humidity	≤0.04	%	-
Melt temperature	250 - 275	°C	-
Mold temperature	40 - 80	°C	-

Diagrams

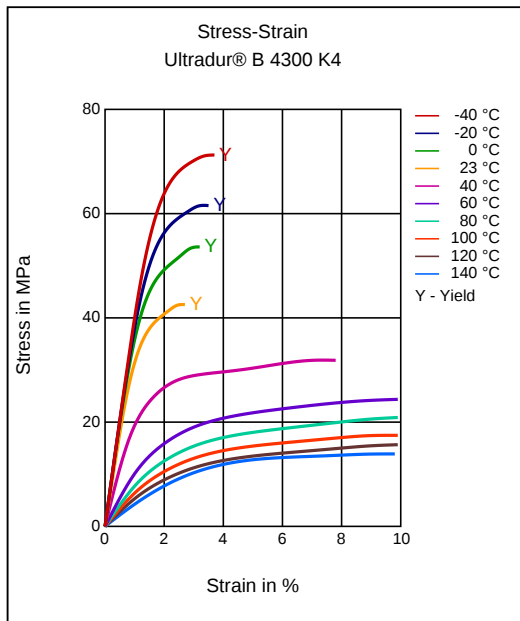
Viscosity-shear rate



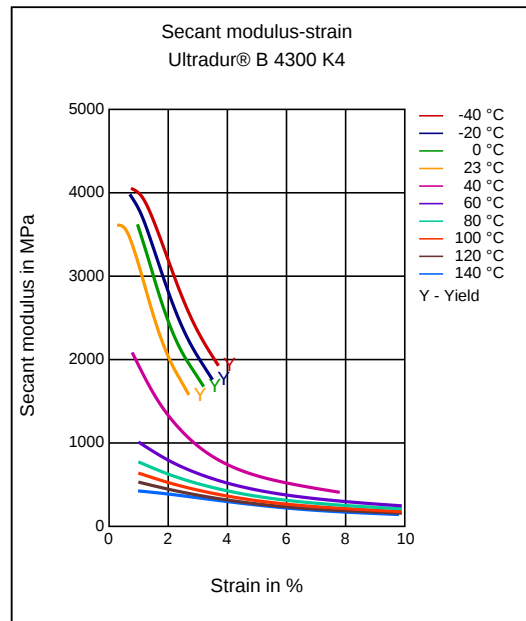
Shearstress-shear rate



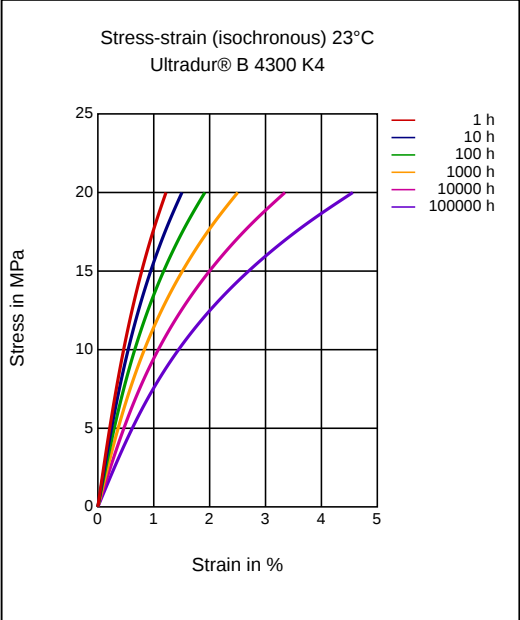
Stress-strain



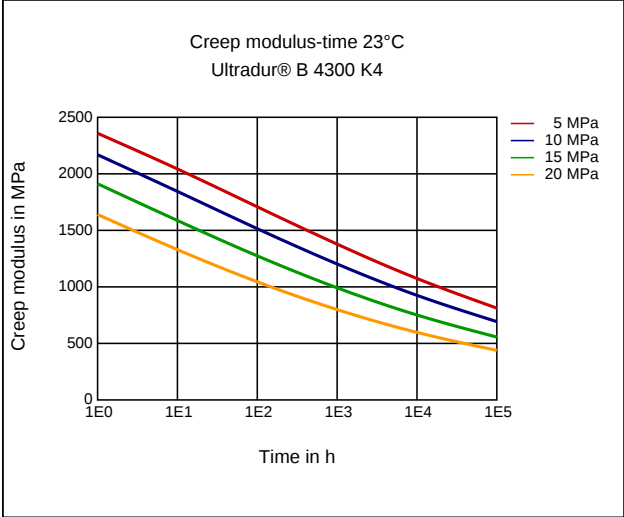
Secant modulus-strain



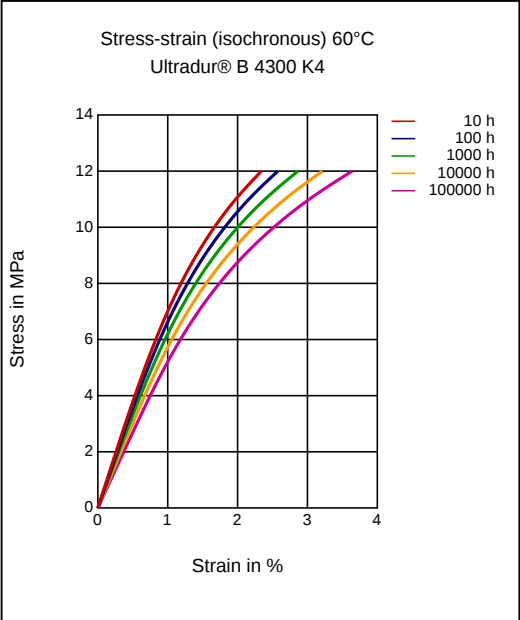
Stress-strain (isochronous) 23 °C



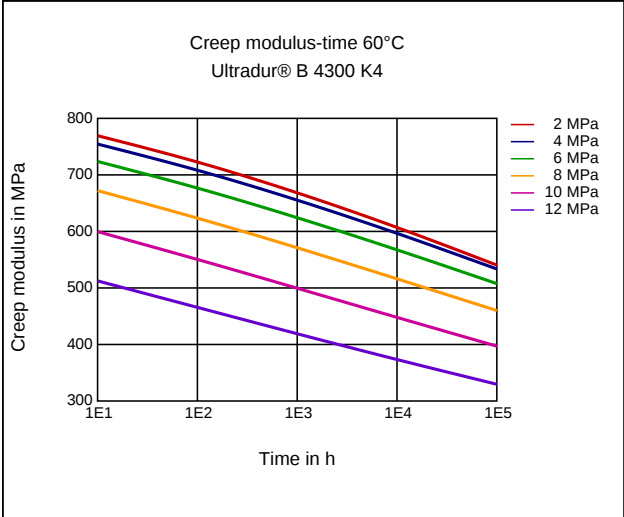
Creep modulus-time 23 °C



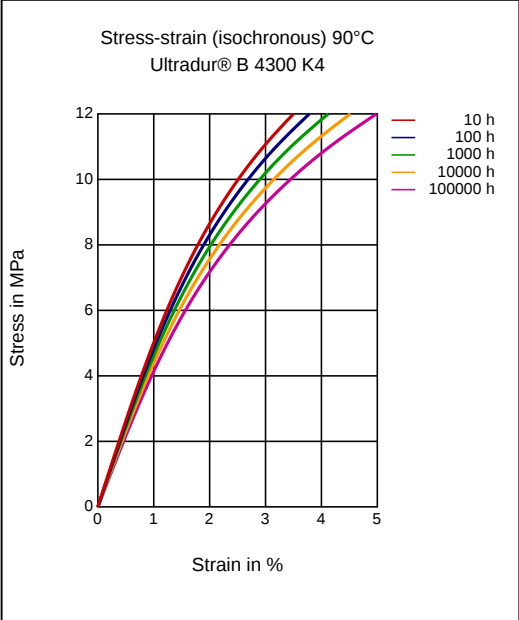
Stress-strain (isochronous) 60 °C



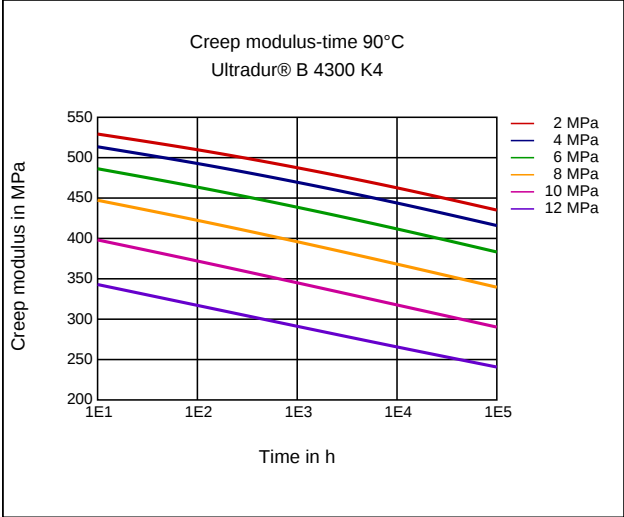
Creep modulus-time 60 °C



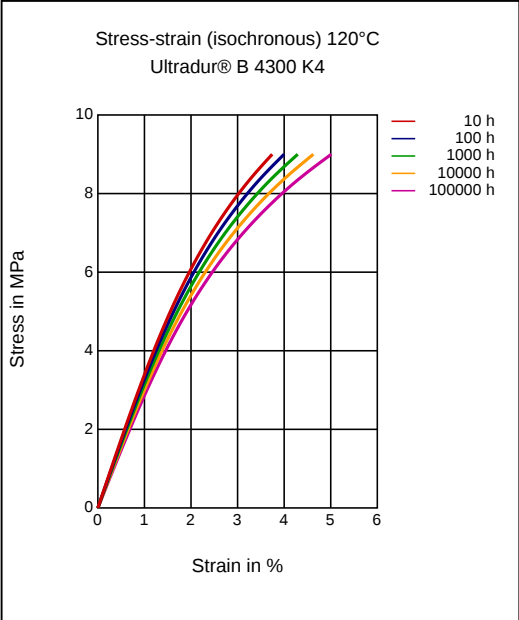
Stress-strain (isochronous) 90 °C



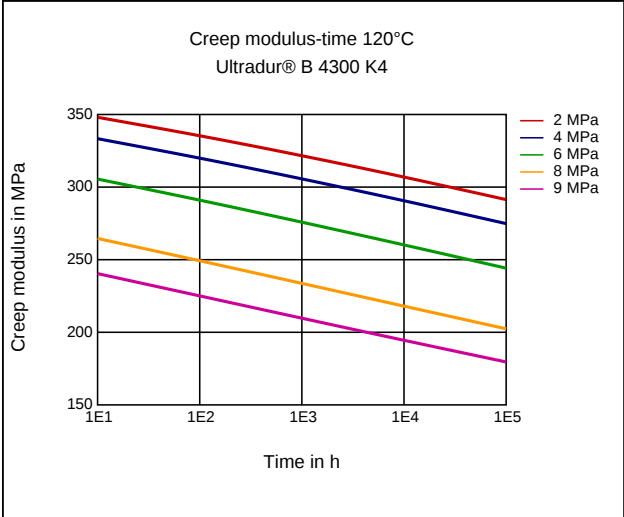
Creep modulus-time 90 °C



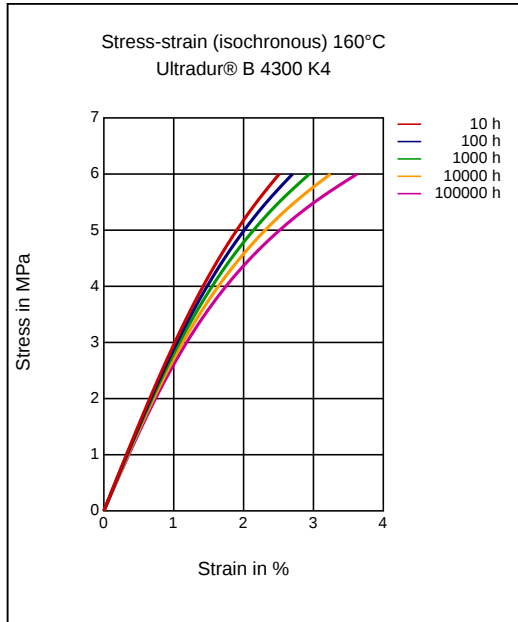
Stress-strain (isochronous) 120 °C



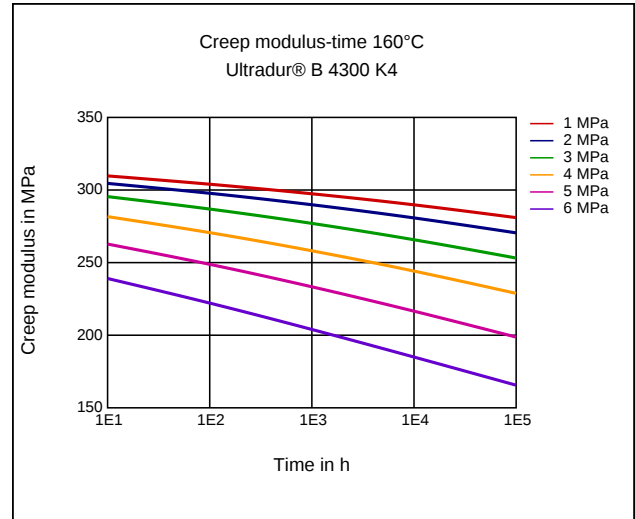
Creep modulus-time 120 °C



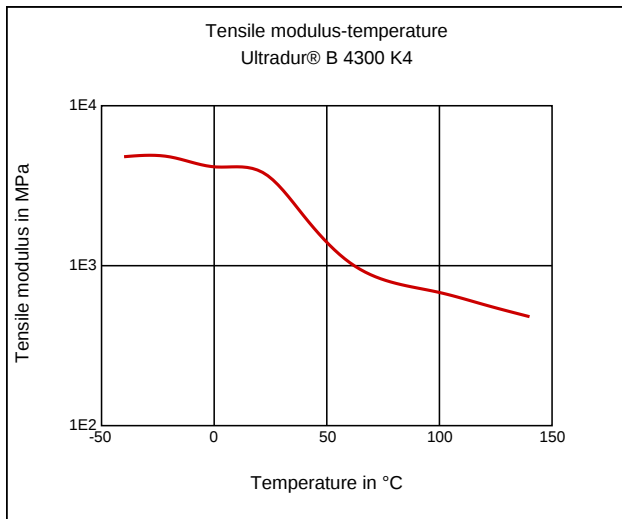
Stress-strain (isochronous) 160 °C



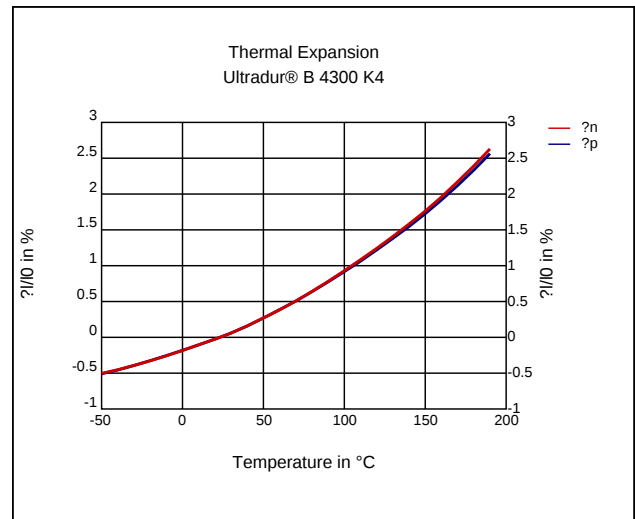
Creep modulus-time 160 °C



Tensile Modulus-Temperature



Coeff. of linear thermal expansion, normal



Characteristics

Processing

Injection Molding

Delivery form

Pellets

Additives

Lubricants

Special Characteristics

Light stabilized or stable to light, UV stabilized, Heat aging stabilized

Injection Molding

PREPROCESSING

Pre/Post-processing, max. allowed water content: .04 %

Pre/Post-processing, Pre-drying, Temperature: 80 - 120 °C

Pre/Post-processing, Pre-drying, Time: 4 h

PROCESSING

injection molding, Melt temperature, range: 250 - 275 °C
injection molding, Melt temperature, recommended: 250 °C
injection molding, Mold temperature, range: 40 - 80 °C
injection molding, Mold temperature, recommended: 60 °C

Chemical Media Resistance

Acids

✓ Acetic Acid (5% by mass) (23°C)

Disclaimer

Liability Exclusion

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