

Ultradur® S 4090 G2 (PBT+ASA+PET)-GF10

BASF

Low-warpage injection molding grade with 10 % glass fibres for technical parts, for which dimensional stability is very important (e.g. housings, plug-and-socket connectors).

Abbreviated designation according to ISO 1043: PBT ASA PET GF10

Rheological properties	Value	Unit	Test Standard
ISO Data			
Melt volume-flow rate, MVR	20	cm³/10min	ISO 1133
Temperature	275	°C	-
Load	2.16	kg	-

Mechanical Properties	Value	Unit	Test Standard
ISO Data			
Tensile Modulus	4500	MPa	ISO 527
Stress at Break	75	MPa	ISO 527
Strain at Break	2.9	%	ISO 527
Tensile Creep Modulus, 1h	3500	MPa	ISO 899-1
Tensile Creep Modulus, 1000h	3300	MPa	ISO 899-1
Impact Strength (Charpy), +23°C	37	kJ/m²	ISO 179/1eU
Impact Strength (Charpy), -30°C	24	kJ/m²	ISO 179/1eU
Notched Impact Strength (Charpy), +23°C	4	kJ/m²	ISO 179/1eA
Notched Impact Strength (Charpy), -30°C	3.2	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)	105	°C	ISO 75-1/-2
Temp. of deflection under load (0.45 MPa)	190	°C	ISO 75-1/-2
Vicat softening temperature, 50°C/h 50N	150	°C	ISO 306
Coeff. of Linear Therm. Expansion, parallel	50	E-6/K	ISO 11359-1/-2
Coeff. of Linear Therm. Expansion, normal	80	E-6/K	ISO 11359-1/-2
Burning Behav. at 1.5 mm Nom. Thickn.	HB	class	UL 94
Thickness tested	1.5	mm	-
Burning Behav. at thickness h	HB	class	UL 94
Thickness tested	0.8	mm	-

Electrical Properties	Value	Unit	Test Standard
ISO Data			
Relative permittivity, 100Hz	3.6	-	IEC 62631-2-1
Relative permittivity, 1MHz	3.4	-	IEC 62631-2-1
Dissipation Factor, 100Hz	31	E-4	IEC 62631-2-1
Dissipation Factor, 1MHz	205	E-4	IEC 62631-2-1
Volume Resistivity	>1E13	Ohm*m	IEC 62631-3-1
Surface Resistivity	1E14	Ohm	IEC 62631-3-2
Electric Strength	39	kV/mm	IEC 60243-1
Comparative tracking index	375	-	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	1310	kg/m³	ISO 1183

Material Specific Properties	Value	Unit	Test Standard
ISO Data			
Viscosity number	105	cm³/g	ISO 307, 1157, 1628

Rheological calculation properties	Value	Unit	Test Standard
ISO Data			
Density of melt	1090	kg/m³	-
Thermal Conductivity of Melt	0.165	W/(m K)	-

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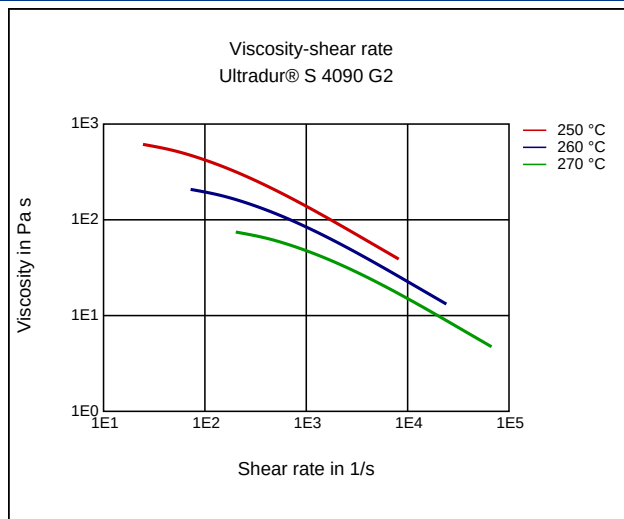
Spec. heat capacity of melt	2060	J/(kg K)	-
Ejection temperature	160	°C	-

Test specimen production	Value	Unit	Test Standard
ISO Data			
Injection Molding, melt temperature	270	°C	ISO 294
Injection Molding, mold temperature	80	°C	ISO 294
Injection Molding, injection velocity	200	mm/s	ISO 294

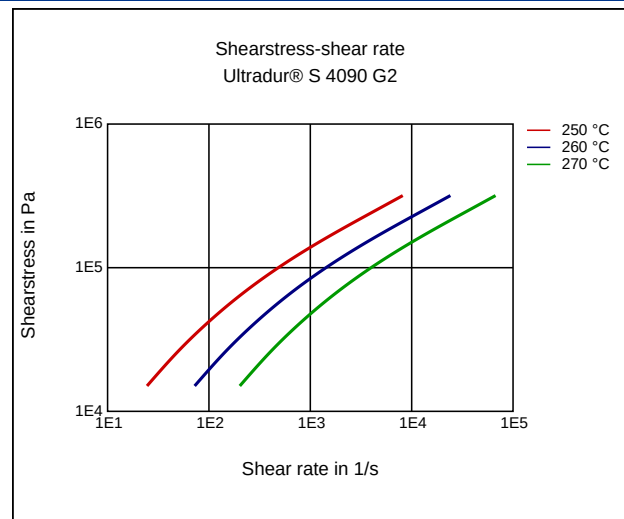
Processing Recommendation Injection Molding	Value	Unit	Test Standard
Pre-drying - Temperature	80 - 120	°C	-
Pre-drying - Time	4	h	-
Processing humidity	≤0.04	%	-
Melt temperature	250 - 275	°C	-
Mold temperature	60 - 100	°C	-

Diagrams

Viscosity-shear rate



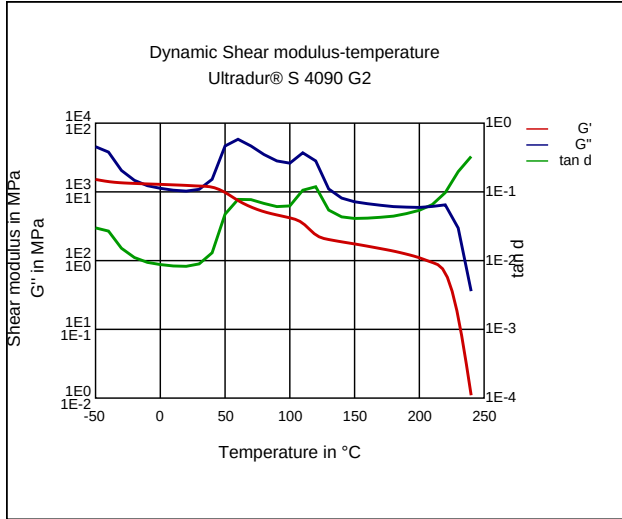
Shearstress-shear rate



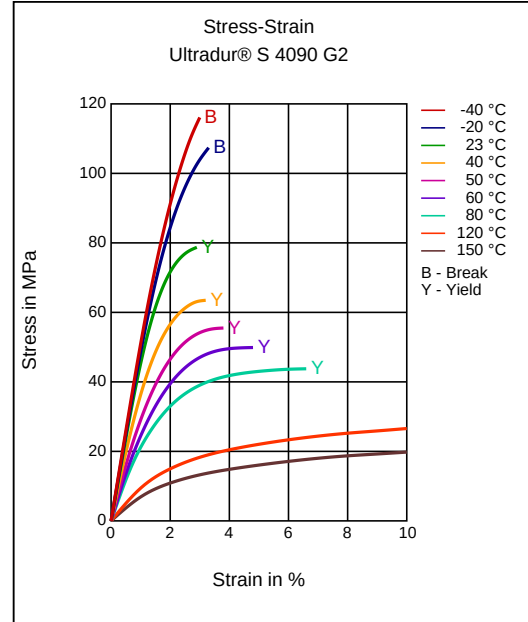
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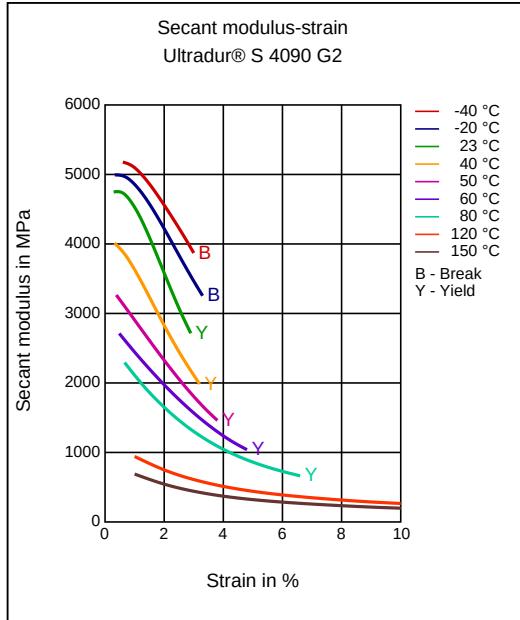
Dynamic Shear modulus-temperature



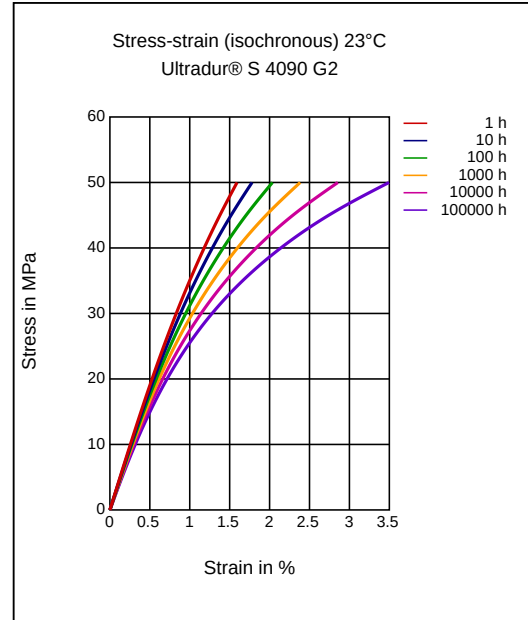
Stress-strain



Secant modulus-strain



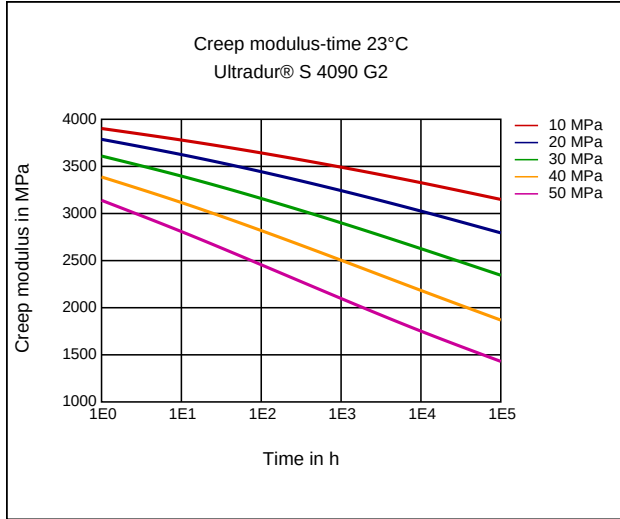
Stress-strain (isochronous) 23 °C



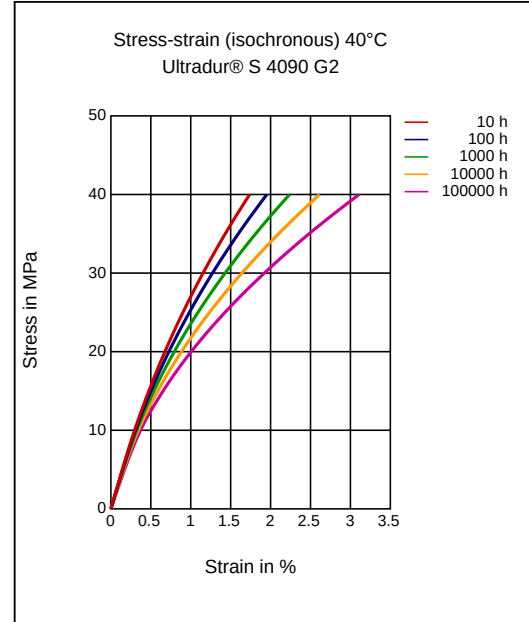
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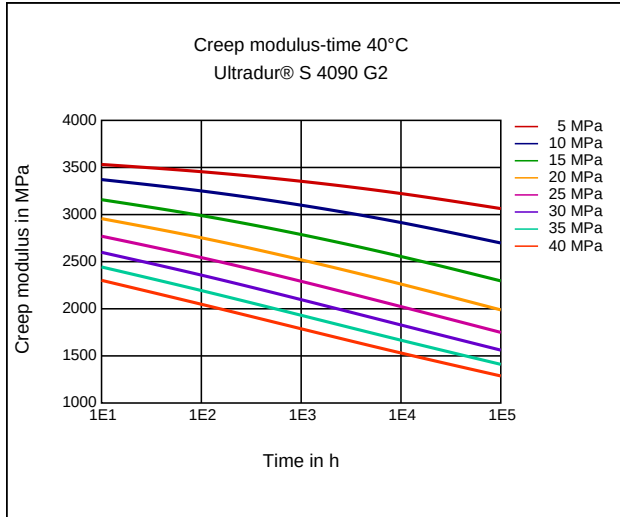
Creep modulus-time 23°C



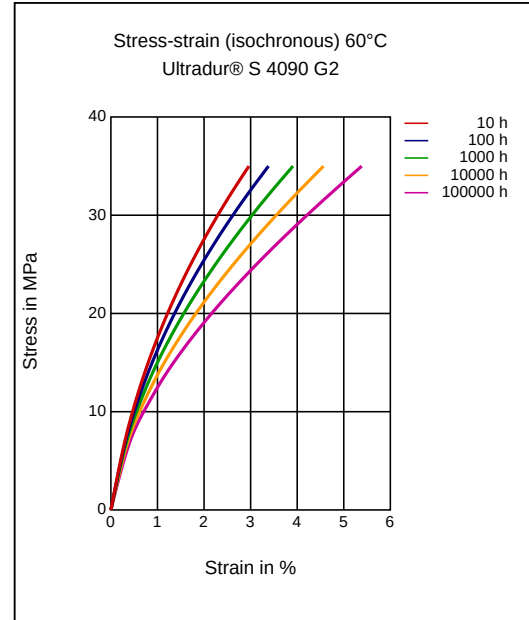
Stress-strain (isochronous) 40°C



Creep modulus-time 40°C



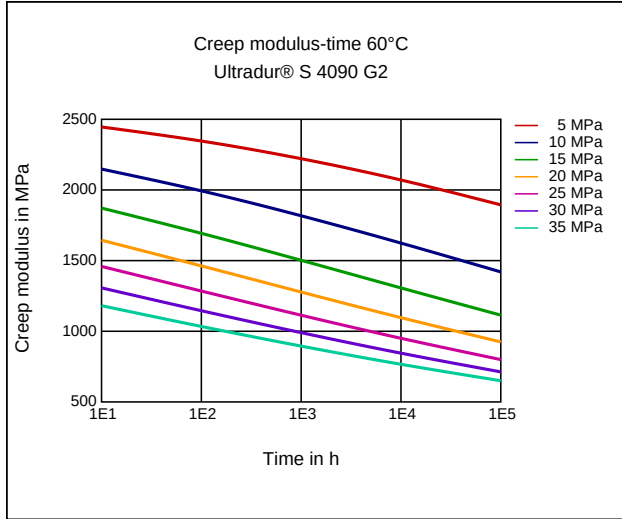
Stress-strain (isochronous) 60°C



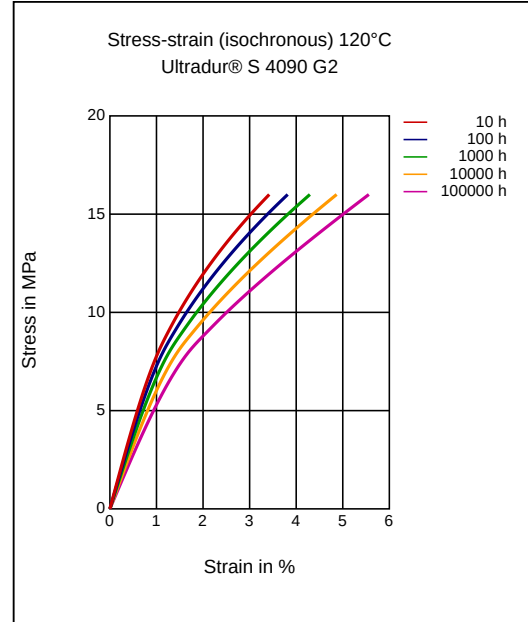
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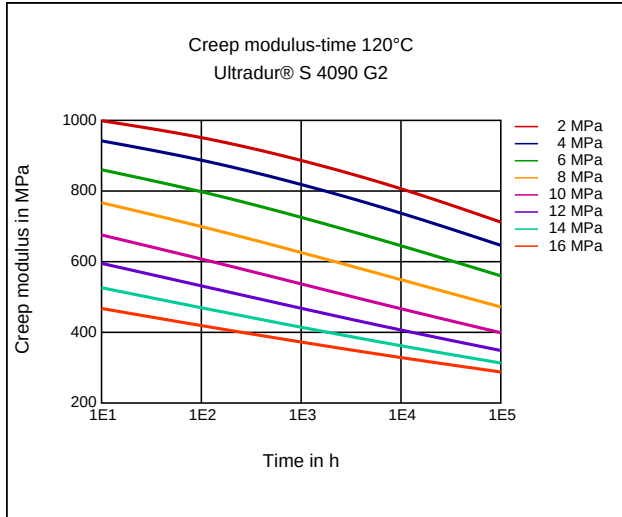
Creep modulus-time 60°C



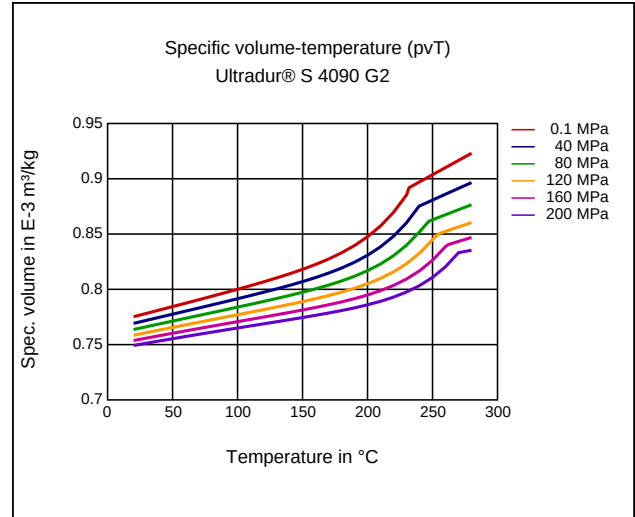
Stress-strain (isochronous) 120°C



Creep modulus-time 120°C



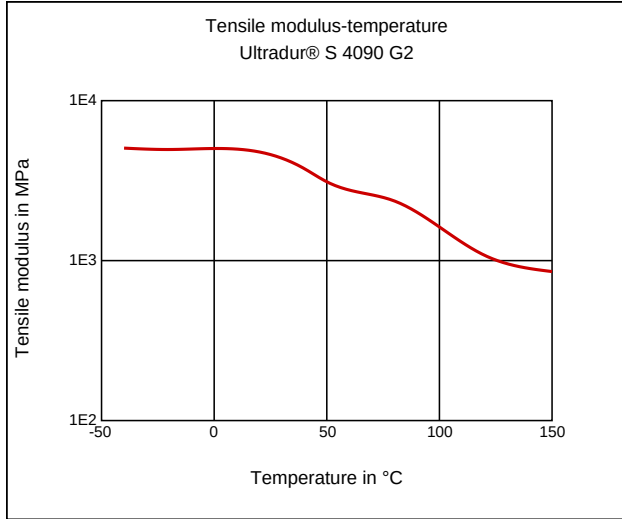
Specific volume-temperature (pvT)



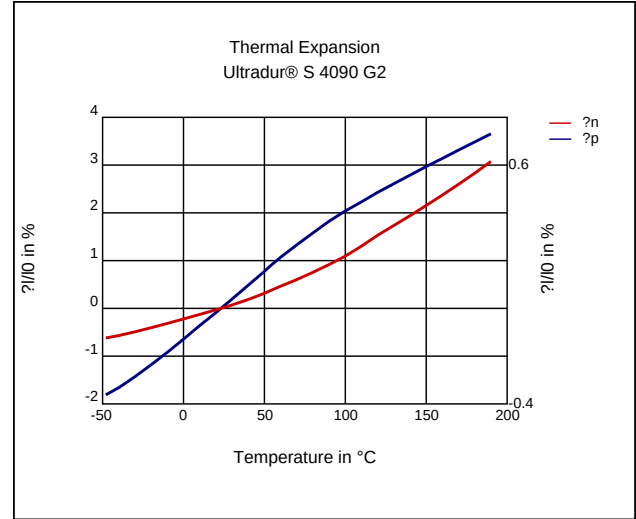
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Tensile Modulus-Temperature



Coeff. of linear thermal expansion, normal



Characteristics

Processing

Injection Molding

Delivery form

Pellets

Additives

Lubricants

Special Characteristics

Light stabilized or stable to light, UV stablized, 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: 270 °C
injection molding, Mold temperature, range: 60 - 100 °C
injection molding, Mold temperature, recommended: 80 °C

Chemical Media Resistance

Acids

✓ Acetic Acid (5% by mass) (23°C)