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BASF
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ALBIS

Ultradur® S 4090 GX

(PBT+ASA)-GF14 BASF

Low-warpage injection molding grade with 14 % 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-GF14

Rheological properties	Value	Unit	Test Standard
ISO Data			
Melt volume-flow rate, MVR	23	cm³/10min	ISO 1133
Temperature	275	°C	-
Load	2.16	kg	-
Molding shrinkage, parallel	0.5	%	ISO 294-4, 2577
Molding shrinkage, normal	0.8	%	ISO 294-4, 2577

Mechanical Properties	Value	Unit	Test Standard
ISO Data			
Tensile Modulus	5500	MPa	ISO 527
Stress at Break	95	MPa	ISO 527
Strain at Break	3.2	%	ISO 527
Impact Strength (Charpy), +23°C	52	kJ/m²	ISO 179/1eU
Impact Strength (Charpy), -30°C	43	kJ/m²	ISO 179/1eU
Notched Impact Strength (Charpy), +23°C	7	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)	170	°C	ISO 75-1/-2
Temp. of deflection under load (0.45 MPa)	210	°C	ISO 75-1/-2
Coeff. of Linear Therm. Expansion, parallel	45	E-6/K	ISO 11359-1/-2
Coeff. of Linear Therm. Expansion, normal	120	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	39	E-4	IEC 62631-2-1
Dissipation Factor, 1MHz	208	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	42	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	1330	kg/m³	ISO 1183

Material Specific Properties	Value	Unit	Test Standard
ISO Data			
Viscosity number	110	cm³/g	ISO 307, 1157, 1628

Rheological calculation properties	Value	Unit	Test Standard
ISO Data			
Density of melt	1130	kg/m³	-
Thermal Conductivity of Melt	0.17	W/(m K)	-
Spec. heat capacity of melt	1970	J/(kg K)	-
Ejection temperature	165	°C	-

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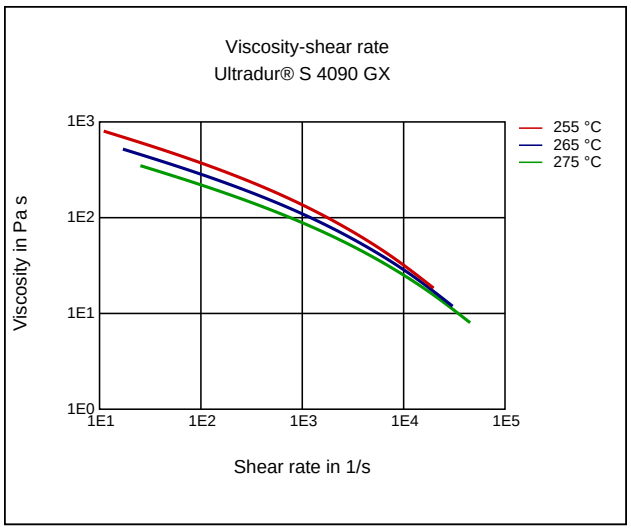
Test specimen production	Value	Unit	Test Standard
ISO Data			
Injection Molding, melt temperature	270	°C	ISO 294
Injection Molding, mold temperature	80	°C	ISO 294
Injection Molding, injection velocity	200	mm/s	ISO 294

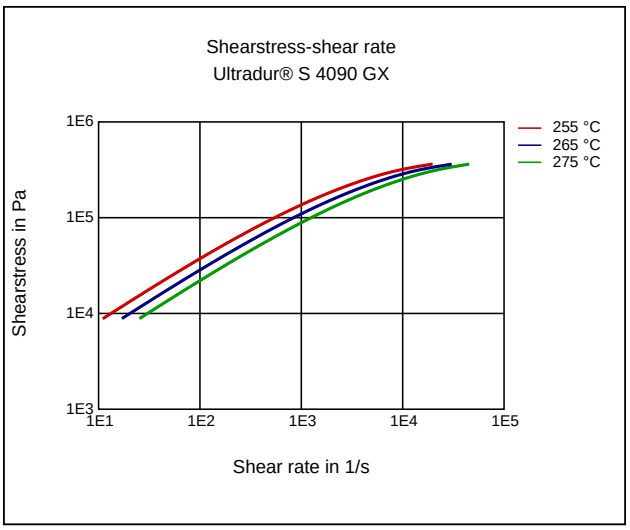
Processing Recommendation Injection Molding	Value	Unit	Test Standard
Pre-drying - Temperature	80 - 120	°C	-
Pre-drying - Time	4	h	-
Processing humidity	≤0.04	%	-
Melt temperature	250 - 275	°C	-
Mold temperature	60 - 100	°C	-

Diagrams

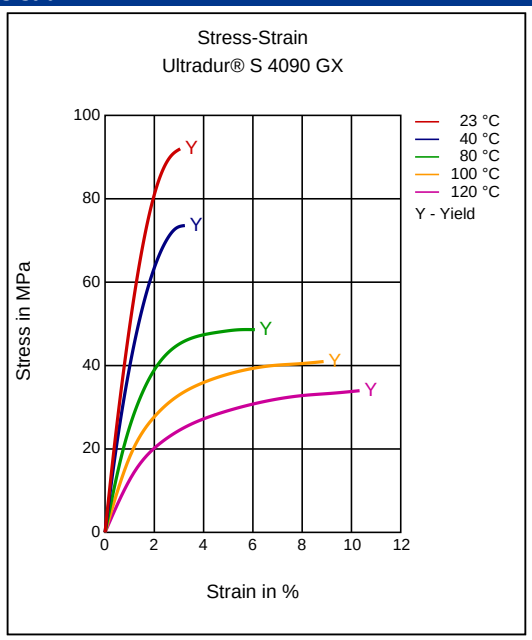
Viscosity-shear rate



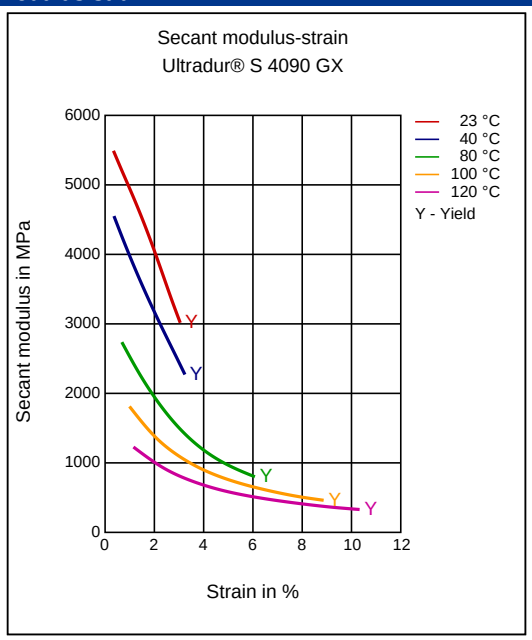
Shearstress-shear rate



Stress-strain



Secant modulus-strain



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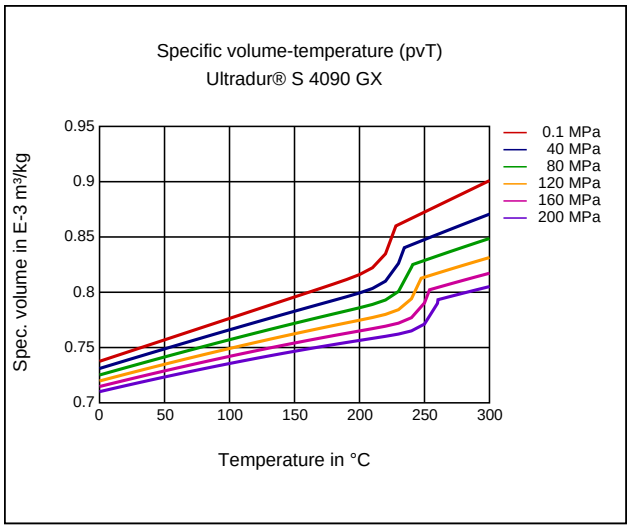
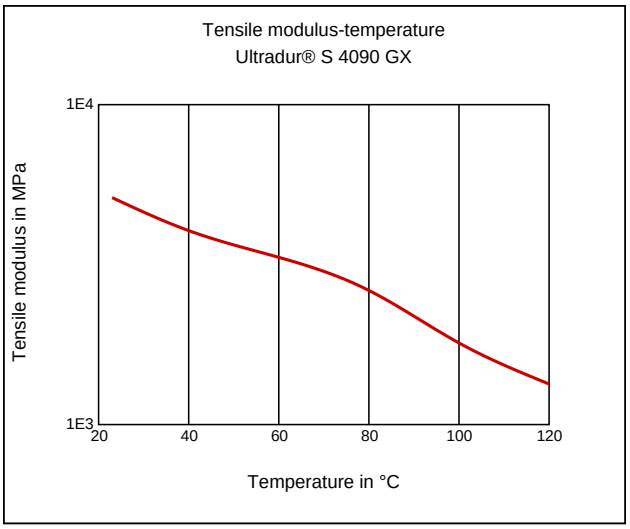
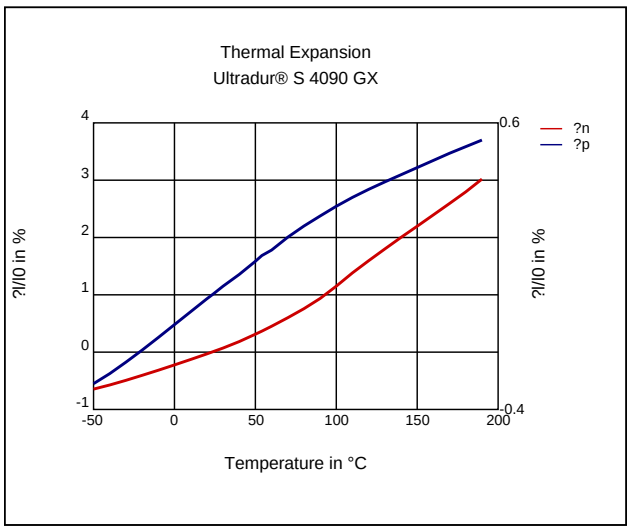
Specific volume-temperature (pvT)



Tensile Modulus-Temperature



Coeff. of linear thermal expansion, normal



Characteristics

Processing
Injection Molding

Additives
Lubricants

Delivery form
Pellets

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)