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BASF
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Ultradur® B 4040 G4

(PBT+PET)-GF20 BASF

Injection moulding grade with 20 % glass fibres for technical parts, with excellent surface quality for oven door handles, car door handles.

Abbreviated designation according to ISO 1043: PBT-PET-GF20

Rheological properties	Value	Unit	Test Standard
ISO Data			
Melt volume-flow rate, MVR	22	cm³/10min	ISO 1133
Temperature	275	°C	-
Load	2.16	kg	-
Molding shrinkage, parallel	0.4	%	ISO 294-4, 2577
Molding shrinkage, normal	0.9	%	ISO 294-4, 2577

Mechanical Properties	Value	Unit	Test Standard
ISO Data			
Tensile Modulus	7500	MPa	ISO 527
Stress at Break	120	MPa	ISO 527
Strain at Break	2.8	%	ISO 527
Impact Strength (Charpy), +23°C	40	kJ/m²	ISO 179/1eU
Impact Strength (Charpy), -30°C	40	kJ/m²	ISO 179/1eU
Notched Impact Strength (Charpy), +23°C	5.5	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)	180	°C	ISO 75-1/-2
Temp. of deflection under load (0.45 MPa)	215	°C	ISO 75-1/-2
Coeff. of Linear Therm. Expansion, parallel	35	E-6/K	ISO 11359-1/-2
Coeff. of Linear Therm. Expansion, normal	105	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	-	-

Electrical Properties	Value	Unit	Test Standard
ISO Data			
Relative permittivity, 100Hz	3.7	-	IEC 62631-2-1
Relative permittivity, 1MHz	3.5	-	IEC 62631-2-1
Dissipation Factor, 100Hz	14	E-4	IEC 62631-2-1
Dissipation Factor, 1MHz	180	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	36	kV/mm	IEC 60243-1
Comparative tracking index	300	-	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	1470	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	1240	kg/m³	-
Thermal Conductivity of Melt	0.175	W/(m K)	-
Spec. heat capacity of melt	1880	J/(kg K)	-

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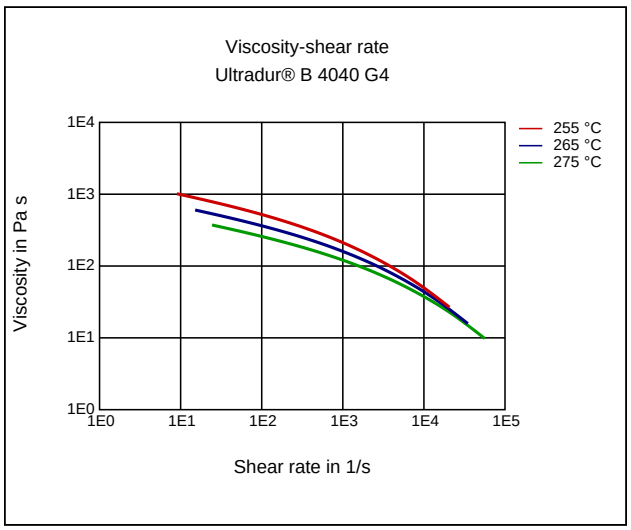
Ejection temperature	170	°C	-

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

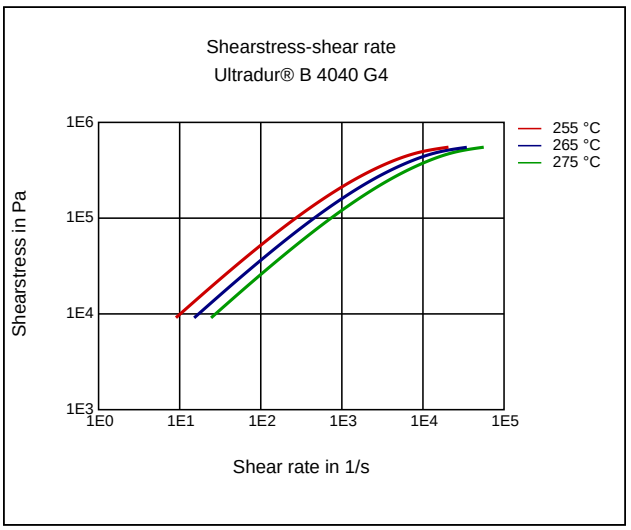
Processing Recommendation Injection Molding	Value	Unit	Test Standard
Pre-drying - Temperature	80 - 120	°C	-
Pre-drying - Time	4	h	-
Processing humidity	≤0.04	%	-
Melt temperature	250 - 280	°C	-
Mold temperature	60 - 100	°C	-

Diagrams

Viscosity-shear rate



Shearstress-shear rate



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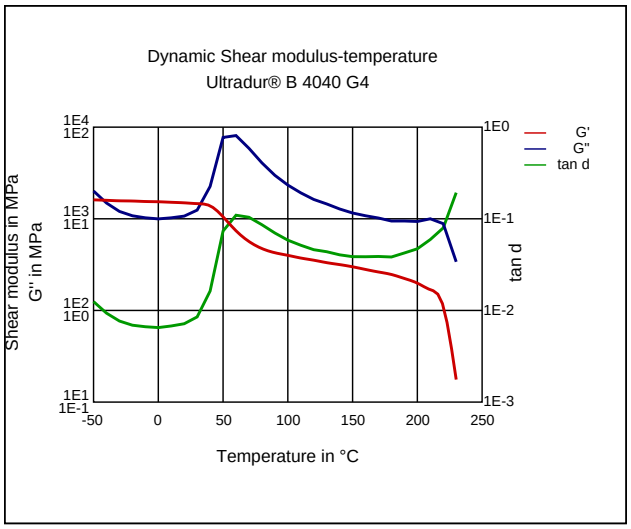
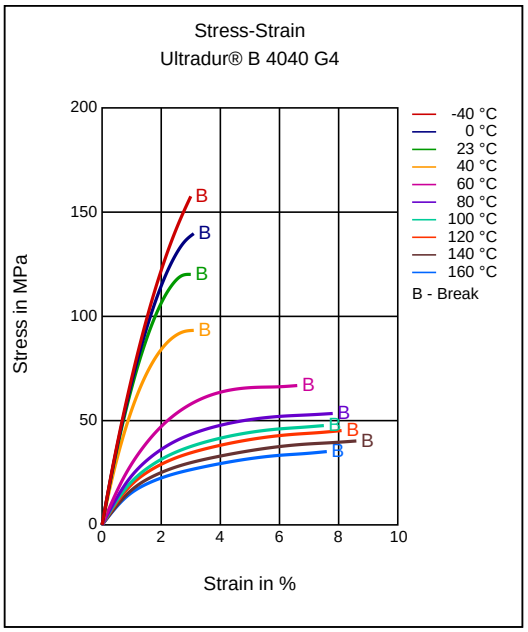
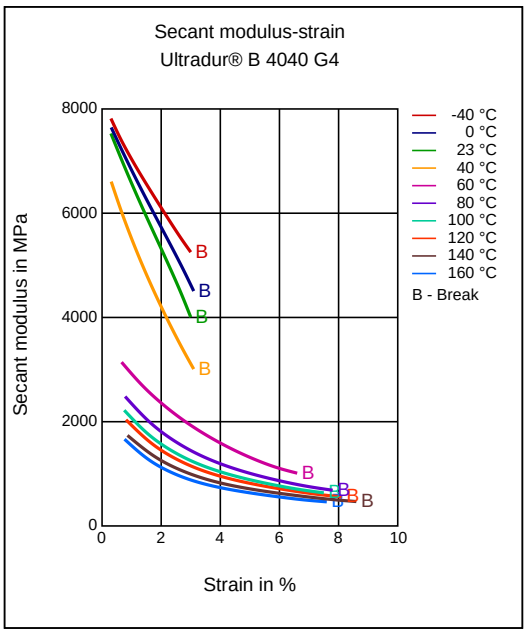
Dynamic Shear modulus-temperature



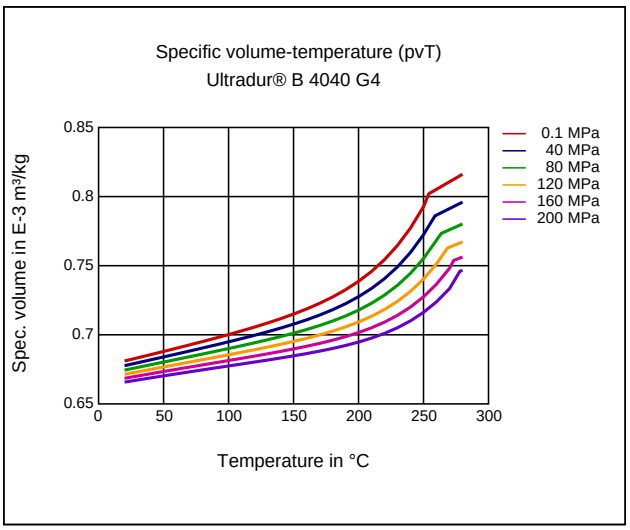
Stress-strain



Secant modulus-strain



Specific volume-temperature (pvT)



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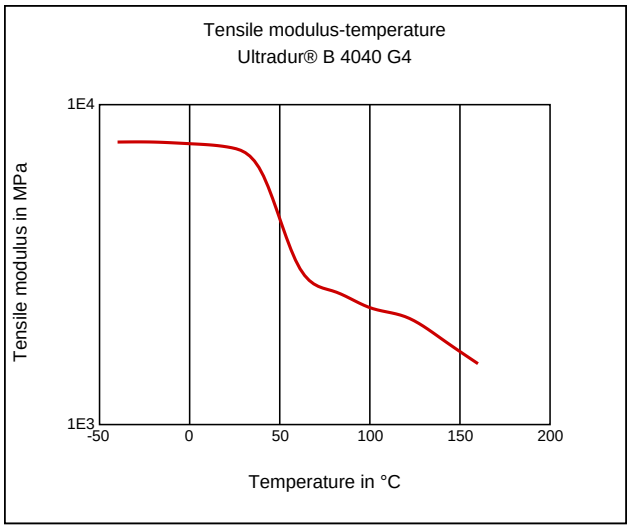
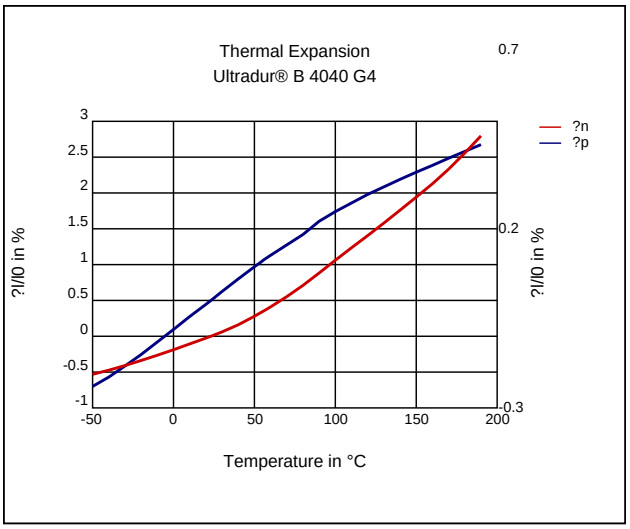
Tensile Modulus-Temperature



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 - 280 °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)