Ultradur® B 4441 G5

PBT-GF25 FR(40+30) BASF

Injection molding grade with 25 % glass fibres, for parts requiring enhanced fire resistance (eg components for household appliances, connectors, power switches), halogen and antimony free.
Abbreviated designation according to ISO 1043-1: PBT GF25 FR(40 30)

Rheological properties	Value	Unit	Test Standard
ISO Data			
Melt volume-flow rate, MVR	11	cm³/10min	ISO 1133
Temperature	275	°C	-
Load	2.16	kg	-
Molding shrinkage, parallel	0.4	%	ISO 294-4, 2577
Molding shrinkage, normal	1.2	%	ISO 294-4, 2577

Mechanical Properties	Value	Unit	Test Standard
ISO Data			
Tensile Modulus	9800	MPa	ISO 527
Stress at Break	100	MPa	ISO 527
Strain at Break	2.3	%	ISO 527
Impact Strength (Charpy), +23°C	45	kJ/m²	ISO 179/1eU
Impact Strength (Charpy), -30°C	47	kJ/m²	ISO 179/1eU
Notched Impact Strength (Charpy), +23°C	7	kJ/m²	ISO 179/1eA
Flexural Modulus (23°C)	10000	MPa	ISO 178

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)	210	°C	ISO 75-1/-2
Temp. of deflection under load (0.45 MPa)	220	°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	118	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	0.4	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	38	%	ISO 4589-1/-2

Electrical Properties	Value	Unit	Test Standard
ISO Data			
Relative permittivity, 100Hz	3.7	-	IEC 62631-2-1
Relative permittivity, 1MHz	3.6	-	IEC 62631-2-1
Dissipation Factor, 100Hz	35	E-4	IEC 62631-2-1
Dissipation Factor, 1MHz	137	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	38	kV/mm	IEC 60243-1
Comparative tracking index	525	-	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	1530	kg/m³	ISO 1183

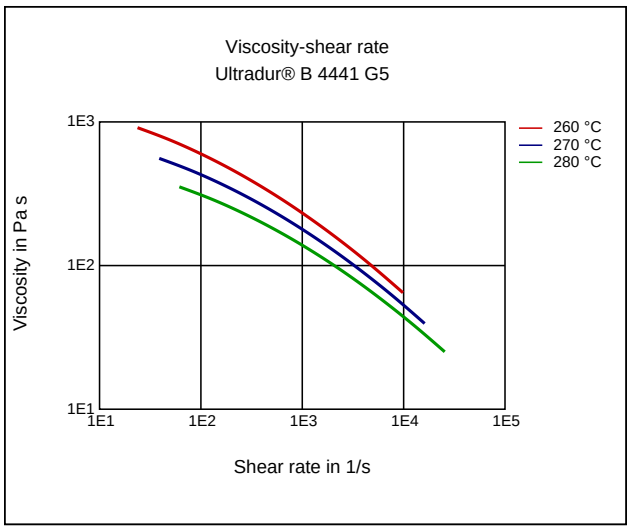
Material Specific Properties	Value	Unit	Test Standard
ISO Data			
Viscosity number	105	cm³/g	ISO 307, 1157, 1628

Test specimen production	Value	Unit	Test Standard
ISO Data			
Injection Molding, melt temperature	260	°C	ISO 294
Injection Molding, mold temperature	80	°C	ISO 294
Injection Molding, injection velocity	200	mm/s	ISO 294

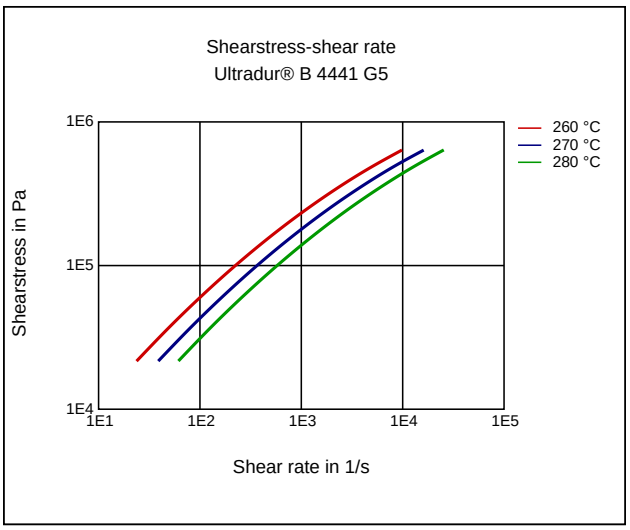
Processing Recommendation Injection Molding	Value	Unit	Test Standard
Pre-drying - Temperature	80 - 120	°C	-
Pre-drying - Time	4	h	-
Processing humidity	≤0.04	%	-
Melt temperature	260 - 280	°C	-
Mold temperature	60 - 100	°C	-

Diagrams

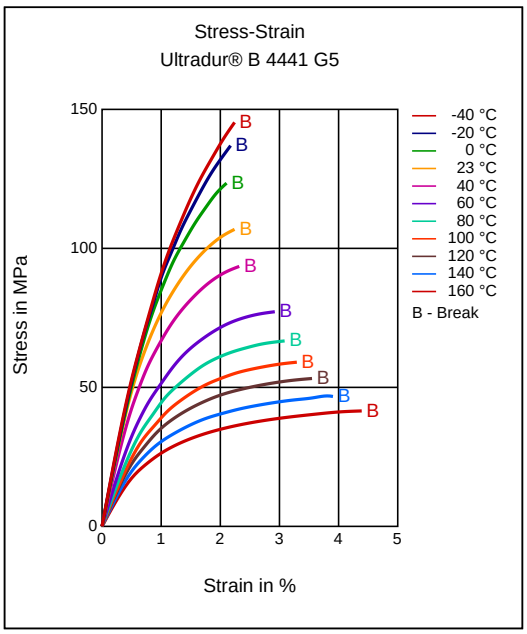
Viscosity-shear rate



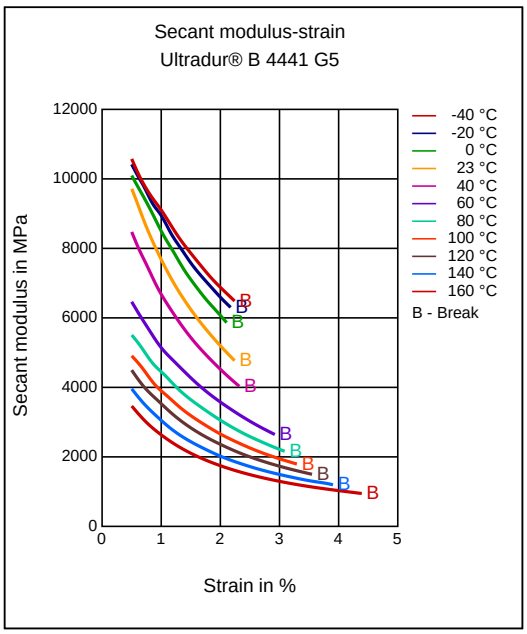
Shearstress-shear rate



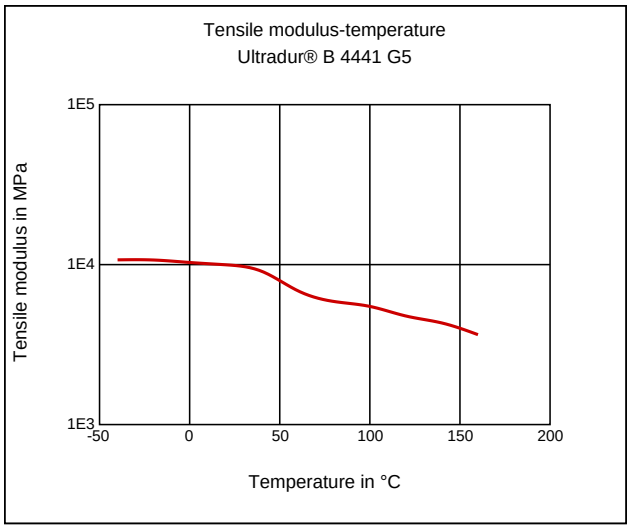
Stress-strain



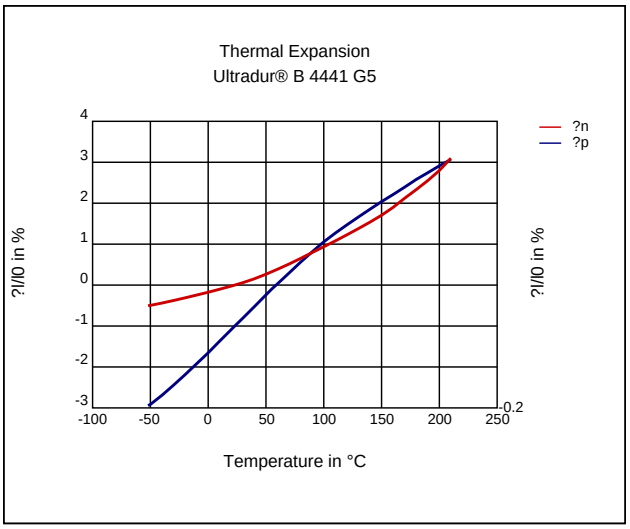
Secant modulus-strain



Tensile Modulus-Temperature



Coeff. of linear thermal expansion, normal



Characteristics

Processing
Injection Molding, Other Extrusion

Additives
Lubricants

Delivery form
Pellets

Special Characteristics
Flame retardant, Halogen-free, 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: 260 - 280 °C
injection molding, Melt temperature, recommended: 270 °C
injection molding, Mold temperature, range: 60 - 100 °C
injection molding, Mold temperature, recommended: 80 °C
injection molding, Dwell time, thermoplastics: 5 min

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