Ultradur® LUX B 4300 G4

PBT-GF20 BASF

Injection molding grade with 20 % glass fiber reinforcement and very high transmission for laser light in the wavelength range of 800 to 1100 nm. Suitable for manufacturing technical parts, e.g. covers that are welded to a housing by laser transmission welding

Abbreviated designation according to ISO 1043: PBT-GF20

Rheological properties	Value	Unit	Test Standard
ISO Data			
Melt volume-flow rate, MVR	9	cm³/10min	ISO 1133
Temperature	260	°C	-
Load	5	kg	-
Molding shrinkage, parallel	0.8	%	ISO 294-4, 2577
Molding shrinkage, normal	1.2	%	ISO 294-4, 2577

Mechanical Properties	Value	Unit	Test Standard
ISO Data			
Tensile Modulus	7300	MPa	ISO 527
Stress at Break	125	MPa	ISO 527
Strain at Break	3.5	%	ISO 527
Impact Strength (Charpy), +23°C	40	kJ/m²	ISO 179/1eU
Impact Strength (Charpy), -30°C	35	kJ/m²	ISO 179/1eU
Notched Impact Strength (Charpy), +23°C	6.5	kJ/m²	ISO 179/1eA
Notched Impact Strength (Charpy), -30°C	6.3	kJ/m²	ISO 179/1eA

Thermal Properties	Value	Unit	Test Standard
ISO Data			
Melting Temperature (10°C/min)	220	°C	ISO 11357-1/-3
Temp. of deflection under load (1.80 MPa)	200	°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	125	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			
Volume Resistivity	>1E13	Ohm*m	IEC 62631-3-1
Surface Resistivity	1E15	Ohm	IEC 62631-3-2
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	1460	kg/m³	ISO 1183

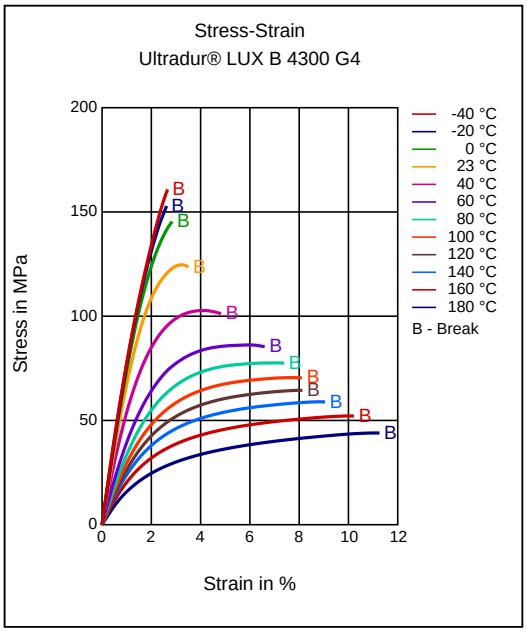
Material Specific Properties	Value	Unit	Test Standard
ISO Data			
Viscosity number	100	cm³/g	ISO 307, 1157, 1628

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

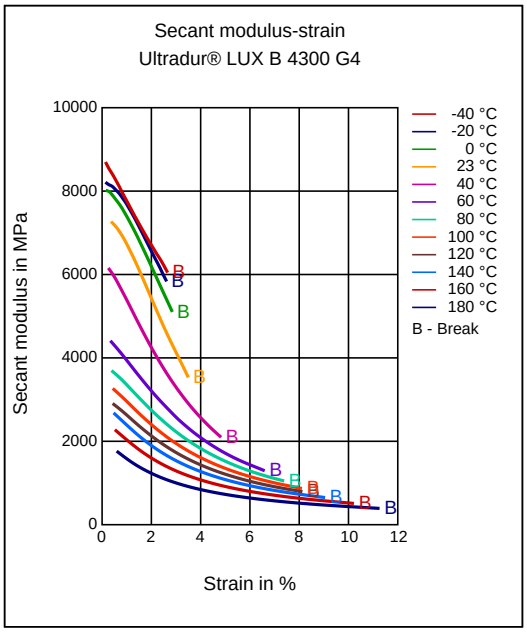
Processing Recommendation Injection Molding	Value	Unit	Test Standard
Pre-drying - Temperature	80 - 120	°C	-
Pre-drying - Time	4	h	-
Processing humidity	≤0.04	%	-
Melt temperature	250 - 270	°C	-
Mold temperature	60 - 100	°C	-

Diagrams

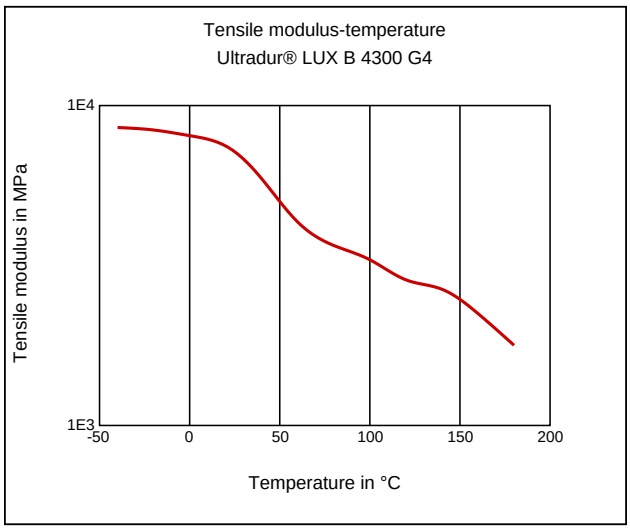
Stress-strain



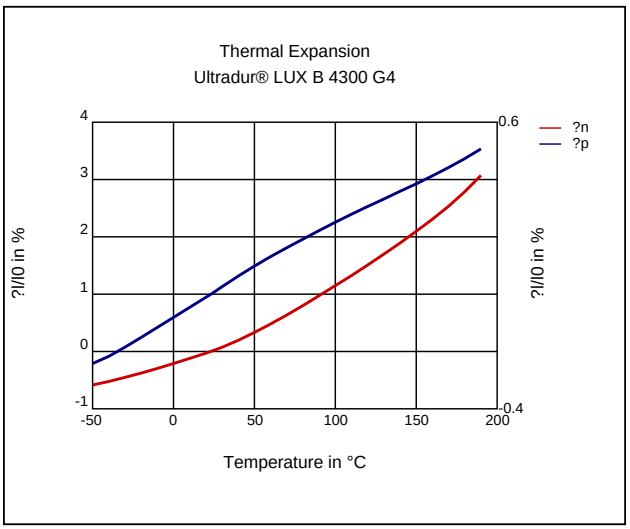
Secant modulus-strain



Tensile Modulus-Temperature



Coeff. of linear thermal expansion, normal



Characteristics

Processing

Injection Molding

Special Characteristics

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

Delivery form
Pellets

Features
Laser Weldable

Additives
Lubricants

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 - 270 °C
injection molding, Melt temperature, recommended: 260 °C
injection molding, Mold temperature, range: 60 - 100 °C
injection molding, Mold temperature, recommended: 80 °C
injection molding, Dwell time, thermoplastics: 5 min

Disclaimer