

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

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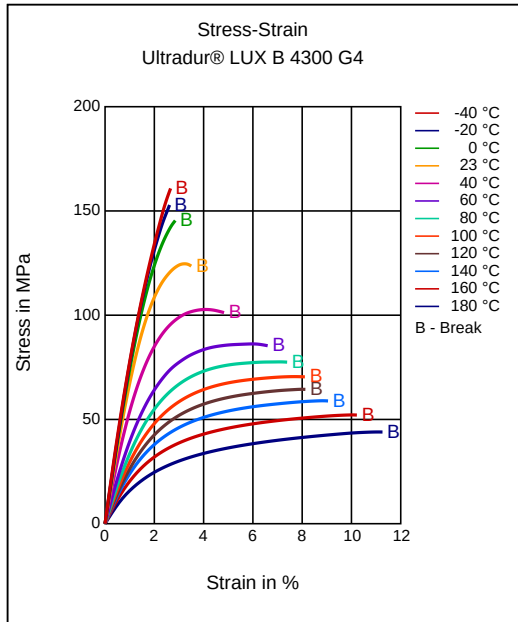
BASF

Processing Recommendation Injection Molding

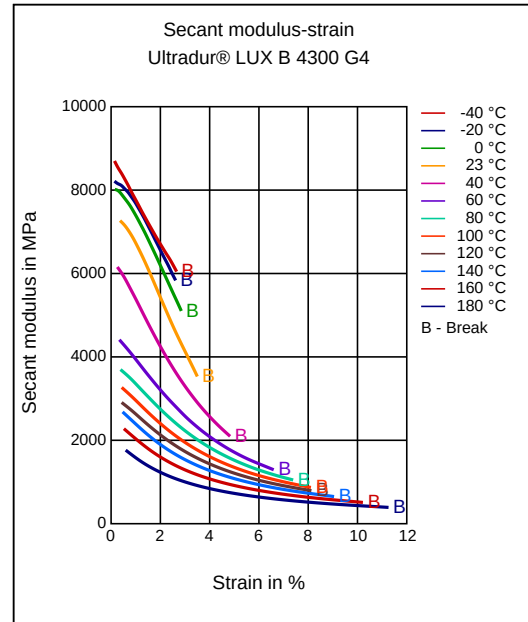
	Value	Unit	Test Standard
Pre-drying - Temperature	80 - 120	°C	-
Pre-drying - Time	4	h	-
Processing humidity	≤0.04	%	-
Melt temperature	250 - 270	°C	-
Mold temperature	60 - 100	°C	-

Diagrams

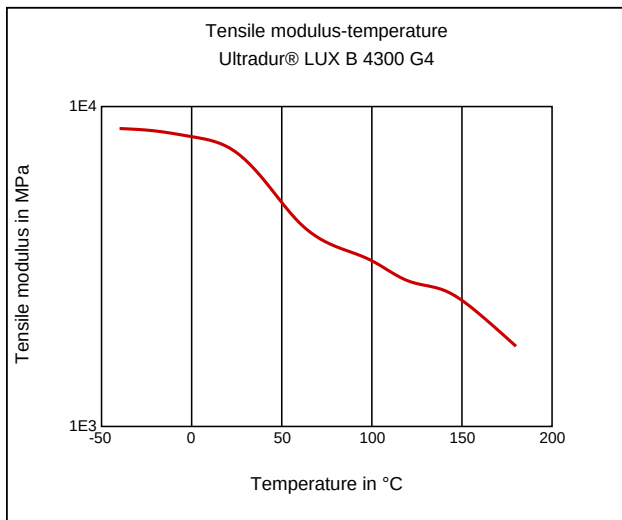
Stress-strain



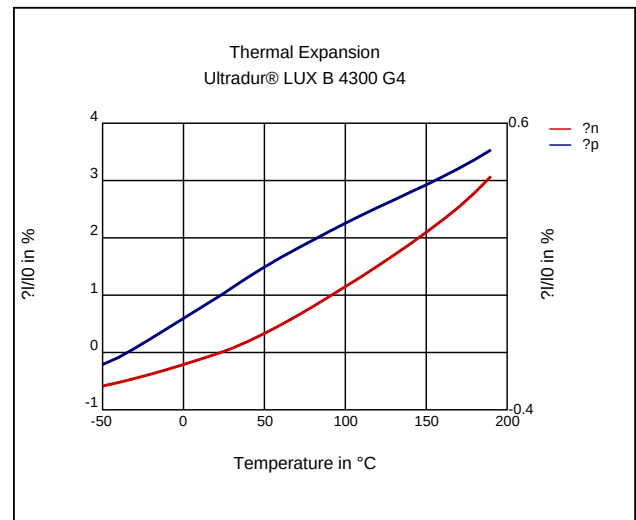
Secant modulus-strain



Tensile Modulus-Temperature



Coeff. of linear thermal expansion, normal



Characteristics

Processing

Injection Molding

Special Characteristics

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

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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