Ultradur® B 4560

PBT BASF

Medium viscosity injection molding grade for industrial parts in the automotive field, for example for head lamp bezel.
Suitable for direct metallizing.

Abbreviated designation according to ISO 1043-1: PBT

Rheological properties	Value	Unit	Test Standard
ISO Data			
Melt volume-flow rate, MVR	35	cm³/10min	ISO 1133
Temperature	250	°C	-
Load	2.16	kg	-
Molding shrinkage, parallel	1.3	%	ISO 294-4, 2577
Molding shrinkage, normal	1.6	%	ISO 294-4, 2577

Mechanical Properties	Value	Unit	Test Standard
ISO Data			
Tensile Modulus	2600	MPa	ISO 527
Yield stress	60	MPa	ISO 527
Yield strain	3.7	%	ISO 527
Nominal strain at break	30	%	ISO 527
Impact Strength (Charpy), +23°C	140	kJ/m²	ISO 179/1eU
Impact Strength (Charpy), -30°C	85	kJ/m²	ISO 179/1eU
Notched Impact Strength (Charpy), +23°C	3.8	kJ/m²	ISO 179/1eA
Notched Impact Strength (Charpy), -30°C	4.9	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)	60	°C	ISO 75-1/-2
Temp. of deflection under load (0.45 MPa)	135	°C	ISO 75-1/-2
Coeff. of Linear Therm. Expansion, parallel	115	E-6/K	ISO 11359-1/-2
Coeff. of Linear Therm. Expansion, normal	115	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	-	-

Electrical Properties	Value	Unit	Test Standard
ISO Data			
Relative permittivity, 100Hz	3.4	-	IEC 62631-2-1
Relative permittivity, 1MHz	3.3	-	IEC 62631-2-1
Dissipation Factor, 100Hz	20	E-4	IEC 62631-2-1
Dissipation Factor, 1MHz	200	E-4	IEC 62631-2-1
Volume Resistivity	>1E13	Ohm*m	IEC 62631-3-1
Surface Resistivity	1E13	Ohm	IEC 62631-3-2
Comparative tracking index	550	-	IEC 60112

Other Properties	Value	Unit	Test Standard
ISO Data			
Water Absorption	0.5	%	Sim. to ISO 62
Humidity absorption	0.25	%	Sim. to ISO 62
Density	1300	kg/m³	ISO 1183

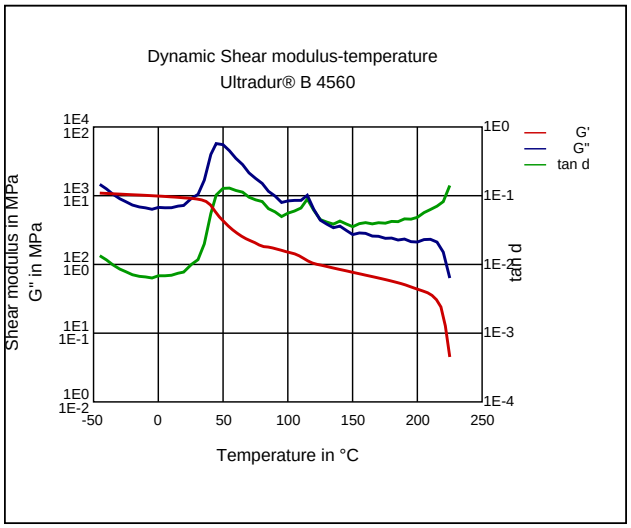
Material Specific Properties	Value	Unit	Test Standard
ISO Data			
Viscosity number	112	cm³/g	ISO 307, 1157, 1628

Test specimen production	Value	Unit	Test Standard
ISO Data			
Injection Molding, melt temperature	260	°C	ISO 294
Injection Molding, mold temperature	60	°C	ISO 294
Injection Molding, injection velocity	200	mm/s	ISO 294

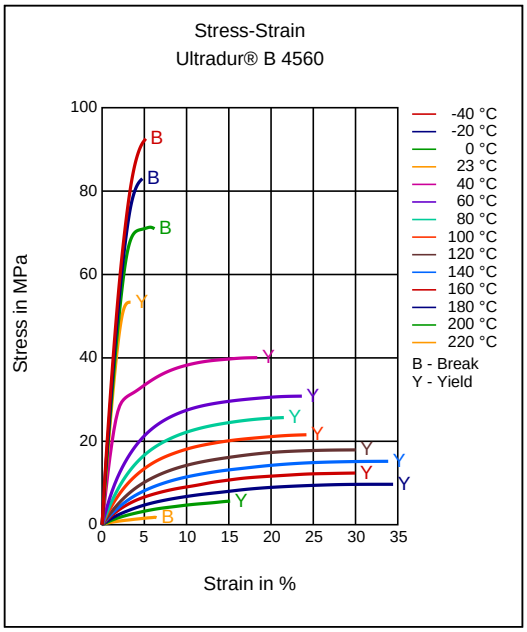
Processing Recommendation Injection Molding	Value	Unit	Test Standard
Pre-drying - Temperature	80 - 120	°C	-
Pre-drying - Time	4	h	-
Processing humidity	≤0.04	%	-
Melt temperature	230 - 275	°C	-
Mold temperature	40 - 70	°C	-

Diagrams

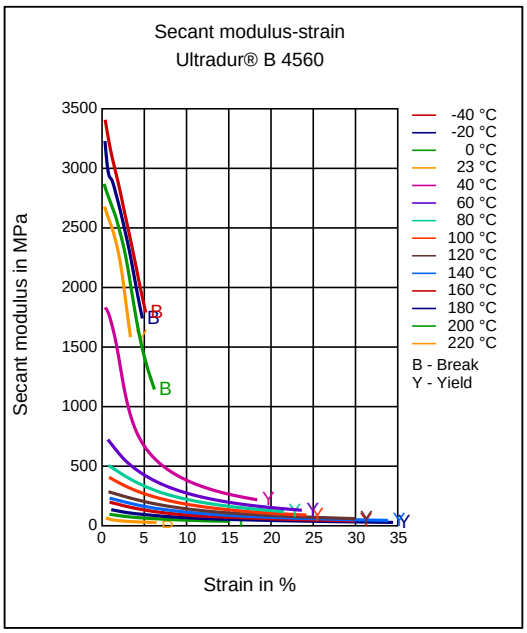
Dynamic Shear modulus-temperature



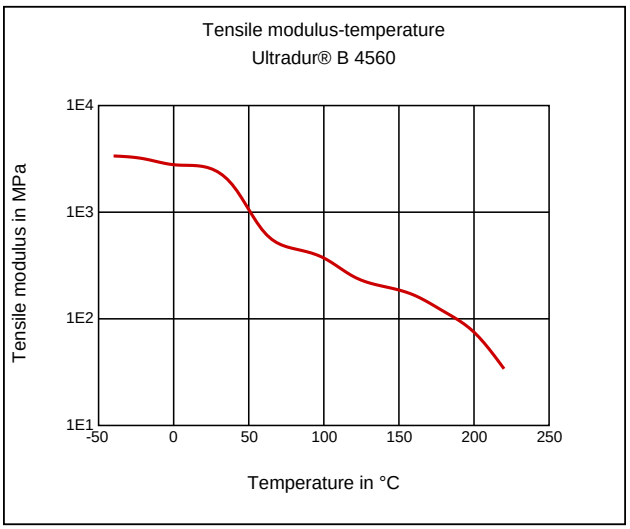
Stress-strain



Secant modulus-strain



Tensile Modulus-Temperature



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: 230 - 275 °C
injection molding, Melt temperature, recommended: 260 °C
injection molding, Mold temperature, range: 40 - 70 °C
injection molding, Mold temperature, recommended: 60 °C

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