

Ultramid® Endure D3G7 bk20560
PA66-GF35

BASF

Glass fiber reinforced injection moulding grade with high stiffness, very good flowability, and excellent heat ageing resistance up to at least 220 °C for technical articles.

Rheological properties	dry / cond	Unit	Test Standard
ISO Data			
Melt volume-flow rate, MVR	38 / *	cm³/10min	ISO 1133
Temperature	275 / *	°C	-
Load	5 / *	kg	-
Molding shrinkage, parallel	0.3 / *	%	ISO 294-4, 2577
Molding shrinkage, normal	0.9 / *	%	ISO 294-4, 2577

Mechanical Properties	dry / cond	Unit	Test Standard
ISO Data			
Tensile Modulus	11300 / 7600	MPa	ISO 527
Stress at Break	200 / 130	MPa	ISO 527
Strain at Break	2.9 / 5.1	%	ISO 527
Tensile Creep Modulus, 1000h	* / 4800	MPa	ISO 899-1
Impact Strength (Charpy), +23°C	80 / 90	kJ/m²	ISO 179/1eU
Impact Strength (Charpy), -30°C	70 / 70	kJ/m²	ISO 179/1eU
Notched Impact Strength (Charpy), +23°C	10.2 / 13.4	kJ/m²	ISO 179/1eA
Notched Impact Strength (Charpy), -30°C	10.7 / 13.9	kJ/m²	ISO 179/1eA
Flexural Modulus (23°C)	10600 / 7400	MPa	ISO 178

Thermal Properties	dry / cond	Unit	Test Standard
ISO Data			
Melting Temperature (10°C/min)	260 / *	°C	ISO 11357-1/-3
Temp. of deflection under load (1.80 MPa)	240 / *	°C	ISO 75-1/-2
Temp. of deflection under load (0.45 MPa)	260 / *	°C	ISO 75-1/-2
Coeff. of Linear Therm. Expansion, parallel	22 / *	E-6/K	ISO 11359-1/-2
Coeff. of Linear Therm. Expansion, normal	92 / *	E-6/K	ISO 11359-1/-2

Electrical Properties	dry / cond	Unit	Test Standard
ISO Data			
Volume Resistivity	2.8E12 / 3.1E8	Ohm*m	IEC 62631-3-1
Surface Resistivity	* / 5E13	Ohm	IEC 62631-3-2
Electric Strength	48 / 29	kV/mm	IEC 60243-1
Comparative tracking index	250 / 225	-	IEC 60112

Other Properties	dry / cond	Unit	Test Standard
ISO Data			
Water Absorption	5.8 / *	%	Sim. to ISO 62
Humidity absorption	1.85 / *	%	Sim. to ISO 62
Density	1430 / -	kg/m³	ISO 1183

Material Specific Properties	dry / cond	Unit	Test Standard
ISO Data			
Viscosity number	137 / *	cm³/g	ISO 307, 1157, 1628

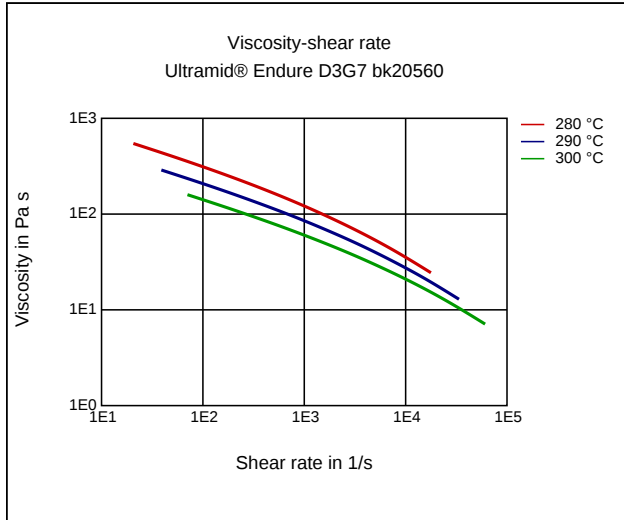
Processing Recommendation Injection Molding	Value	Unit	Test Standard
Pre-drying - Temperature	80	°C	-
Pre-drying - Time	4	h	-
Melt temperature	280 - 300	°C	-
Mold temperature	80 - 90	°C	-

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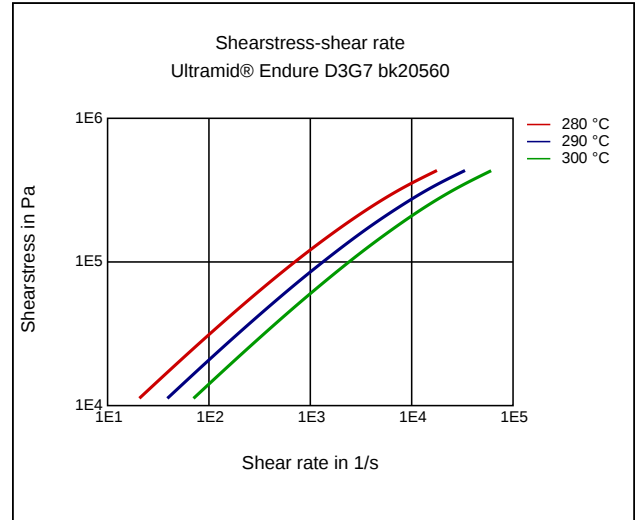
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Diagrams

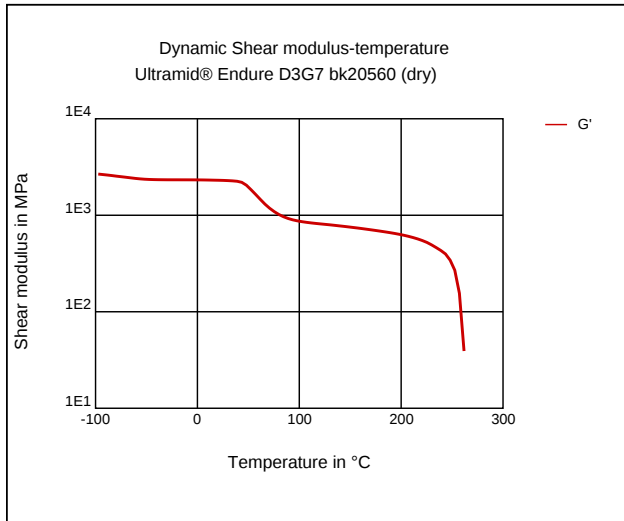
Viscosity-shear rate



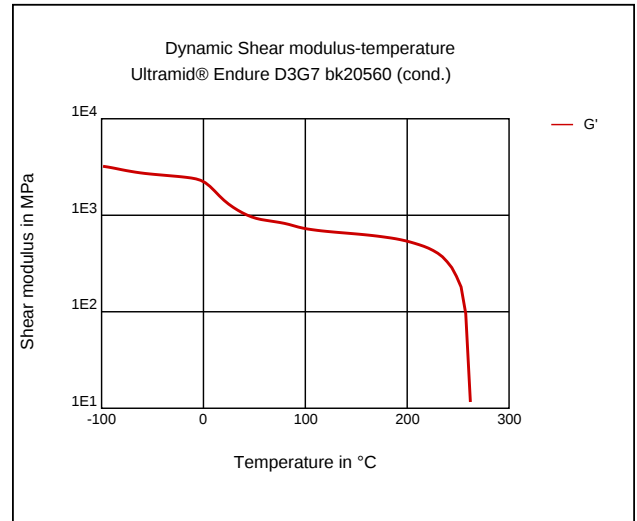
Shearstress-shear rate



Dynamic Shear modulus-temperature



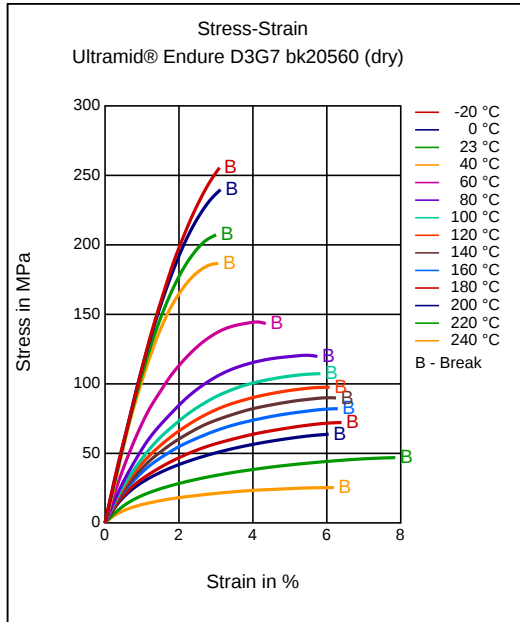
Dynamic Shear modulus-temperature



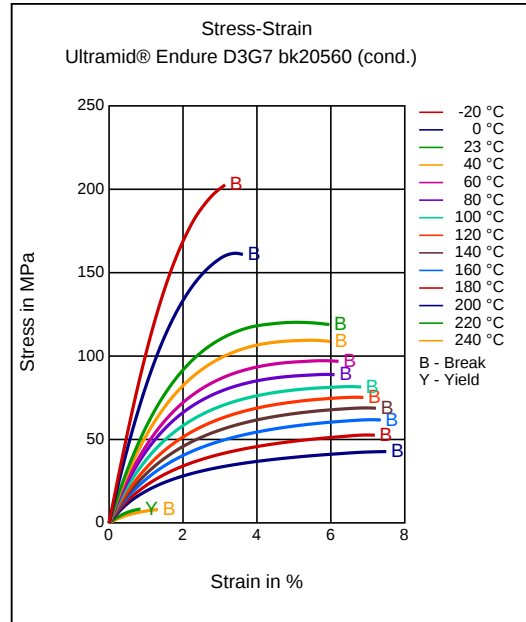
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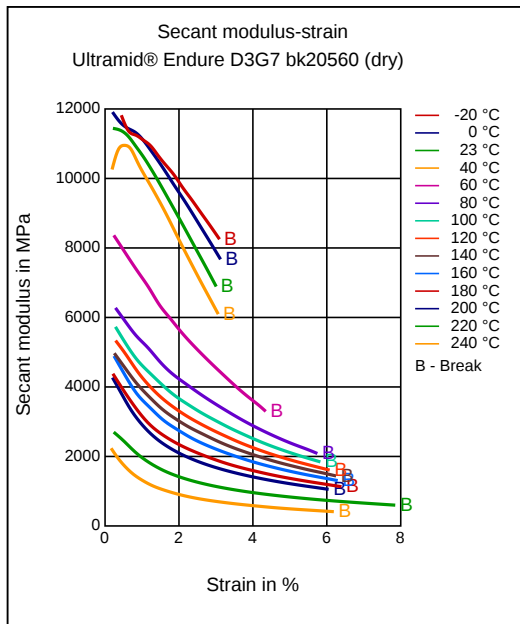
Stress-strain



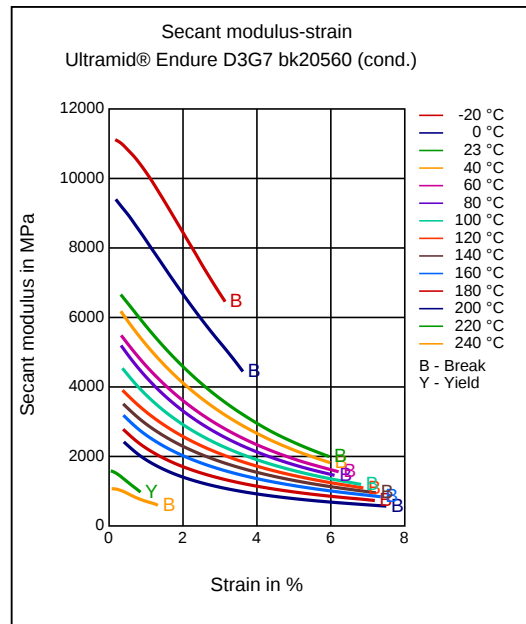
Stress-strain



Secant modulus-strain



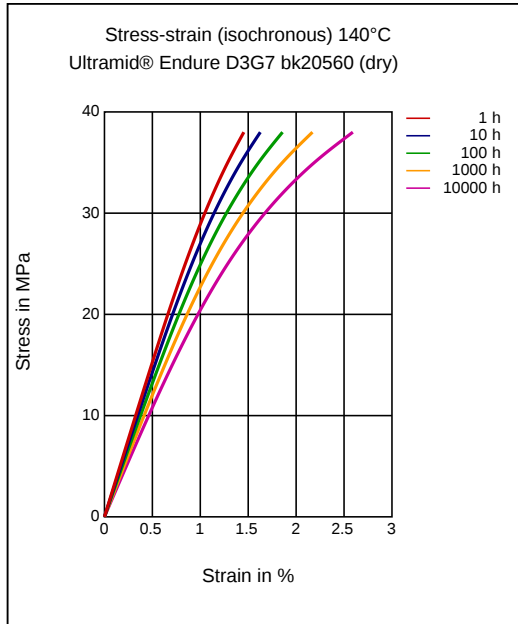
Secant modulus-strain



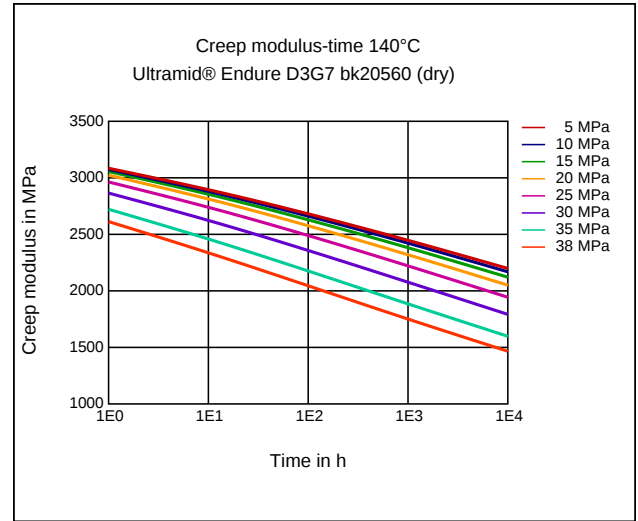
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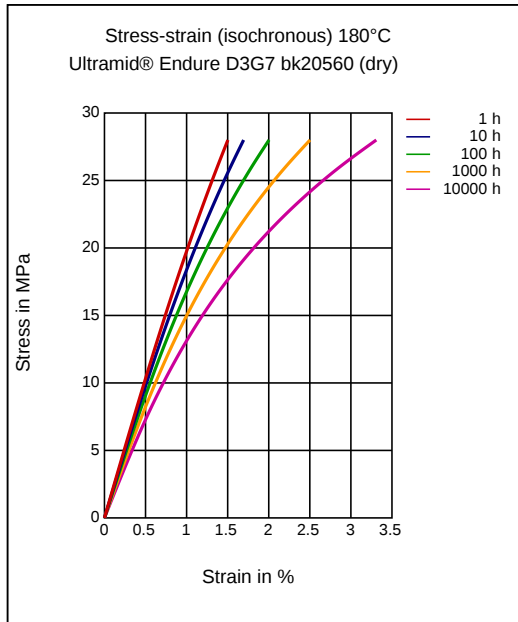
Stress-strain (isochronous) 140°C



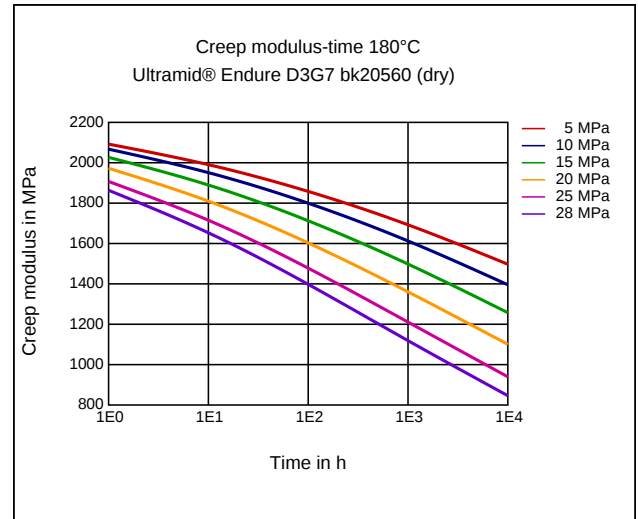
Creep modulus-time 140°C



Stress-strain (isochronous) 180°C



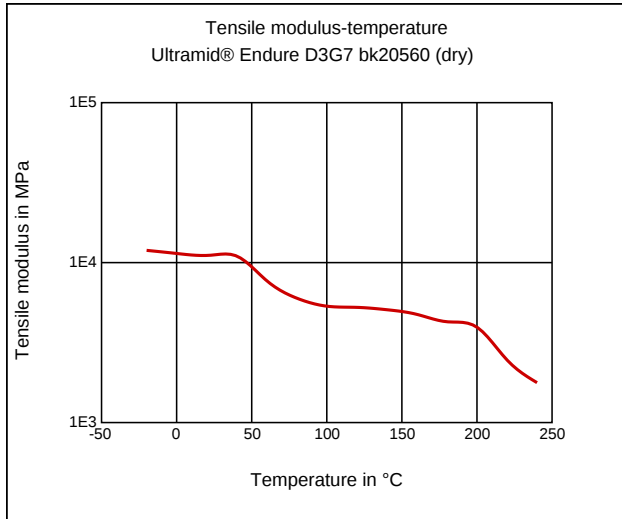
Creep modulus-time 180°C



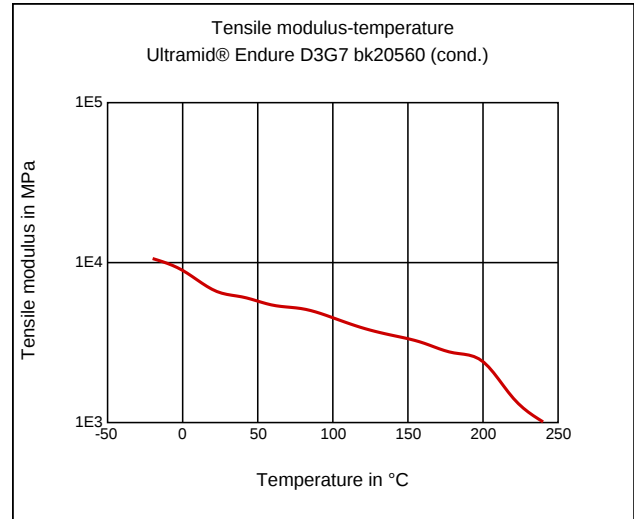
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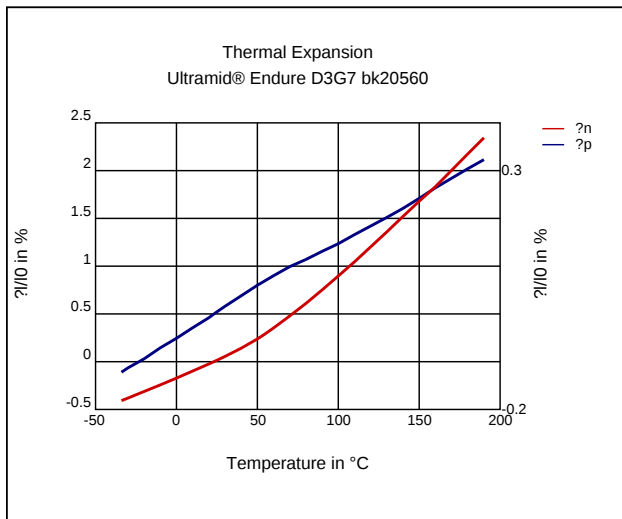
Tensile Modulus-Temperature



Tensile Modulus-Temperature



Coeff. of linear thermal expansion, normal



Characteristics

Processing

Injection Molding

Delivery form

Pellets, Black

Special Characteristics

Heat aging stabilized

Injection Molding

PREPROCESSING

Pre/Post-processing, Pre-drying, Temperature: 80 °C

Pre/Post-processing, Pre-drying, Time: 4 h

PROCESSING

injection molding, Melt temperature, range: 280 - 300 °C

injection molding, Melt temperature, recommended: 290 °C

injection molding, Mold temperature, range: 80 - 90 °C

injection molding, Mold temperature, recommended: 80 °C

injection molding, Dwell time, thermoplastics: 5 min