

Ultramid® B3U42G6

PA6-GF30 FR(40)

BASF

Without halogens flame retardant glass fiber reinforced injection moulding grade for plastic parts in electrical applications. The product is light colorable and provides good mechanical and electrical properties. Due to the halide free stabilization the impact on corrosion is minimized and sensitive electronic components are better protected.

Rheological properties	dry / cond	Unit	Test Standard
ISO Data			
Melt volume-flow rate, MVR	40 / *	cm ³ /10min	ISO 1133
Temperature	275 / *	°C	-
Load	5 / *	kg	-
Molding shrinkage, parallel	0.2 / *	%	ISO 294-4, 2577
Molding shrinkage, normal	0.7 / *	%	ISO 294-4, 2577

Mechanical Properties	dry / cond	Unit	Test Standard
ISO Data			
Tensile Modulus	11000 / 7700	MPa	ISO 527
Stress at Break	140 / 95	MPa	ISO 527
Strain at Break	2.7 / 4.5	%	ISO 527
Impact Strength (Charpy), +23°C	60 / 60	kJ/m ²	ISO 179/1eU
Impact Strength (Charpy), -30°C	55 / 50	kJ/m ²	ISO 179/1eU
Notched Impact Strength (Charpy), +23°C	8 / 10	kJ/m ²	ISO 179/1eA
Notched Impact Strength (Charpy), -30°C	7.5 / 7	kJ/m ²	ISO 179/1eA
Flexural Modulus (23°C)	11000 / 7600	MPa	ISO 178
Flexural strength	225 / 160	MPa	ISO 178

Thermal Properties	dry / cond	Unit	Test Standard
ISO Data			
Melting Temperature (10°C/min)	220 / *	°C	ISO 11357-1/-3
Temp. of deflection under load (1.80 MPa)	206 / *	°C	ISO 75-1/-2
Coeff. of Linear Therm. Expansion, parallel	24 / *	E-6/K	ISO 11359-1/-2
Coeff. of Linear Therm. Expansion, normal	82 / *	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 / *	-	-
Glow Wire (GWFI, Flammability Index)	960	°C	IEC 60695-2-12
GWFI - thickness tested (1)	0.75	mm	-
Glow Wire (GWFI, Flammability Index)	960	°C	IEC 60695-2-12
GWFI - thickness tested (2)	1.5	mm	-
Glow Wire (GWFI, Flammability Index)	960	°C	IEC 60695-2-12
GWFI - thickness tested (3)	3	mm	-
Glow Wire Ignition Temperature	800	°C	IEC 60695-2-13
GWIT - thickness tested (1)	0.75	mm	-
Glow Wire Ignition Temperature	800	°C	IEC 60695-2-13
GWIT - thickness tested (2)	1.5	mm	-
Glow Wire Ignition Temperature	825	°C	IEC 60695-2-13
GWIT - thickness tested (3)	3	mm	-

Electrical Properties	dry / cond	Unit	Test Standard
ISO Data			
Relative permittivity, 1MHz	3.8 / 4.4	-	IEC 62631-2-1
Dissipation Factor, 1MHz	170 / 640	E-4	IEC 62631-2-1
Volume Resistivity	1E12 / 1E10	Ohm*m	IEC 62631-3-1
Surface Resistivity	* / 1E14	Ohm	IEC 62631-3-2
Electric Strength	40 / 35	kV/mm	IEC 60243-1
Comparative tracking index	- / 600	-	IEC 60112

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Other Properties	dry / cond	Unit	Test Standard
ISO Data			
Water Absorption	5.2 / *	%	Sim. to ISO 62
Humidity absorption	1.75 / *	%	Sim. to ISO 62
Density	1440 / -	kg/m ³	ISO 1183
Bulk density	700	kg/m ³	-

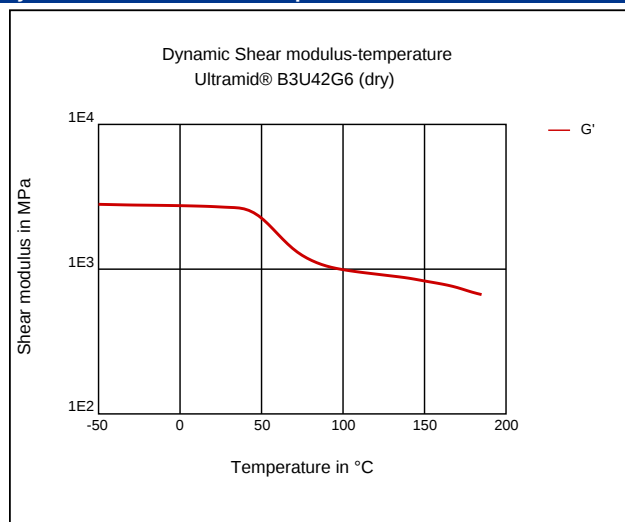
Material Specific Properties	dry / cond	Unit	Test Standard
ISO Data			
Viscosity number	120 / *	cm ³ /g	ISO 307, 1157, 1628

Processing Recommendation Injection Molding	Value	Unit	Test Standard
Pre-drying - Temperature	80	°C	-
Pre-drying - Time	4 - 8	h	-
Processing humidity	≤0.15	%	-
Melt temperature	270 - 290	°C	-
Mold temperature	70 - 90	°C	-

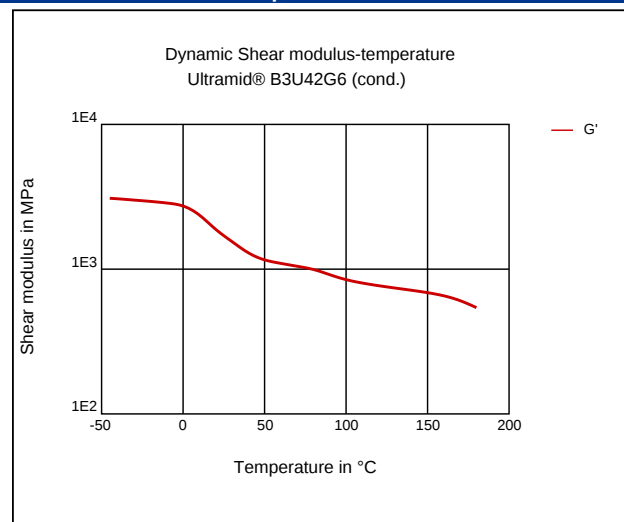
Processing Recommendation Extrusion	Value	Unit	Test Standard
Melt temperature	270 - 290	°C	-

Diagrams

Dynamic Shear modulus-temperature



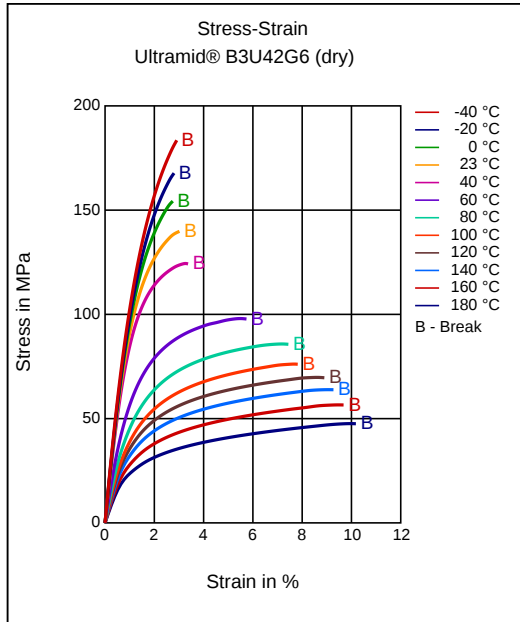
Dynamic Shear modulus-temperature



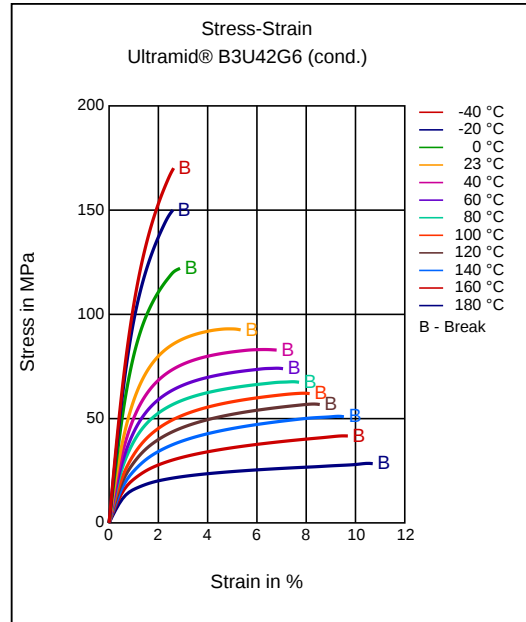
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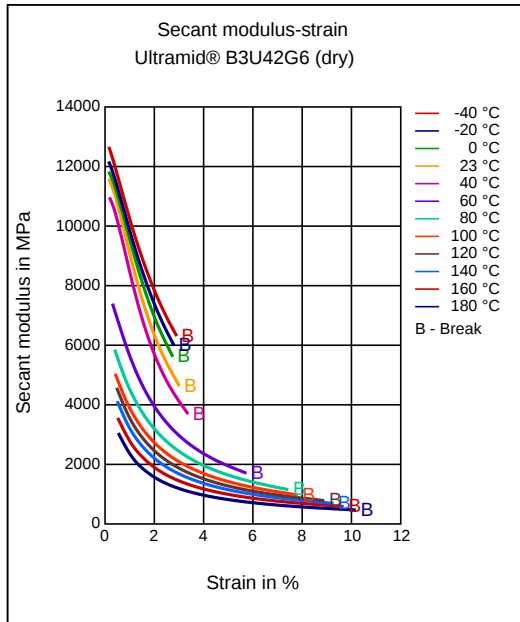
Stress-strain



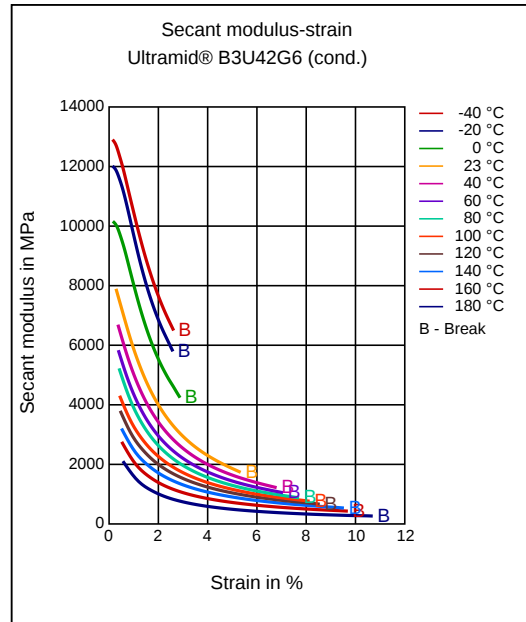
Stress-strain



Secant modulus-strain



Secant modulus-strain

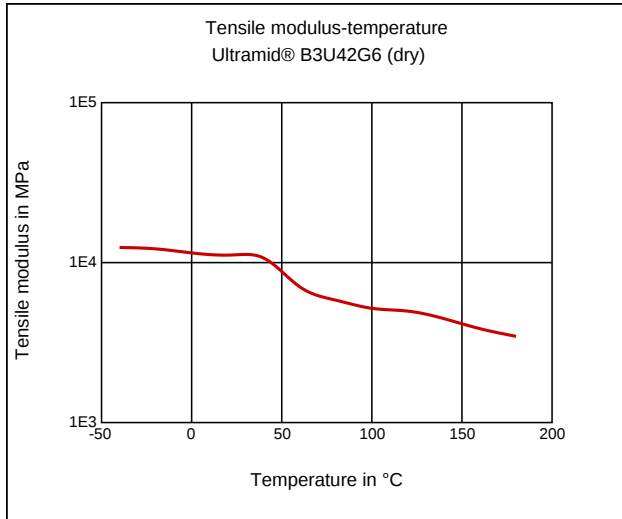


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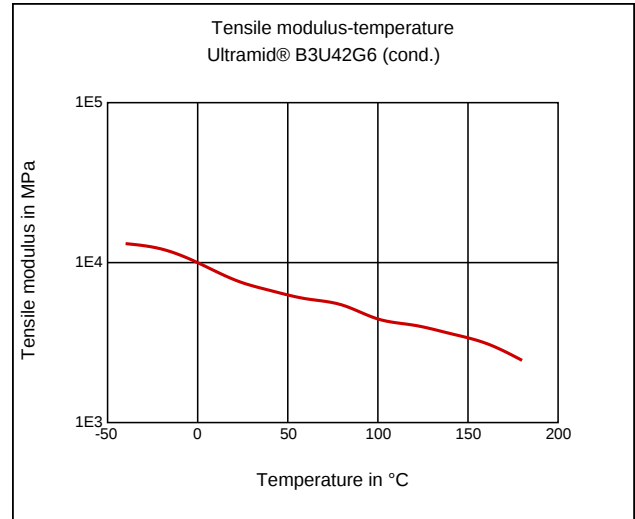
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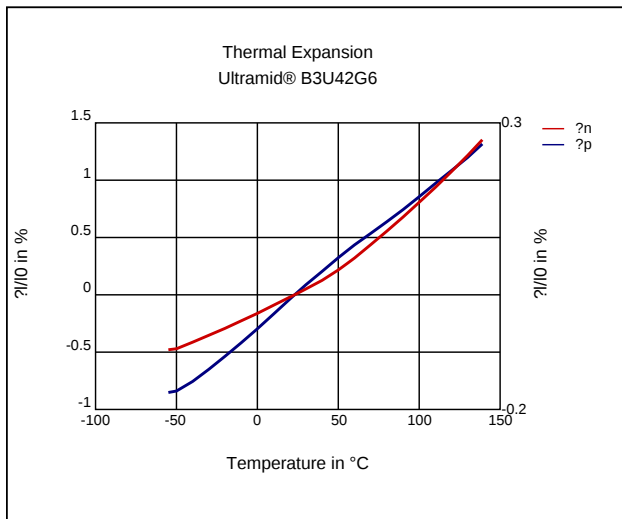
Tensile Modulus-Temperature



Tensile Modulus-Temperature



Coeff. of linear thermal expansion, normal



Characteristics

Processing

Injection Molding, Other Extrusion

Delivery form

Pellets

Additives

Flame retarding agent

Special Characteristics

Flame retardant, Halogen-free

Applications

Electrical and Electronical

Injection Molding

PREPROCESSING

Pre/Post-processing, max. allowed water content: .15 %

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

Pre/Post-processing, Pre-drying, Time: 4 - 8 h

PROCESSING

injection molding, Melt temperature, range: 270 - 290 °C

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injection molding, Melt temperature, recommended: 280 °C

injection molding, Mold temperature, range: 70 - 90 °C

injection molding, Mold temperature, recommended: 80 °C

injection molding, Dwell time, thermoplastics: 10 min
