

Ultramid® Advanced N3WG6 LS BK PPA-GF30

BASF

Partially aromatic, glassfiber reinforced polyphthalamide for injection molding with strong mechanical properties especially at elevated temperatures, good long-term thermal stability and outstanding chemical resistance for highly stressed parts. The product can be characterized as compound with high toughness, stiffness, extremely low water absorption and outstanding dimensional stability. It features high flowability and allows filling of complex parts with thin wall thickness. The product is easily processable with excellent melt stability.

Markets & applications

Automotive: Fuel system, cooling system, powertrain, Auto E&E, sensors, fuel cell

E&E: Connectors

Rheological properties	dry / cond	Unit	Test Standard
ISO Data			
Molding shrinkage, parallel	0.5 / *	%	ISO 294-4, 2577
Molding shrinkage, normal	1.0 / *	%	ISO 294-4, 2577

Mechanical Properties	dry / cond	Unit	Test Standard
ISO Data			
Tensile Modulus	10000 / 10000	MPa	ISO 527
Stress at Break	190 / 175	MPa	ISO 527
Strain at Break	2.4 / 2.2	%	ISO 527
Impact Strength (Charpy), +23°C	60 / 50	kJ/m²	ISO 179/1eU
Impact Strength (Charpy), -30°C	60 / 50	kJ/m²	ISO 179/1eU
Notched Impact Strength (Charpy), +23°C	8 / 7	kJ/m²	ISO 179/1eA
Notched Impact Strength (Charpy), -30°C	8 / 7	kJ/m²	ISO 179/1eA

Thermal Properties	dry / cond	Unit	Test Standard
ISO Data			
Melting Temperature (10°C/min)	300 / *	°C	ISO 11357-1/-3
Glass Transition Temperature (10°C/min)	120 / *	°C	ISO 11357-1/-2
Temp. of deflection under load (1.80 MPa)	270 / *	°C	ISO 75-1/-2
Vicat softening temperature, 50°C/h 50N	280 / *	°C	ISO 306
Burning Behav. at thickness h	HB / *	class	UL 94
Thickness tested	0.8 / *	mm	-

Electrical Properties	dry / cond	Unit	Test Standard
ISO Data			
Relative permittivity, 1MHz	4 / 3.6	-	IEC 62631-2-1
Dissipation Factor, 1MHz	105 / 205	E-4	IEC 62631-2-1
Surface Resistivity	* / >1E15	Ohm	IEC 62631-3-2
Comparative tracking index	- / 600	-	IEC 60112

Other Properties	dry / cond	Unit	Test Standard
ISO Data			
Water Absorption	2 / *	%	Sim. to ISO 62
Humidity absorption	0.9 / *	%	Sim. to ISO 62
Density	1370 / -	kg/m³	ISO 1183

Material Specific Properties	dry / cond	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	330	°C	ISO 294
Injection Molding, mold temperature	140	°C	ISO 294

Processing Recommendation Injection Molding	Value	Unit	Test Standard
Pre-drying - Temperature	120	°C	-
Pre-drying - Time	8	h	-
Processing humidity	≤0.05	%	-
Melt temperature	320 - 340	°C	-

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Mold temperature

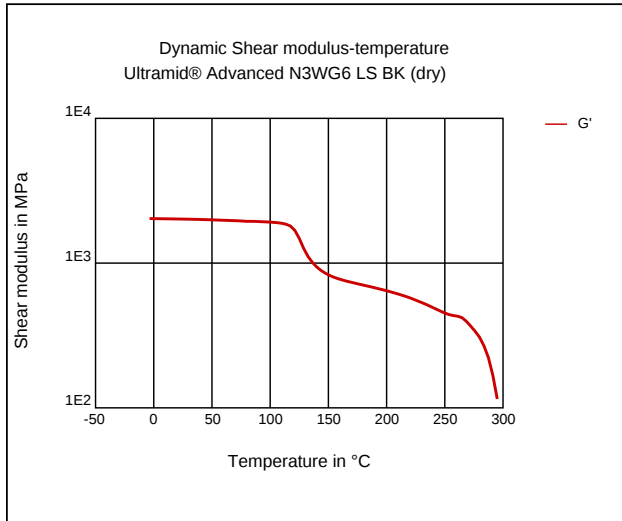
100 - 160

°C

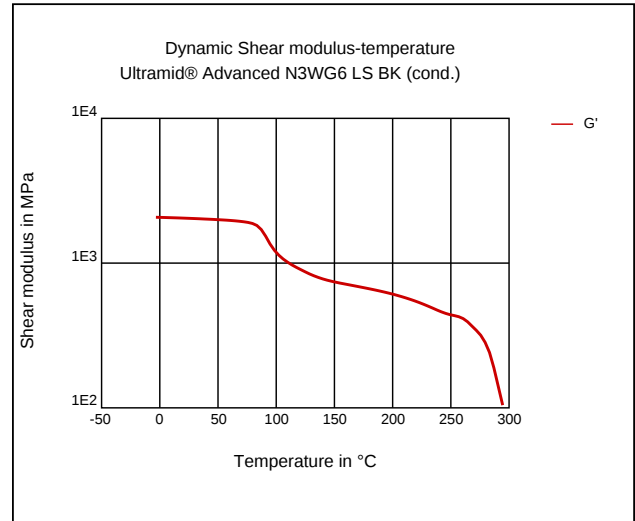
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Diagrams

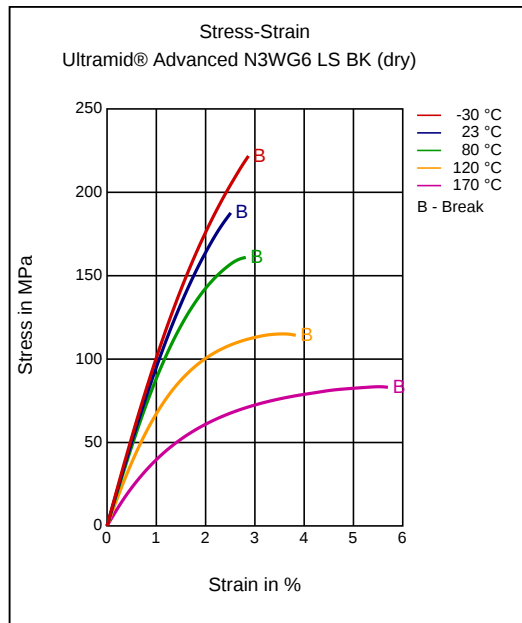
Dynamic Shear modulus-temperature



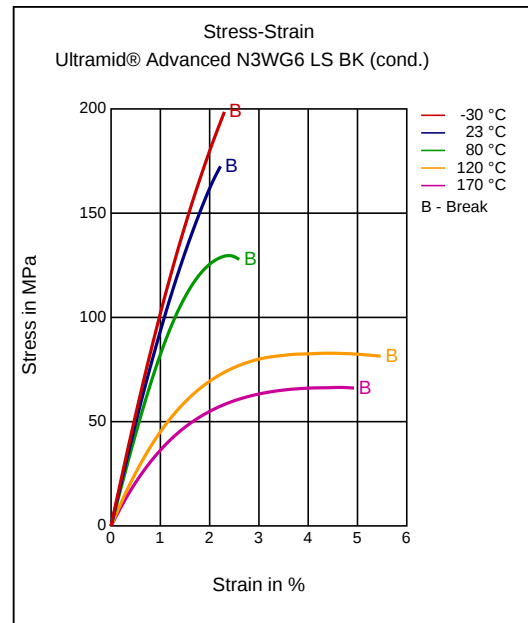
Dynamic Shear modulus-temperature



Stress-strain



Stress-strain

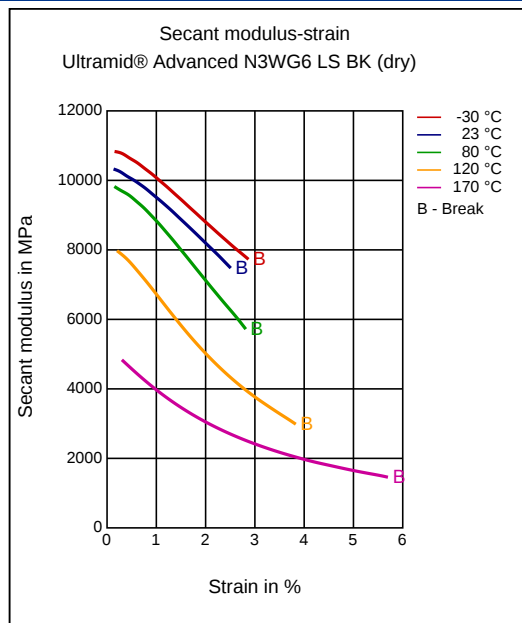


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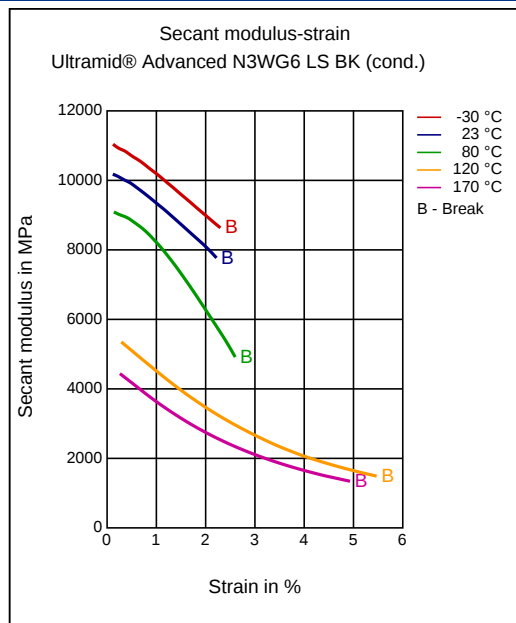
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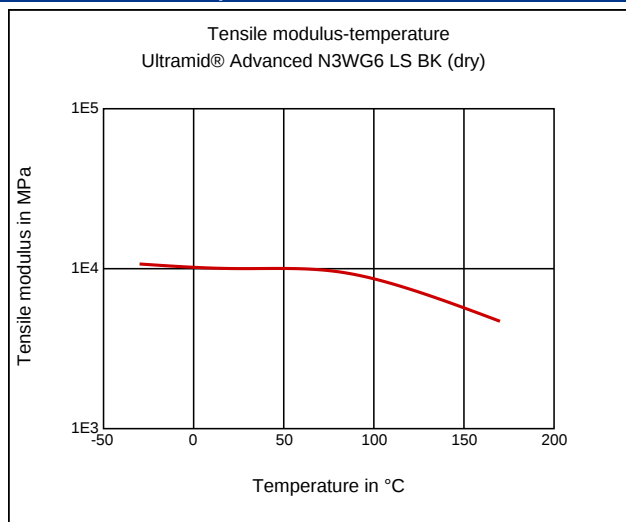
Secant modulus-strain



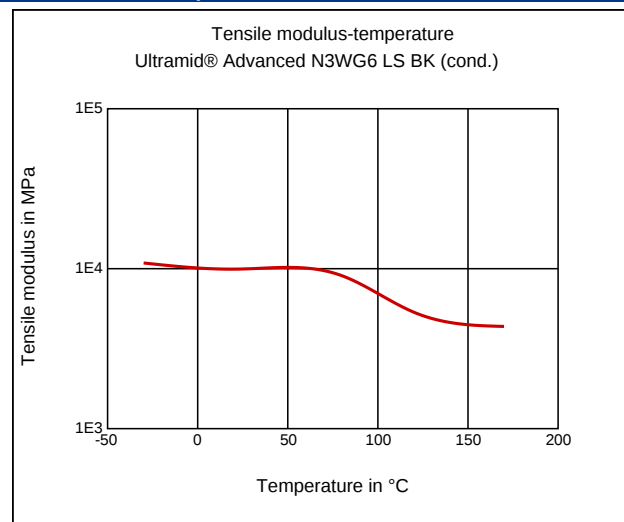
Secant modulus-strain



Tensile Modulus-Temperature



Tensile Modulus-Temperature



Characteristics

Processing

Injection Molding

Delivery form

Pellets, Black

Special Characteristics

Heat aging stabilized

Features

Melt Strength, Thermal Stability

Chemical Resistance

General Chemical Resistance

Injection Molding

PREPROCESSING

Pre/Post-processing, max. allowed water content: .05 %

Pre/Post-processing, Pre-drying, Temperature: 120 °C

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

PROCESSING

injection molding, Melt temperature, range: 320 - 340 °C

injection molding, Melt temperature, recommended: 330 °C

injection molding, Mold temperature, range: 125 - 170 °C

injection molding, Mold temperature, recommended: 140 °C

injection molding, Dwell time, thermoplastics: 5 min
