



LONG CHAIN POLYAMIDE RESIN

Product information

Zytel® LCPA long chain polyamide resins provide an innovative and growing portfolio of flexible polymers with excellent thermal, chemical, and hydrolysis resistance. The diverse selection of Zytel® LCPA grades is targeted for a range of performance characteristics, balancing temperature resistance, flexibility and low permeation.

Zytel® 77G33EFT BK276 is a 33% glass fiber reinforced, heat stabilized and toughened polyamide 612 resin developed for electrical bobbins and encapsulation applications.

PA612-I-GF33	ISO 1043
>PA612-I-GF33<	ISO 11469
dry/cond.	
$96^{[1]}$ /* cm ³ /g	ISO 307, 1628
	>PA612-I-GF33< dry/cond.

Viscosity number	9611/*	cm³/g	ISO 307, 1628
Moulding shrinkage, parallel	0.2/-	%	ISO 294-4, 2577
Moulding shrinkage, normal	0.8/-	%	ISO 294-4, 2577
[1]: sulphuric acid 96%			

Typical mechanical properties	dry/cond.		
Tensile modulus	9600/8500	MPa	ISO 527-1/-2
Tensile stress at break, 5mm/min	165/143	MPa	ISO 527-1/-2
Tensile strain at break, 5mm/min	3/3.5	%	ISO 527-1/-2
Flexural modulus	8900/7200	MPa	ISO 178
Charpy impact strength, 23°C	88/81	kJ/m²	ISO 179/1eU
Charpy notched impact strength 23°C	18/17	k.l/m²	ISO 179/1eA

Charpy impact strength, 23°C	88/81	kJ/m²	ISO 179/1eU
Charpy notched impact strength, 23°C	18/17	kJ/m²	ISO 179/1eA
Charpy notched impact strength, -40°C	14/14	kJ/m²	ISO 179/1eA
Poisson's ratio	0.34/0.34		

Thermal properties	dry/cond.		
Melting temperature, 10°C/min	218/*	°C	ISO 11357-1/-3
Glass transition temperature, 10°C/min	70/55	°C	ISO 11357-1/-3
Temperature of deflection under load, 1.8 MPa	203/*	°C	ISO 75-1/-2
Temperature of deflection under load, 0.45 MPa	215/*	°C	ISO 75-1/-2
Coeff. of linear therm. expansion, parallel, -40-23°C	23/*	E-6/K	ISO 11359-1/-2
Coefficient of linear thermal expansion	23/*	E-6/K	ISO 11359-1/-2
(CLTE), parallel			
Coeff. of linear therm. expansion, parallel, 55-160°C	18/*	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, normal, -40-23°C	93/*	E-6/K	ISO 11359-1/-2
Coefficient of linear thermal expansion (CLTE),	130/*	E-6/K	ISO 11359-1/-2

Coefficient of linear thermal expansion (CLTE), normal	130/*	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, normal, 55-160°C	150/*	E-6/K	ISO 11359-1/-2
Element de 10k v			

Flammability		
FMVSS Class	SE/B	ISO 3795 (FMVSS 302)

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dry/cond.

dry/cond.

Volume resistivity	1E13/1E13	Ohm.m	IEC 62631-3-1
Electric strength	41/41	kV/mm	IEC 60243-1
Comparative tracking index	600/-		IEC 60112

Physical/Other properties

Humidity absorption, 2mm	0.8/*	%	Sim. to ISO 62
Water absorption, 2mm	1.7/*	%	Sim. to ISO 62
Density	1300/-	kg/m³	ISO 1183

Injection

Drying Recommended	yes	
Drying Temperature	,	°C
Drying Time, Dehumidified Dryer	2 - 4	h
Processing Moisture Content	≤0.2	%
Melt Temperature Optimum	290	°C
Min. melt temperature	280	°C
Max. melt temperature	300	°C
Screw tangential speed	≤0.2	m/s
Mold Temperature Optimum	100	°C
Min. mould temperature	70	°C
Max. mould temperature	120	°C
Hold pressure range	50 - 100	MPa
Hold pressure time	3	s/mm
Ejection temperature	179	°C

Characteristics

Processing Injection Moulding

Delivery form Pellets

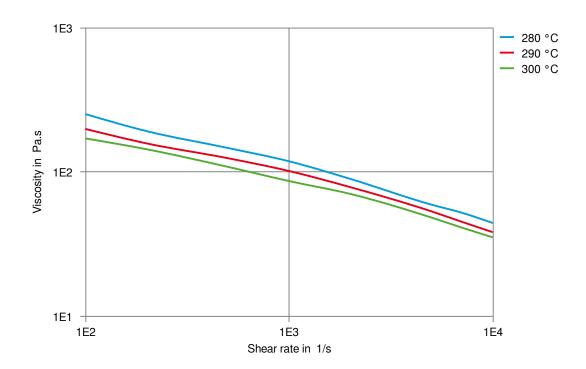
Additives Low halide content

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Viscosity-shear rate

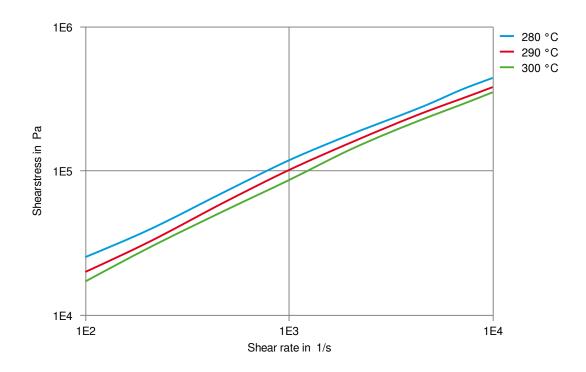


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Shearstress-shear rate

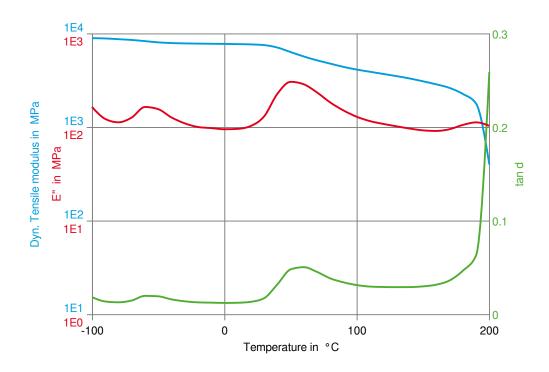


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Dynamic Tensile modulus-temperature (dry)

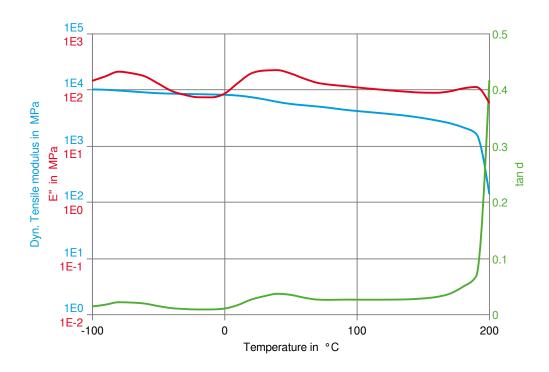


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Dynamic Tensile modulus-temperature (cond.)



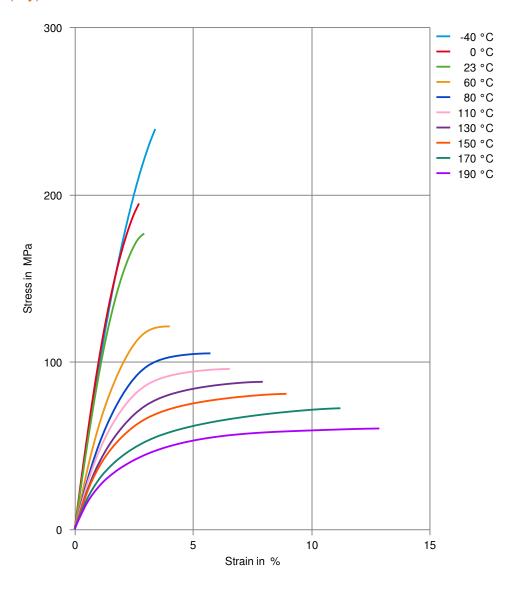
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Stress-strain (dry)



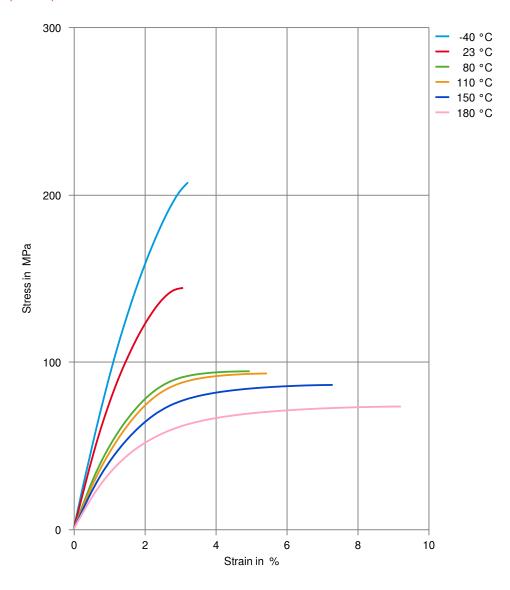
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Stress-strain (cond.)



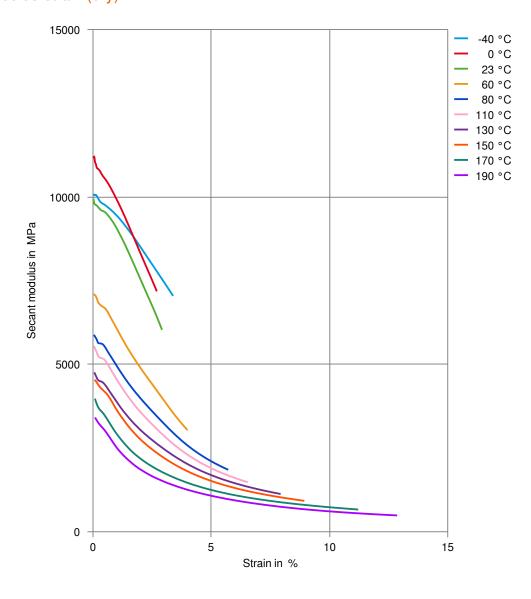
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Secant modulus-strain (dry)



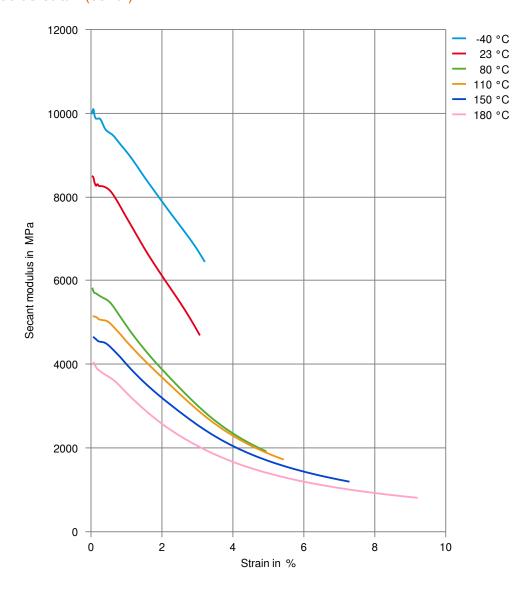
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Secant modulus-strain (cond.)

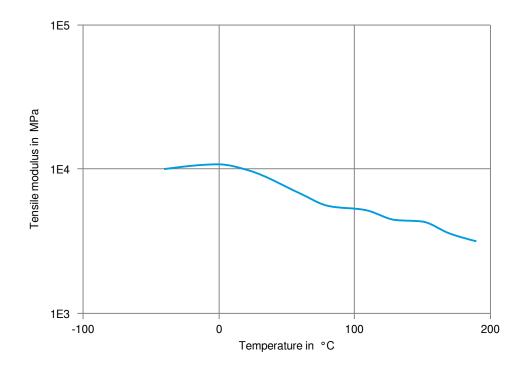


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Tensile modulus-temperature (dry)

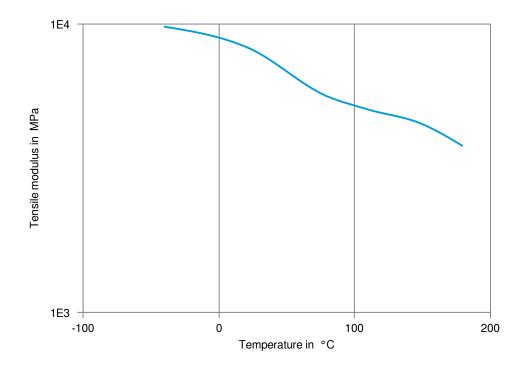


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Tensile modulus-temperature (cond.)



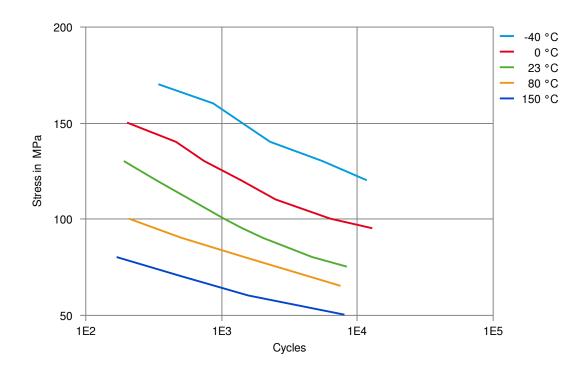
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LONG CHAIN POLYAMIDE RESIN

Tensile Fatigue, 10Hz, R=0.1 @ 0mm (cond.)



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Zytel® 77G33EFT BK276 LONG CHAIN POLYAMIDE RESIN

Mineral oils

Mineral oils

✓ SAE 10W40 multigrade motor oil, 130°C

Other

✓ Ethylene Glycol (50% by mass) in water, 108°C

Symbols used:

✓ possibly resistant

Defined as: Supplier has sufficient indication that contact with chemical can be potentially accepted under the intended use conditions and expected service life. Criteria for assessment have to be indicated (e.g. surface aspect, volume change, property change).

★ not recommended - see explanation

Defined as: Not recommended for general use. However, short-term exposure under certain restricted conditions could be acceptable (e.g. fast cleaning with thorough rinsing, spills, wiping, vapor exposure).

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Revised: 2025-02-12 Source: Celanese Materials Database

NOTICE TO USERS: Values shown are based on testing of laboratory test specimens and represent data that fall within the standard range of properties for natural material. These values alone do not represent a sufficient basis for any part design and are not intended for use in establishing maximum, minimum, or ranges of values for specification purposes. Colourants or other additives may processing conditions and environmental exposure. Other than those products expressly identified as medical grade (including by MT® product designation or otherwise), Celanese's products are not intended for use in medical or dental implants. Regardless of any such product designation, any determination of the suitability of a particular material and part design for any use contemplated by the users and the manner of such use is the sole responsibility of the users, who must assure themselves that the material as subsequently processed meets the needs of their particular product or use. To the best of our knowledge, the information contained in this publication is accurate; however, we do not assume any liability whatsoever for the accuracy and completeness of such information. The information contained in this publication should not be construed as a promise or guarantee of specific properties of our products. It is the sole responsibility of the users to investigate whether any existing patents are infringed by the use of the materials mentioned in this publication. Moreover, there is a need to reduce human exposure to many materials to the lowest practical limits in view of possible adverse effects. To the extent that any hazards may have been mentioned in this publication, we neither suggest nor guarantee that such hazards are the only ones that exist. We recommend that persons intending to rely on any recommendation or to use any equipment, processing technique or material mentioned in this publication should satisfy themselves that they can meet all applicable safety and health standards. We strongly recommend that users

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