



LONG CHAIN POLYAMIDE RESIN

Zytel® RS78G33FHS BK083 is a 33% glass reinforced, biobased, heat stabilized, polyamide 610 resin.

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Resin Identification	PA610-GF33		ISO 1043
Part Marking Code	>PA610-GF33<		ISO 11469
ISO designation	ISO 16396-PA610,GF33,M1CGH,S14-100		
Biobased carbon content	≥60 ^{[C}	%	ISO 16620-2
[C]: Calculated			
Rheological properties	dn/oond		
	dry/cond.		
Melt mass-flow rate	18/*	g/10min	ISO 1133
Melt mass-flow rate, Temperature	250/*	°C	
Melt mass-flow rate, Load	10/*	kg	100 004 4 0577
Moulding shrinkage, parallel	0.3/-	%	ISO 294-4, 2577
Moulding shrinkage, normal	0.6/-	%	ISO 294-4, 2577
Typical mechanical properties	dry/cond.		
Tensile modulus	10200/8200	MPa	ISO 527-1/-2
Tensile stress at break, 5mm/min	189/139	MPa	ISO 527-1/-2
Tensile strain at break, 5mm/min	3.1/4.3	%	ISO 527-1/-2
Flexural modulus	9100/7500	MPa	ISO 178
Flexural strength	280/220	MPa	ISO 178
Charpy impact strength, 23°C	90/83	kJ/m²	ISO 179/1eU
Charpy impact strength, -30°C	74/72	kJ/m²	ISO 179/1eU
Charpy notched impact strength, 23°C	13/13	kJ/m²	ISO 179/1eA
Charpy notched impact strength, -30°C	11/11	kJ/m²	ISO 179/1eA
Poisson's ratio	0.34/0.34		
Thermal properties	dry/cond.		
Melting temperature, 10°C/min	225/*	°C	ISO 11357-1/-3
Glass transition temperature, 10°C/min	60/50	°C	ISO 11357-1/-3
Temperature of deflection under load, 1.8 MPa	209/*	°C	ISO 75-1/-2
Coeff. of linear therm. expansion, parallel, -40-23°C	21/*	E-6/K	ISO 11359-1/-2
Coefficient of linear thermal expansion	19/*	E-6/K	ISO 11359-1/-2
(CLTE), parallel	,	_ 0,	
Coeff. of linear therm. expansion, parallel, 55-160°C	14/*	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, normal, -40-23°C	79/*	E-6/K	ISO 11359-1/-2
Coefficient of linear thermal expansion (CLTE),	97/*	E-6/K	ISO 11359-1/-2
normal			
Coeff. of linear therm. expansion, normal, 55-160°C	142/*	E-6/K	ISO 11359-1/-2
Thermal conductivity, flow	0.41	W/(m K)	ISO 22007-2
Specific heat capacity of melt	2130	J/(kg K)	ISO 22007-4
Specific heat capacity solid	1120	J/(kg K)	ISO 22007-4
TGA curve	available		ISO 11359-1/-2

Printed: 2025-05-29 Page: 1 of 11





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Flammability

FMVSS Class	В	ISO 3795 (FMVSS 302)
Burning rate, Thickness 1 mm	<80 mm/min	ISO 3795 (FMVSS 302)

Electrical properties

Electrical properties	dry/cond.		
Volume resistivity	4E12/-	Ohm.m	IEC 62631-3-1
Surface resistivity	*/4E12	Ohm	IEC 62631-3-2
Electric strength	35/-	kV/mm	IEC 60243-1
Comparative tracking index	575/-		IEC 60112

Physical/Other properties

Physical/Other properties	dry/cond.		
Humidity absorption, 2mm	1.1/*	%	Sim. to ISO 62
Water absorption, 2mm	2.9/*	%	Sim. to ISO 62
Water absorption, Immersion 24h	0.9/*	%	Sim. to ISO 62
Density	1340/-	kg/m³	ISO 1183

Injection

Drying Temperature	80	°C
Drying Time, Dehumidified Dryer	2 - 4	h
Processing Moisture Content	≤0.15	%
Melt Temperature Optimum	285	°C
Min. melt temperature	270	°C
Max. melt temperature	300	°C
Mold Temperature Optimum	95	°C
Min. mould temperature	70	°C
Max. mould temperature	120	°C
Ejection temperature	191	°C

Characteristics

Processing Injection Moulding

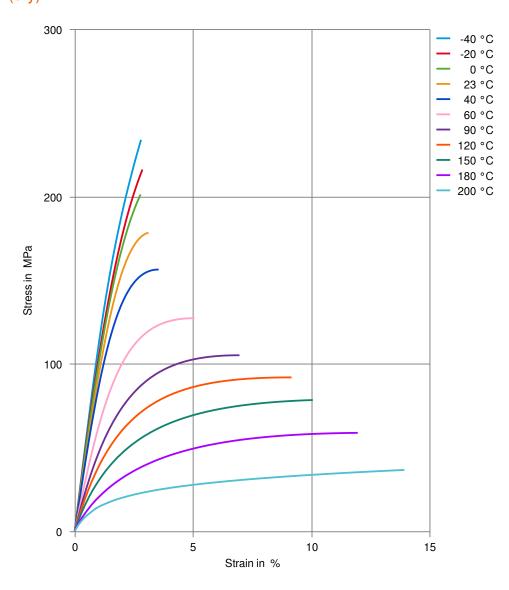
Sustainability **Bio-Content**

Printed: 2025-05-29 Page: 2 of 11





Stress-strain (dry)

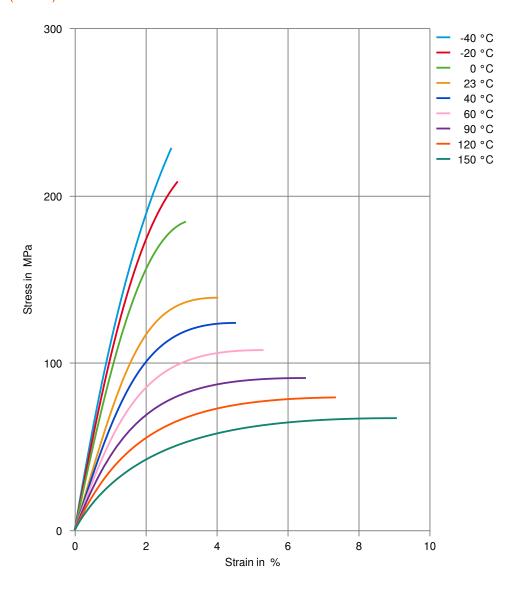


Printed: 2025-05-29 Page: 3 of 11





Stress-strain (cond.)

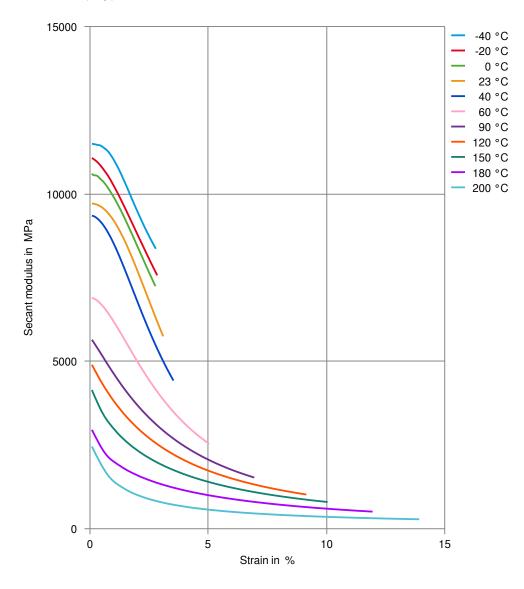


Printed: 2025-05-29 Page: 4 of 11





Secant modulus-strain (dry)

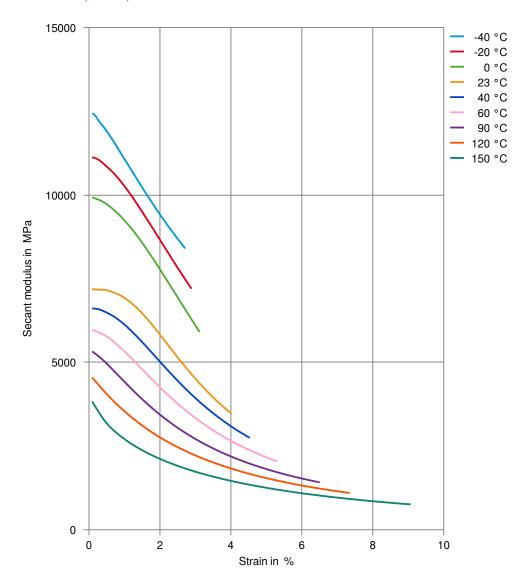


Printed: 2025-05-29 Page: 5 of 11





Secant modulus-strain (cond.)

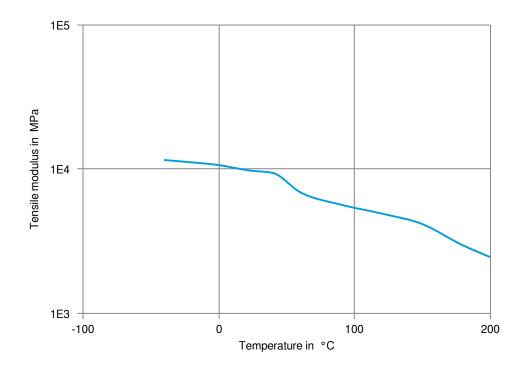


Printed: 2025-05-29 Page: 6 of 11





Tensile modulus-temperature (dry)

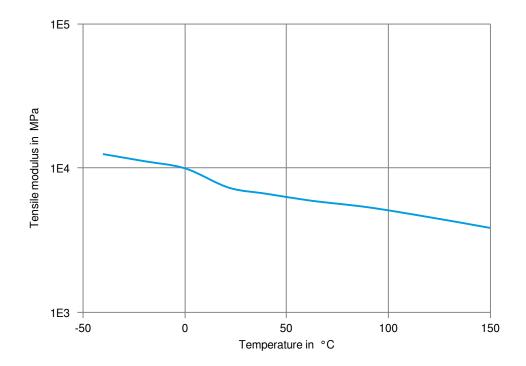


Printed: 2025-05-29 Page: 7 of 11





Tensile modulus-temperature (cond.)

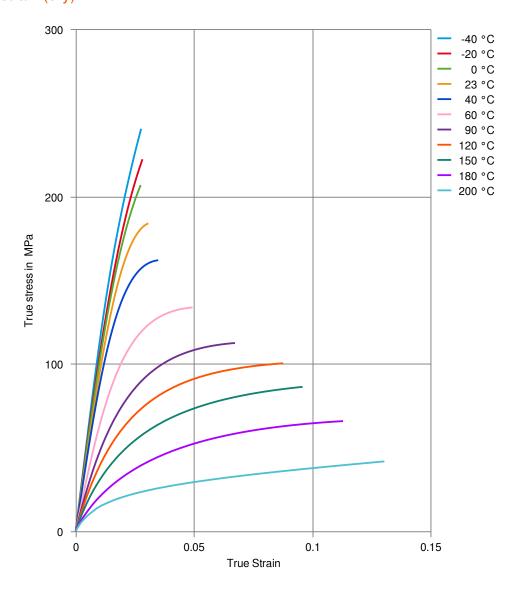


Printed: 2025-05-29 Page: 8 of 11





True stress-strain (dry)

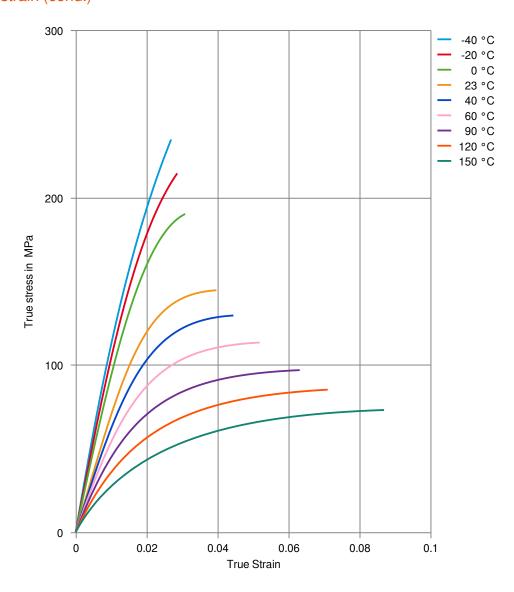


Printed: 2025-05-29 Page: 9 of 11





True stress-strain (cond.)



Printed: 2025-05-29 Page: 10 of 11

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Zytel® RS78G33FHS BK083

Chemical Media Resistance

Other

- ✓ Ethylene Glycol (50% by mass) in water, 108°C
- ✓ Coolant Glysantin G48, 1:1 in water, 125°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).

x 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).

Printed: 2025-05-29 Page: 11 of 11

Revised: 2025-04-23 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 cause significant variations in data values. Properties of moulded parts can be influenced by a wide variety of factors including, but not limited to, material selection, additives, part design, 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 e

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