

# CELSTRAN® PA66-GF60-02 AD3002 BLACK

## CELSTRAN® Long Fibre

Material code according to ISO 1043-1: PA66

Heat stabilized Nylon 66 reinforced by 60 weight percent long glass fibers. The pellets are cylindrical and normally as well as the embedded fibers 10 mm long.

Parts molded of CELSTRAN have outstanding mechanical properties such as high strength and stiffness combined with high heat deflection. The notched impact strength is increased at elevated and low temperatures due to the fiber skeleton built in the parts. The long fiber reinforcement reduces creep significantly.

The very isotropic shrinkage in the molded parts minimizes the warpage.

Complex parts can be manufactured with high reproducibility by injection molding.

Can be used for substituting die cast metal with the advantage of Weight reduction, no corrosion problems, no post treatment.

### Product information

Resin Identification	PA66-LGF60	ISO 1043
Part Marking Code	>PA66-LGF60<	ISO 11469

### Typical mechanical properties

	dry/cond.		
Tensile modulus	21000 / 17000	MPa	ISO 527-1/-2
Tensile stress at break, 5mm/min	258 / 203	MPa	ISO 527-1/-2
Tensile strain at break, 5mm/min	1.5 / 1.6	%	ISO 527-1/-2
Flexural modulus	19200 / 16000	MPa	ISO 178
Flexural strength	420 / 330	MPa	ISO 178
Flexural strain at failure	3 / 3.3	%	ISO 178
Charpy impact strength, 23°C	100 / 83	kJ/m <sup>2</sup>	ISO 179/1eU
Charpy impact strength, -30°C	85 / -	kJ/m <sup>2</sup>	ISO 179/1eU
Charpy notched impact strength, 23°C	50 / 40	kJ/m <sup>2</sup>	ISO 179/1eA
Charpy notched impact strength, -30°C	52 / -	kJ/m <sup>2</sup>	ISO 179/1eA
Puncture - maximum force, 23°C	2820 / -	N	ISO 6603-2
Puncture energy, 23°C	17.6 / -	J	ISO 6603-2
Poisson's ratio	0.33 / 0.33 <sup>[C]</sup>		

[C]: Calculated

### Thermal properties

	dry/cond.		
Temperature of deflection under load, 1.8 MPa	260 / *	°C	ISO 75-1/-2
Temperature of deflection under load, 8 MPa	250 / *	°C	ISO 75-1/-2
Coefficient of linear thermal expansion (CLTE), parallel	14 / *	E-6/K	ISO 11359-1/-2
Coefficient of linear thermal expansion (CLTE), normal	60 / *	E-6/K	ISO 11359-1/-2

### Physical/Other properties

	dry/cond.		
Density	1690 / -	kg/m <sup>3</sup>	ISO 1183

### Injection

Drying Recommended	yes
Drying Temperature	80 °C
Drying Time, Dehumidified Dryer	2 - 4 h
Processing Moisture Content	≤0.2 %
Melt Temperature Optimum	295 °C

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Min. melt temperature	285 °C
Max. melt temperature	305 °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
Back pressure	3 MPa
Ejection temperature	218 °C

### Characteristics

Processing	Injection Moulding
Delivery form	Pellets
Special characteristics	Heat stabilised or stable to heat

### Additional information

Processing Notes

### Pre-Drying

CELSTAN PA should in principle be predried. Because of the necessary low maximum residual moisture content the use of dry air dryers is recommended. The dew point should be  $\leq -30^{\circ}\text{C}$ . The time between drying and processing should be as short as possible.

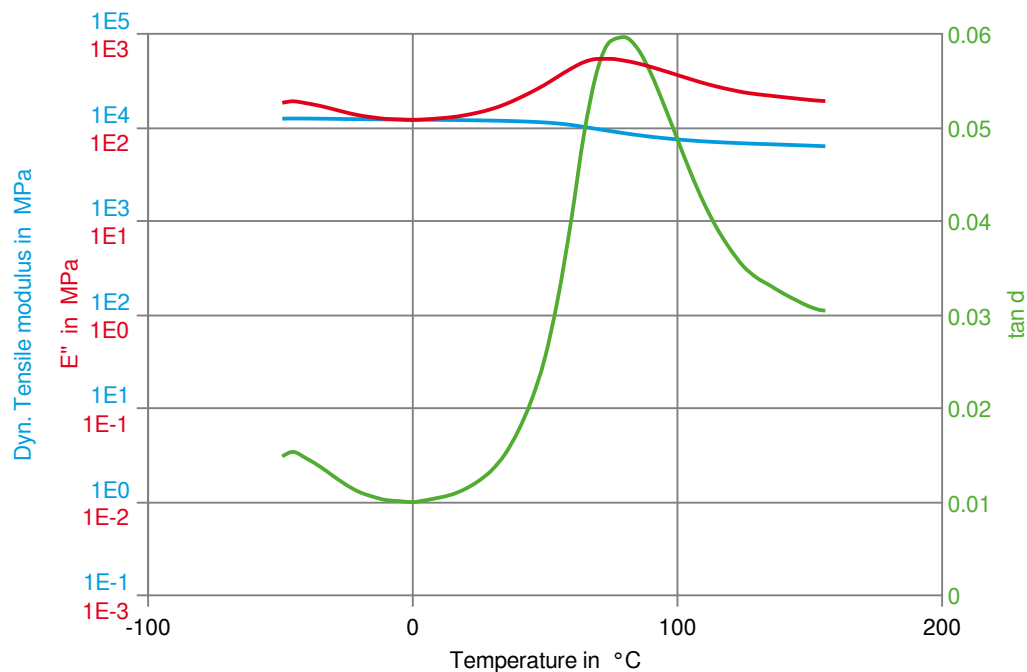
### Automotive

OEM	STANDARD	ADDITIONAL INFORMATION
Ford	WSB-M4D680-A	
General Motors	GMW17810P-PA66-GF60	Black (Limited Approval)
Stellantis - Chrysler	MS.50017 / CPN-4329	Technical Black

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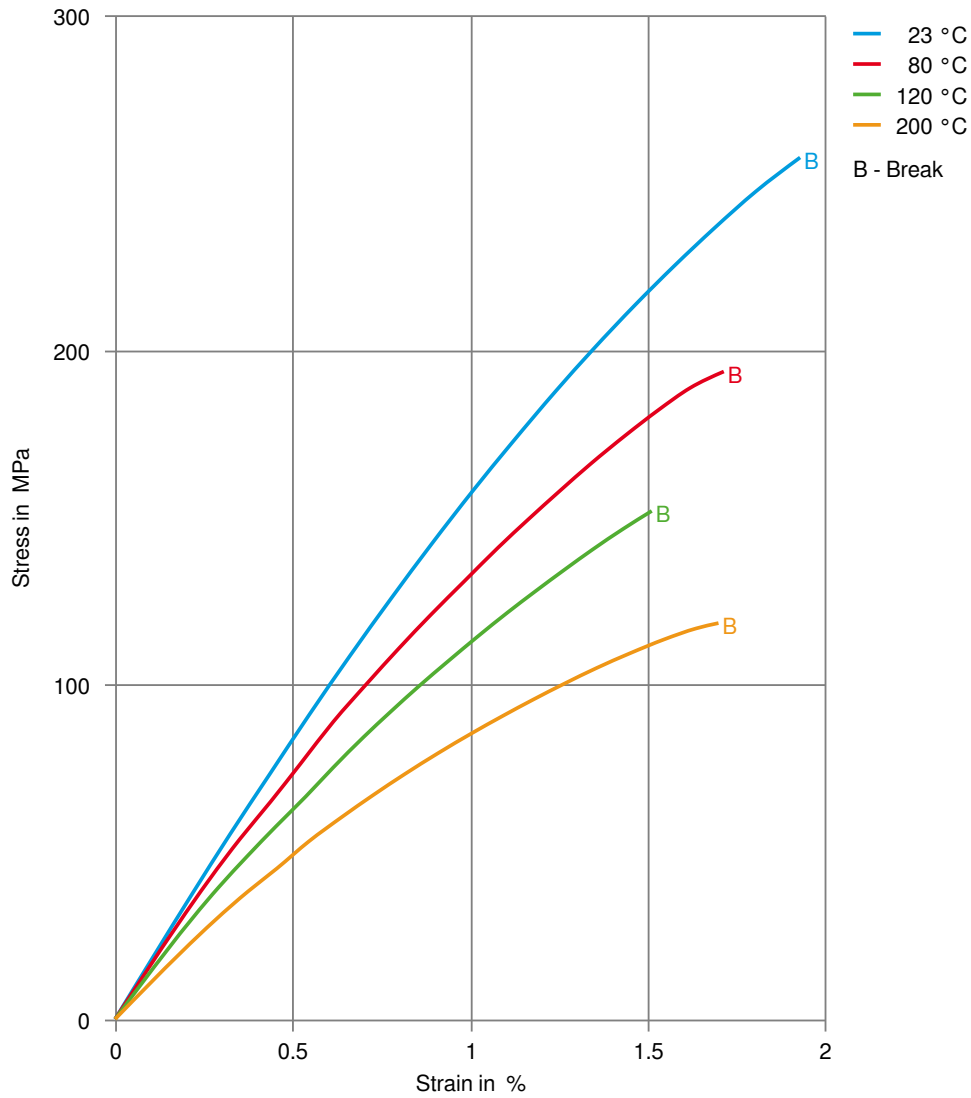
### Dynamic Tensile modulus-temperature (dry)



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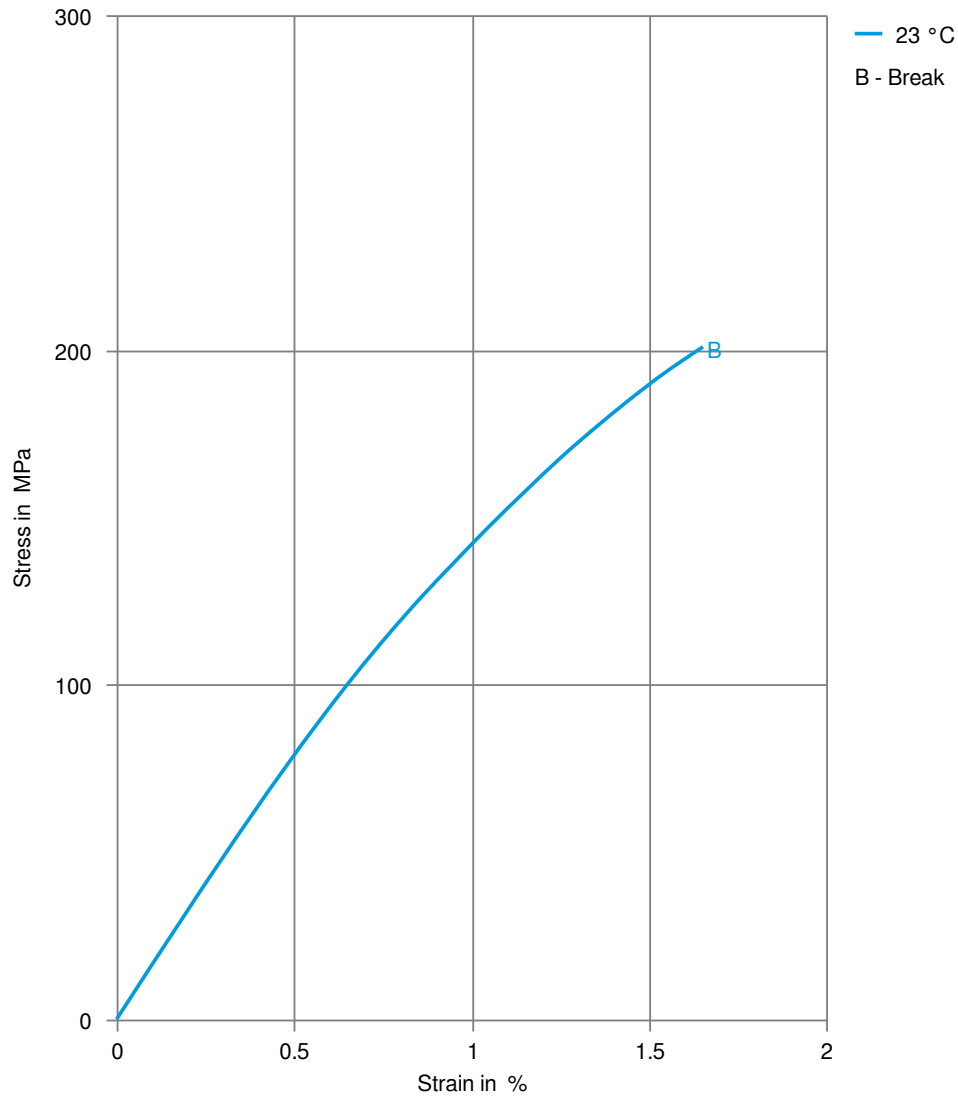
### Stress-strain (dry)



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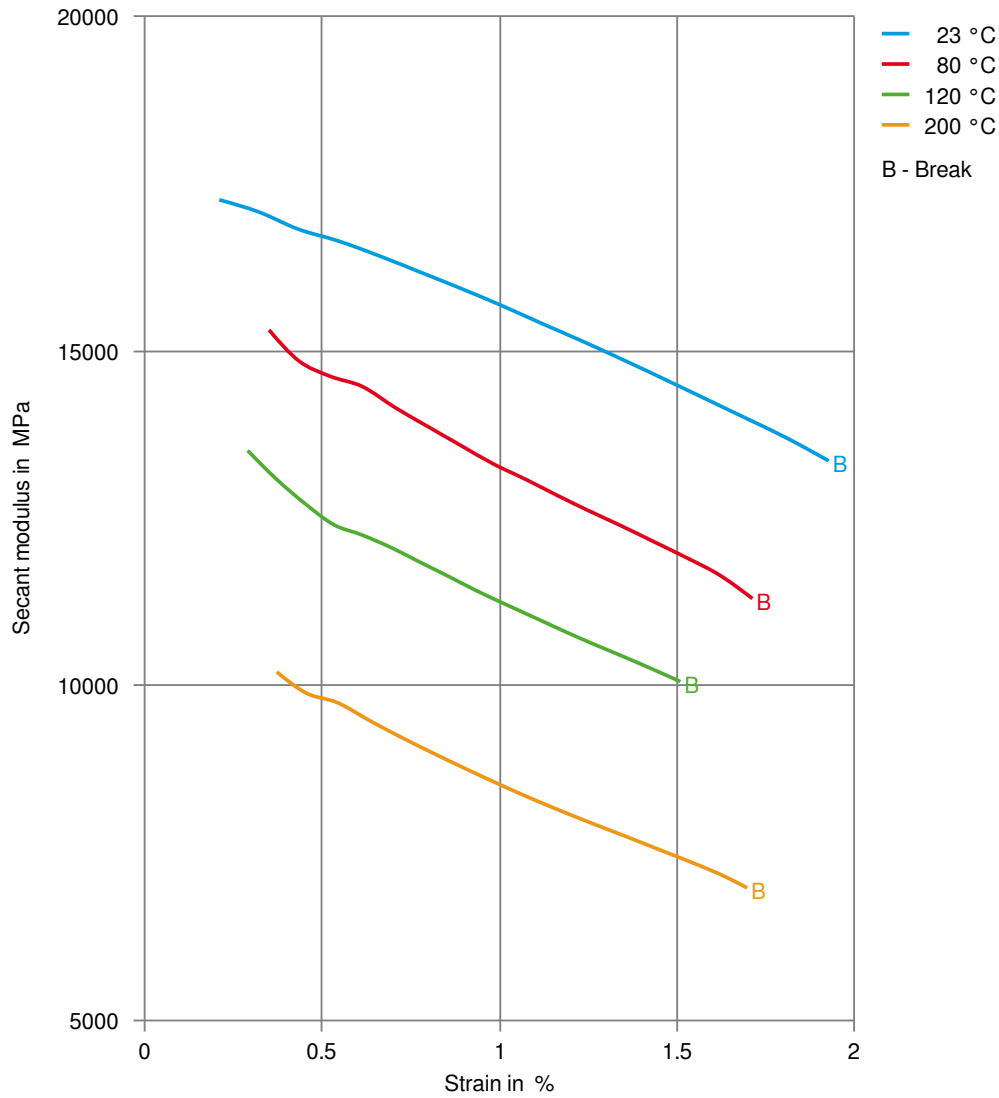
### Stress-strain (cond.)



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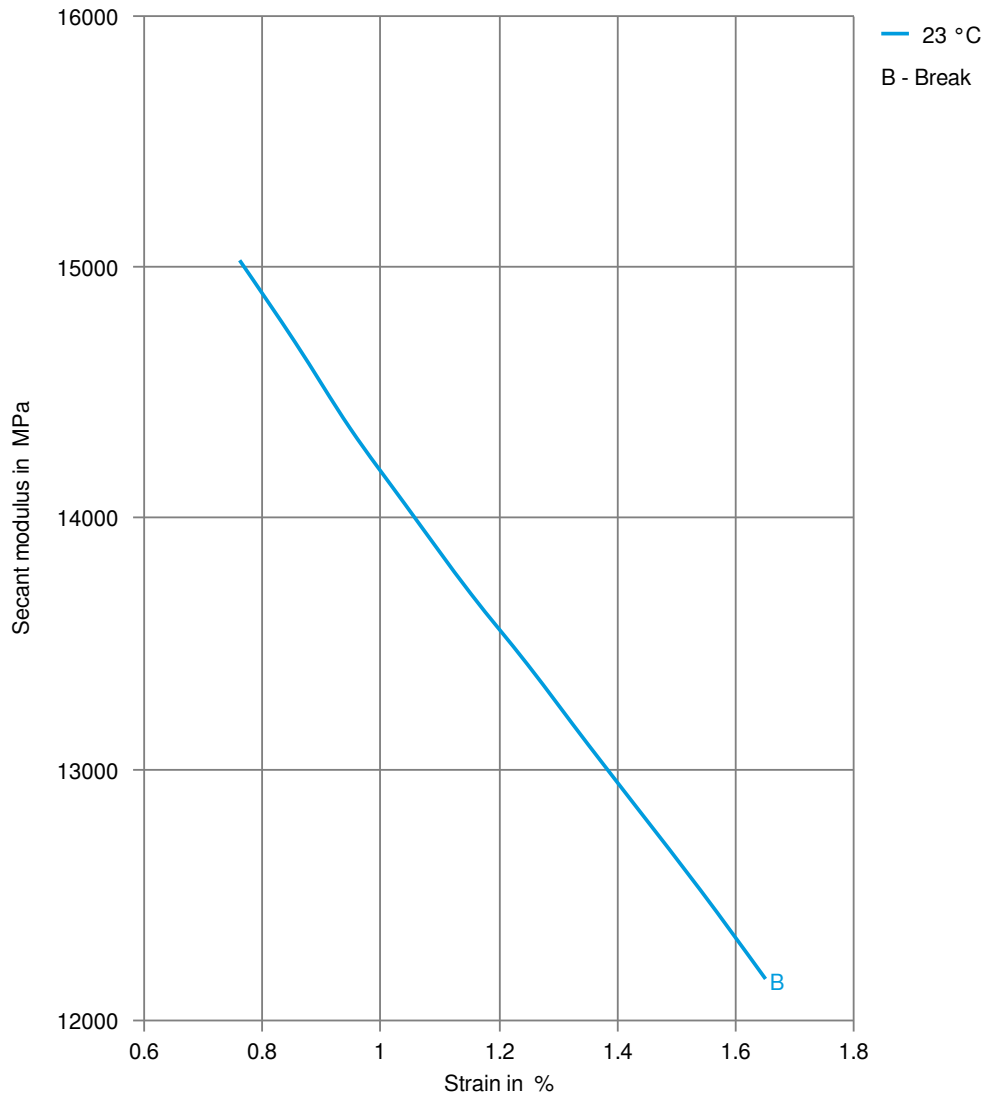
### Secant modulus-strain (dry)



# CELSTRAN® PA66-GF60-02 AD3002 BLACK

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### Secant modulus-strain (cond.)



Printed: 2025-05-29

Page: 7 of 7

Revised: 2025-05-15 Source: Celanese Materials Database

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