

# Zytel® HTNFR53G50NH BK337

## HIGH PERFORMANCE POLYAMIDE RESIN

Zytel® HTNFR53G50NH BK337 is a 50% glass reinforced, flame retardant high performance polyamide resin for structural applications. It uses a non-halogenated flame retardant.

### Product information

Resin Identification	PA-GF50FR(40)	ISO 1043
Part Marking Code	>PA-GF50FR(40)<	ISO 11469
Part Marking Code	>PPA-GF50FR(40)<	SAE J1344

### Rheological properties

	dry/cond.		
Moulding shrinkage, parallel	0.2 / -	%	ISO 294-4, 2577
Moulding shrinkage, normal	0.5 / -	%	ISO 294-4, 2577

### Typical mechanical properties

	dry/cond.		
Tensile modulus	17700 / -	MPa	ISO 527-1/-2
Tensile stress at break, 5mm/min	195 / -	MPa	ISO 527-1/-2
Tensile strain at break, 5mm/min	2.5 / -	%	ISO 527-1/-2
Flexural modulus	17200 / -	MPa	ISO 178
Flexural strength	310 / -	MPa	ISO 178
Charpy impact strength, 23°C	72 / -	kJ/m <sup>2</sup>	ISO 179/1eU
Charpy impact strength, -40°C	73 / -	kJ/m <sup>2</sup>	ISO 179/1eU
Charpy notched impact strength, 23°C	12 / -	kJ/m <sup>2</sup>	ISO 179/1eA
Charpy notched impact strength, -40°C	12 / -	kJ/m <sup>2</sup>	ISO 179/1eA
Poisson's ratio	0.33 / -		

### Thermal properties

	dry/cond.		
Melting temperature, 10°C/min	258 / *	°C	ISO 11357-1/-3
Temperature of deflection under load, 1.8 MPa	236 / *	°C	ISO 75-1/-2
Coeff. of linear therm. expansion, parallel, -40-23°C	9 / *	E-6/K	ISO 11359-1/-2
Coefficient of linear thermal expansion (CLTE), parallel	14 / *	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, parallel, 55-160°C	13 / *	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, normal, -40-23°C	31 / *	E-6/K	ISO 11359-1/-2
Coefficient of linear thermal expansion (CLTE), normal	43 / *	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, normal, 55-160°C	84 / *	E-6/K	ISO 11359-1/-2

### Flammability

	dry/cond.		
Burning Behav. at 1.5mm nom. thickn.	V-0 / *	class	IEC 60695-11-10

### Electrical properties

	dry/cond.		
Volume resistivity	>1E13 / -	Ohm.m	IEC 62631-3-1
Electric strength	31 / -	kV/mm	IEC 60243-1
Comparative tracking index	600 / -		IEC 60112

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### Physical/Other properties

	dry/cond.		
Humidity absorption, 2mm	1.4 / *	%	Sim. to ISO 62
Density	1640 / -	kg/m <sup>3</sup>	ISO 1183

### Injection

Drying Recommended	yes
Drying Temperature	100 °C
Drying Time, Dehumidified Dryer	6 - 8 h
Processing Moisture Content	≤0.1 %
Melt Temperature Optimum	290 °C
Min. melt temperature	280 °C
Max. melt temperature	300 °C
Min. mould temperature	90 °C
Max. mould temperature	110 °C

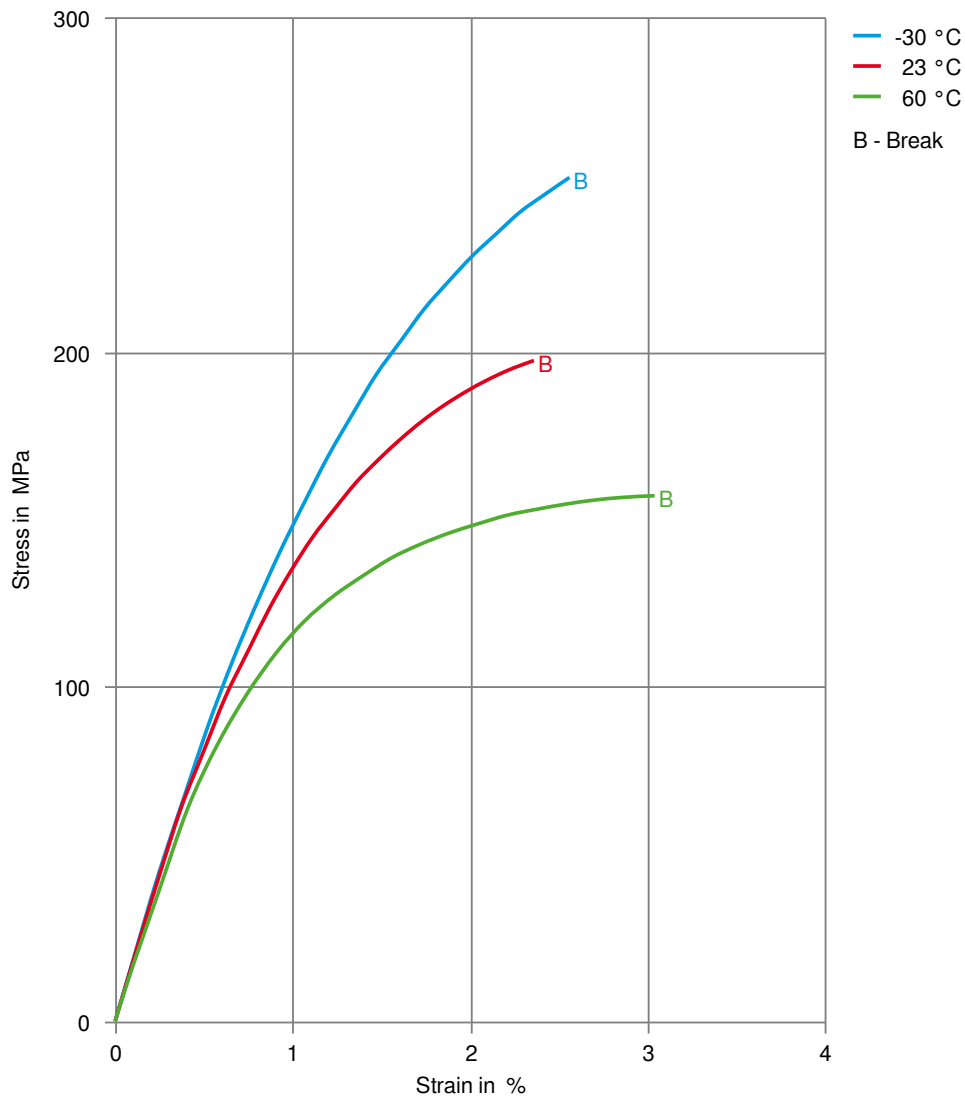
### Characteristics

Processing	Injection Moulding
Delivery form	Pellets
Additives	Release agent, Flame retardant, Non-halogenated/Red phosphorous free flame retardant
Special characteristics	Flame retardant

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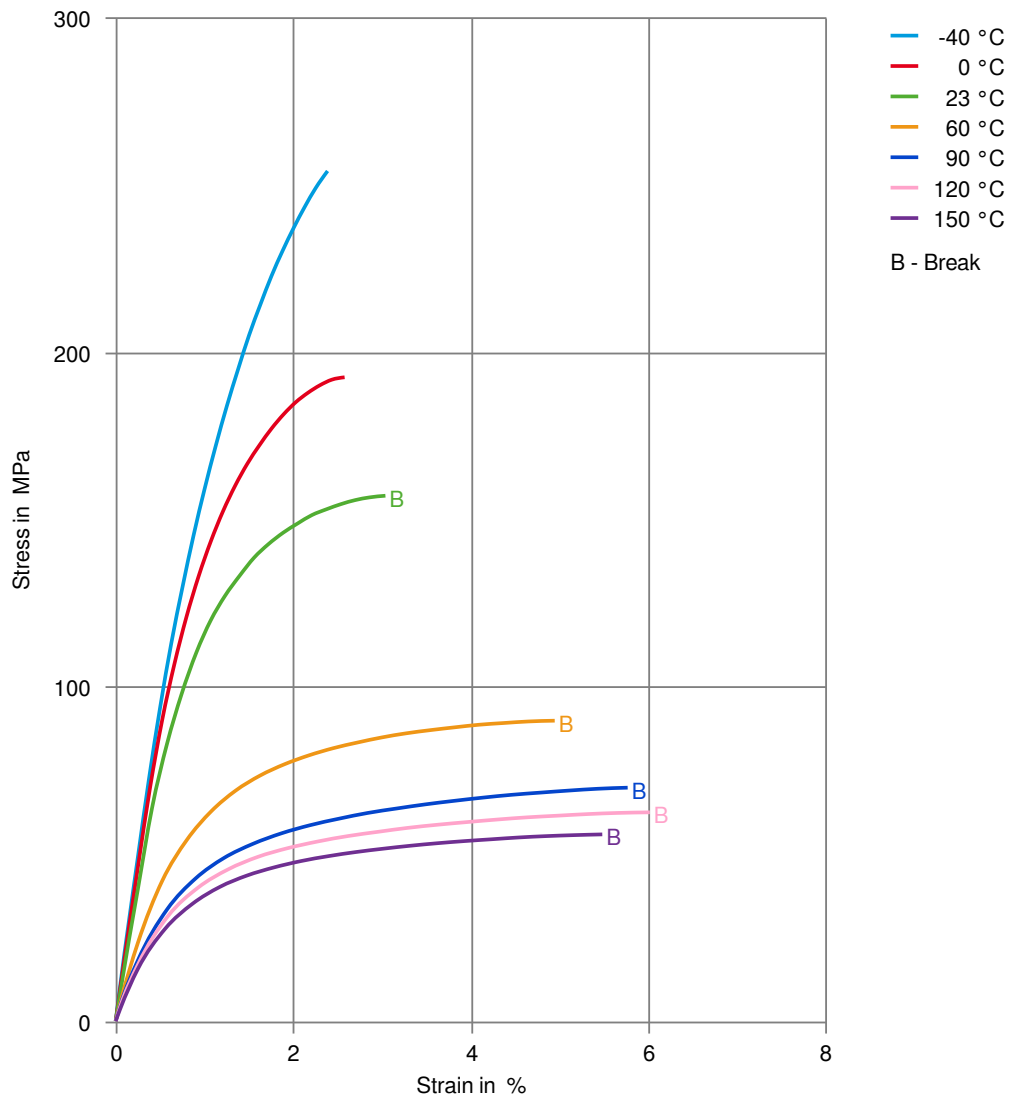
## Stress-strain (dry)



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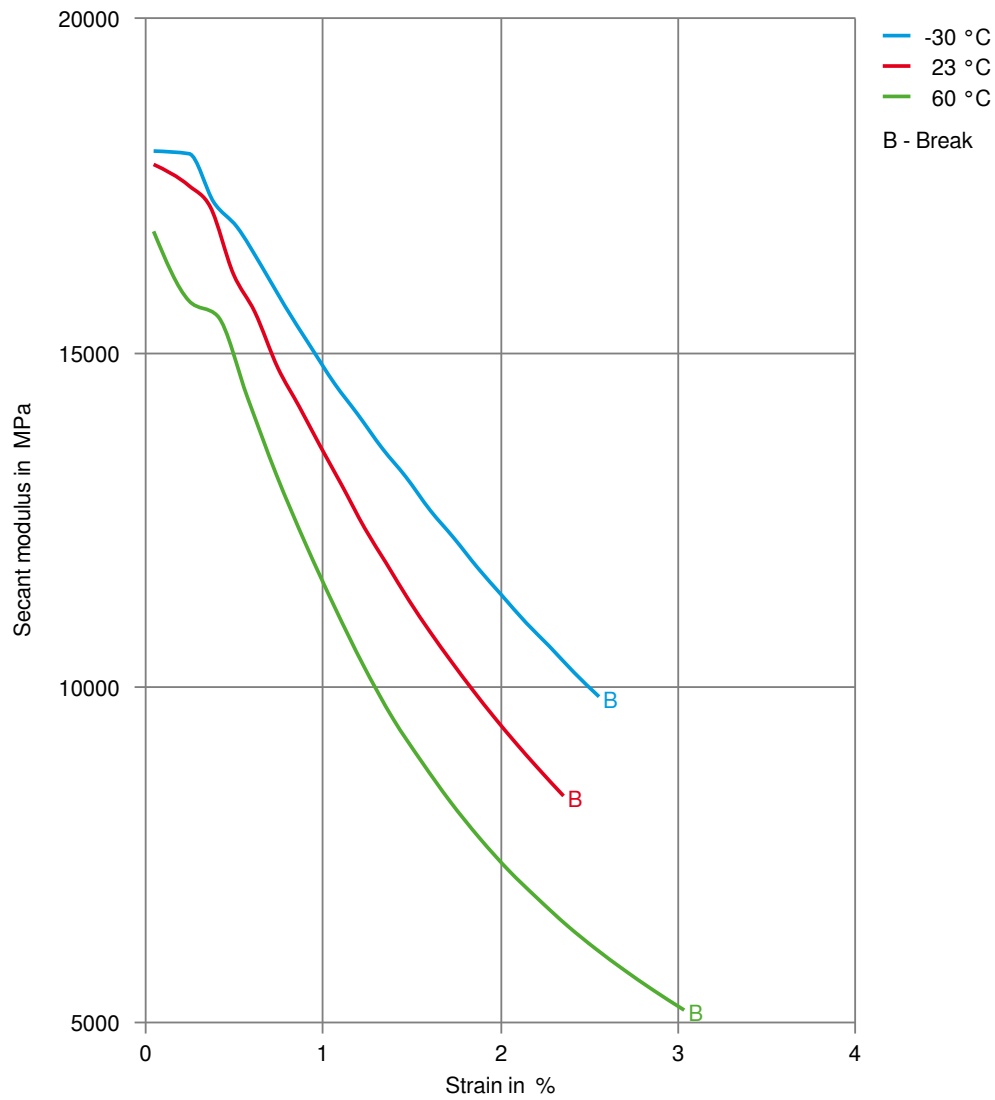
### Stress-strain (cond.)



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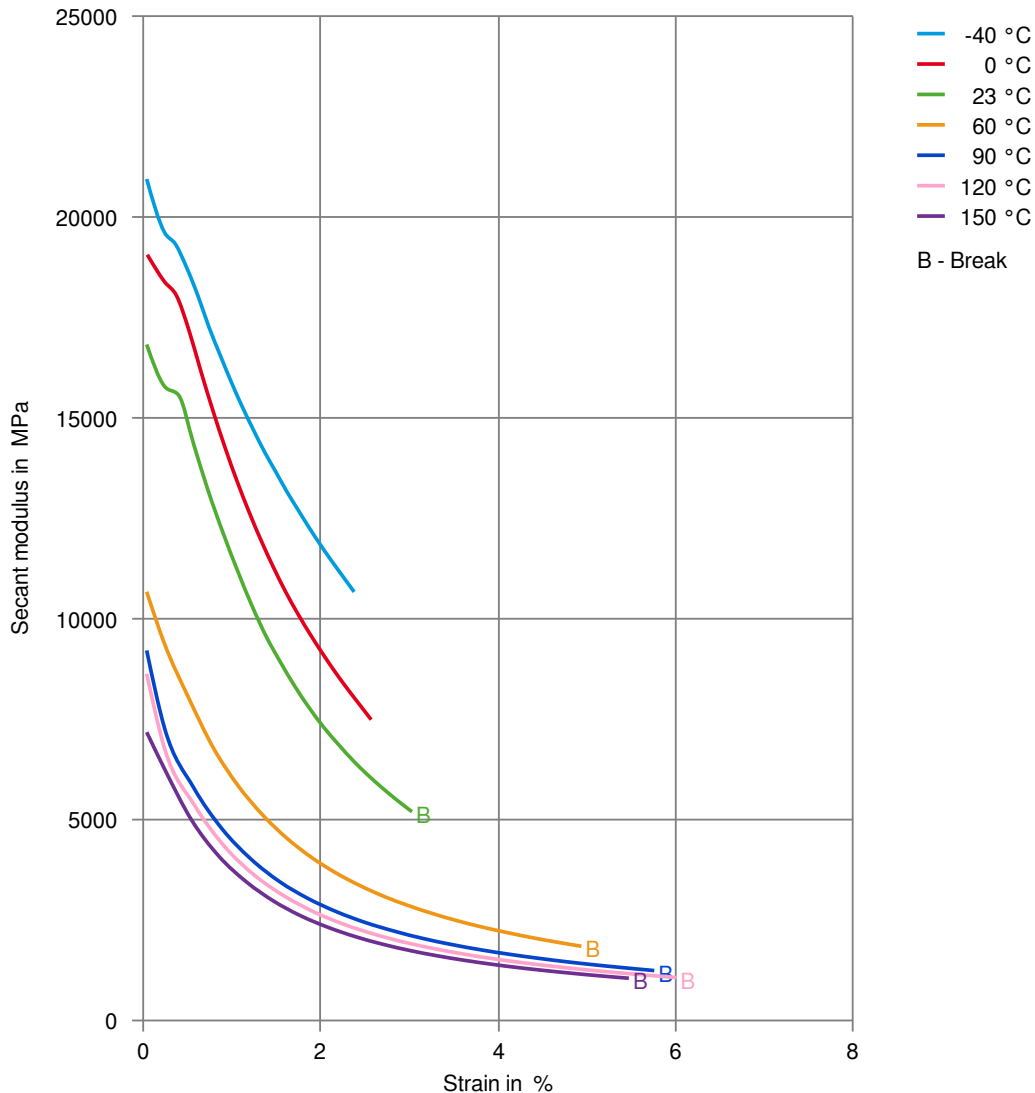
## Secant modulus-strain (dry)



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### Secant modulus-strain (cond.)



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