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Celanese
The chemistry inside innovation™

Zytel® HTN50G35HSL BK083 (PRELIMINARY)

HIGH PERFORMANCE POLYAMIDE RESIN

Zytel® HTN50G35HSL BK083 is a 35% glass reinforced, heat stabilised, lubricated, hydrolysis resistant high performance polyamide resin. It is also a PPA resin.

Product information

Resin Identification	PA6T/6I-GF35	ISO 1043
Part Marking Code	>PA6T/6I-GF35<	ISO 11469
Part Marking Code	>PPA-GF35<	SAE J1344

Rheological properties

	dry/cond.		
Moulding shrinkage, parallel	0.2 / -	%	ISO 294-4, 2577
Moulding shrinkage, normal	0.6 / -	%	ISO 294-4, 2577

Typical mechanical properties

	dry/cond.		
Tensile Modulus	12700 / 11800	MPa	ISO 527-1/-2
Stress at break, 5mm/min	240 / 210	MPa	ISO 527-1/-2
Strain at break, 5mm/min	2.5 / 2.6	%	ISO 527-1/-2
Flexural Modulus	12000 / -	MPa	ISO 178
Flexural Strength	351 / -	MPa	ISO 178
Flexural Stress at 3.5%	3.15 / -	MPa	ISO 178
Charpy impact strength, 23 °C	57 / 53	kJ/m^2	ISO 179/1eU
Charpy impact strength, -40 °C	45 / 39	kJ/m^2	ISO 179/1eU
Charpy notched impact strength, 23 °C	10 / 9	kJ/m^2	ISO 179/1eA
Charpy notched impact strength, -40 °C	10 / 9	kJ/m^2	ISO 179/1eA
Poisson's ratio	0.33 / 0.33		

Thermal properties

	dry/cond.		
Melting temperature, first heat	302 / *	°C	ISO 11357-1/-3
Coeff. of linear therm. expansion, parallel, -40-23 °C	19 / *	E-6/K	ISO 11359-1/-2
CLTE, Parallel, 23-55 °C(73-130 °F)	20 / -	E-6/K	ASTM E 831
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	50 / *	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, Normal,23-55 °C (73-130 °F)	54 / -	E-6/K	ASTM E 831
Coeff. of linear therm. expansion, normal, 55-160 °C	85 / *	E-6/K	ISO 11359-1/-2
TGA curve	available		ISO 11359-1/-2

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Electrical properties

	dry/cond.		
Relative permittivity, 100Hz	4.9 / -		IEC 62631-2-1
Relative permittivity, 1MHz	4.6 / -		IEC 62631-2-1
Dissipation factor, 100Hz	29.7 / -	E-4	IEC 62631-2-1
Dissipation factor, 1MHz	147 / -	E-4	IEC 62631-2-1
Volume resistivity	>1E13 / >1E13	Ohm.m	IEC 62631-3-1
Surface resistivity	* / >1E15	Ohm	IEC 62631-3-2
Electric strength	31.8 / -	kV/mm	IEC 60243-1

Other properties

	dry/cond.		
Humidity absorption, 2mm	1.7 / *	%	Sim. to ISO 62
Water absorption, 2mm	3.9 / *	%	Sim. to ISO 62
Density	1470 / -	kg/m^3	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	325	°C	Internal
Min. melt temperature	320	°C	
Max. melt temperature	330	°C	
Mold Temperature Optimum	150	°C	
Min. mould temperature	140[1]	°C	
Max. mould temperature	180	°C	

[1]: higher temperature needed for thinner sections

Characteristics

Additives	Release agent

Additional information

Injection molding

During molding, use proper protective equipment and adequate ventilation. Avoid exposure to fumes and limit the hold up time and temperature of the resin in the machine. Purge degraded resin carefully with HDPE.

When lower mold temperatures are used, the initial warpage and shrinkage may be lower, but the surface appearance and chemical resistance may be reduced, and the dimensional change may be greater when parts are subsequently heated.

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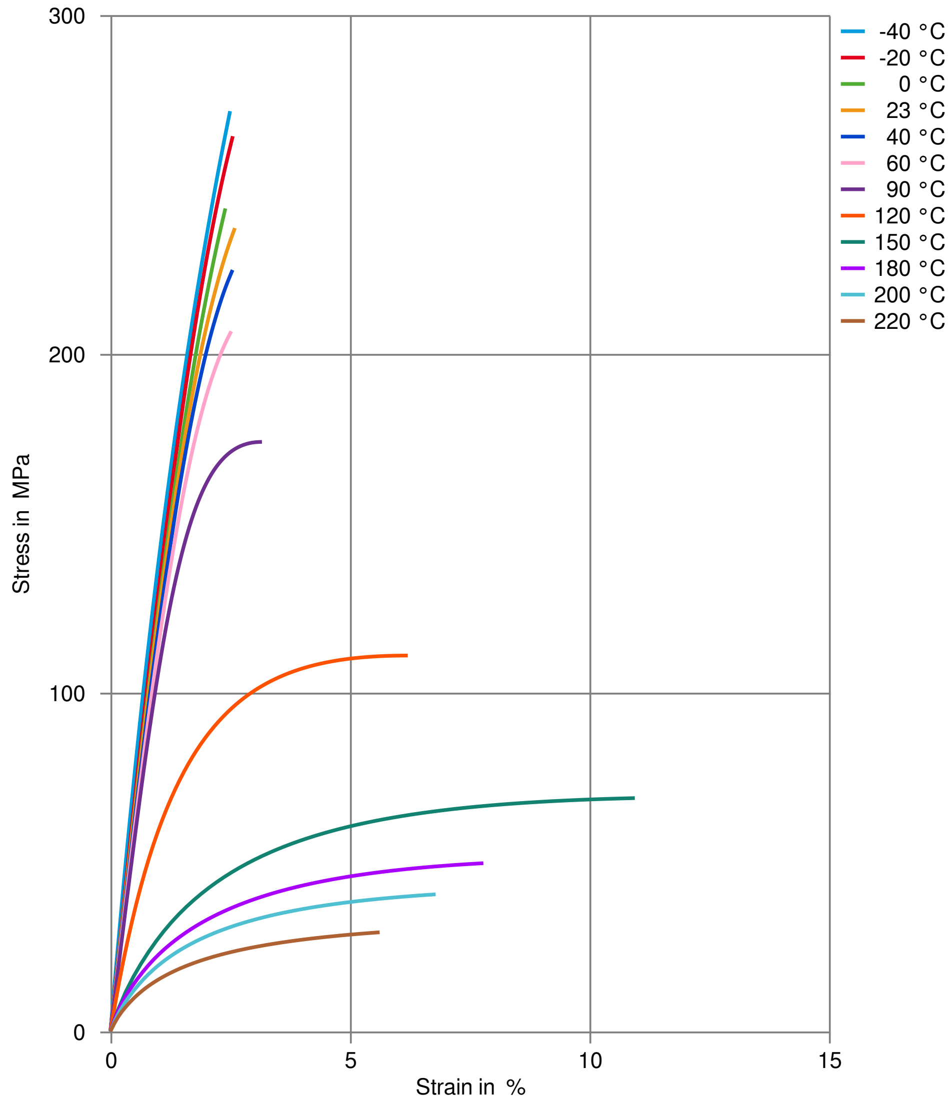
Stress-strain (dry)



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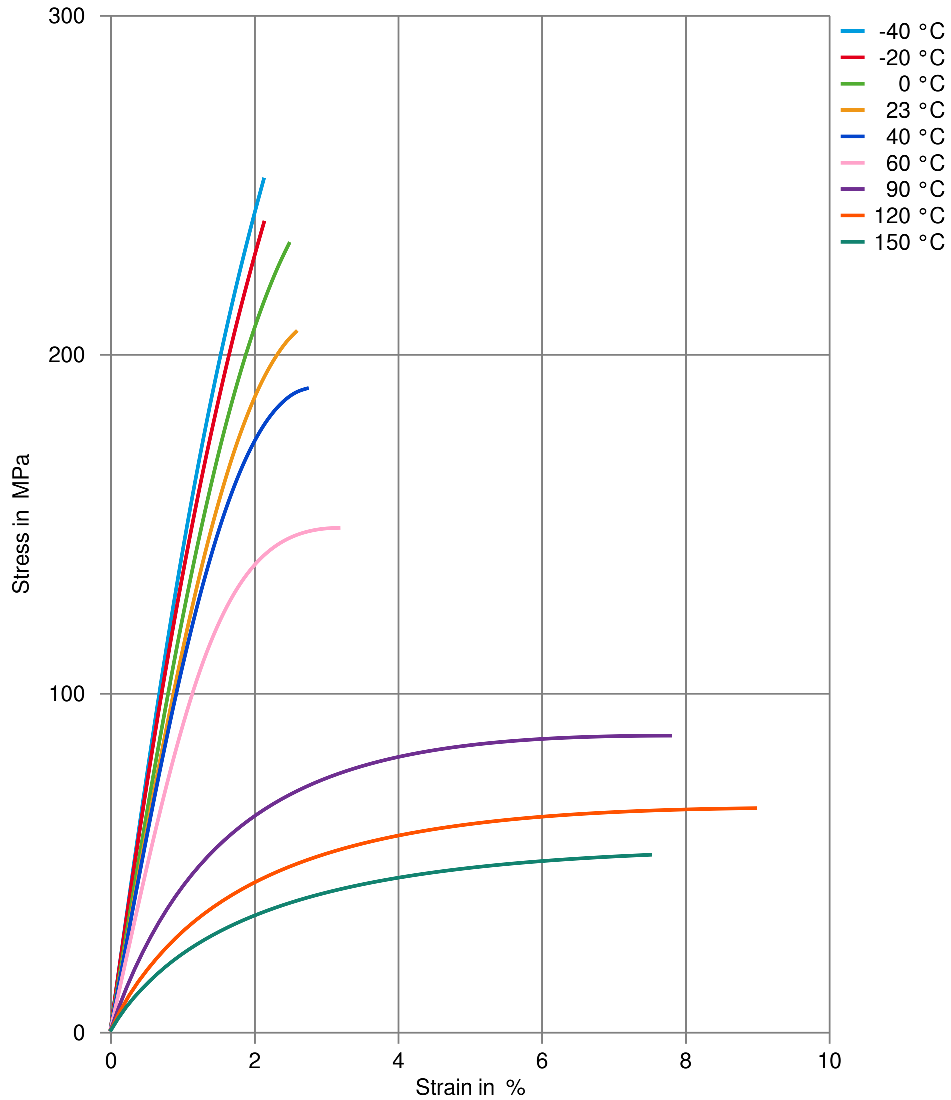
Stress-strain (cond.)



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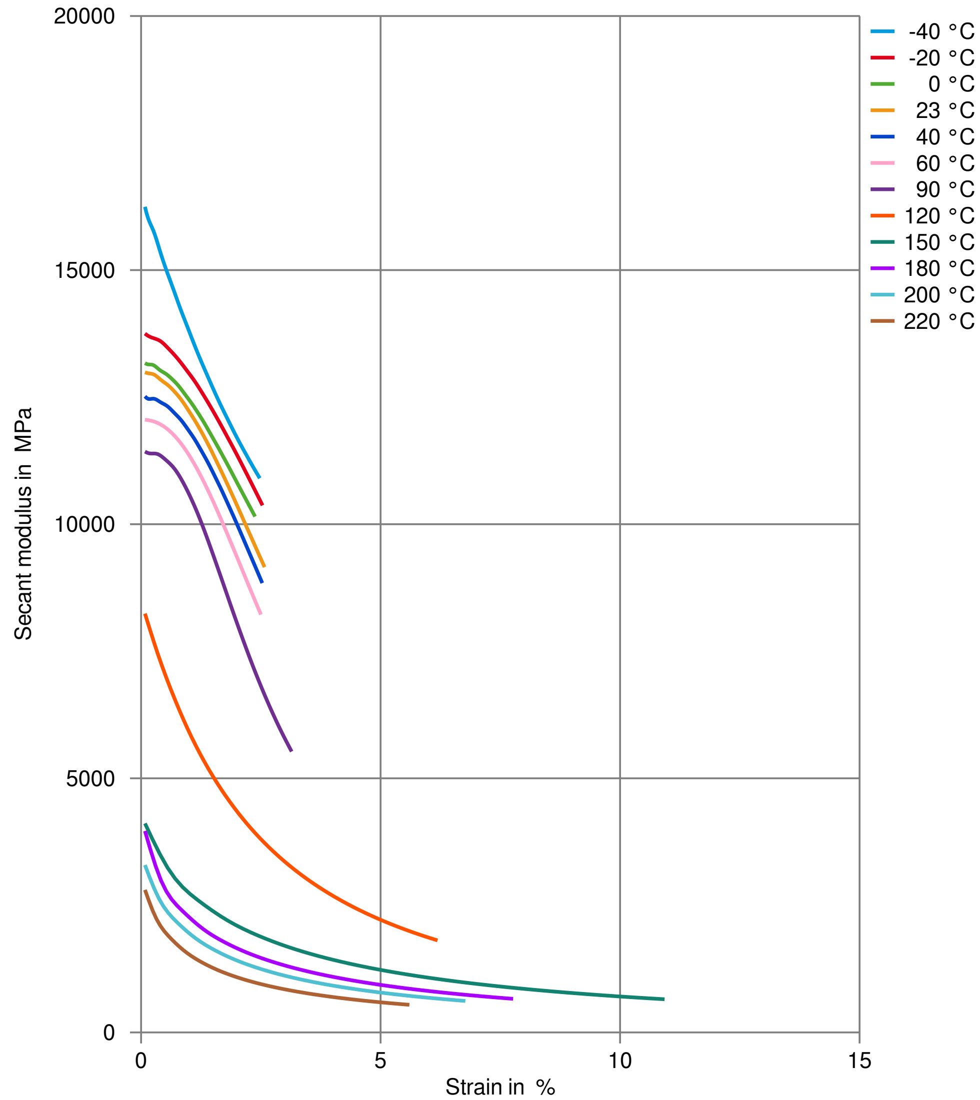
Secant modulus-strain (dry)



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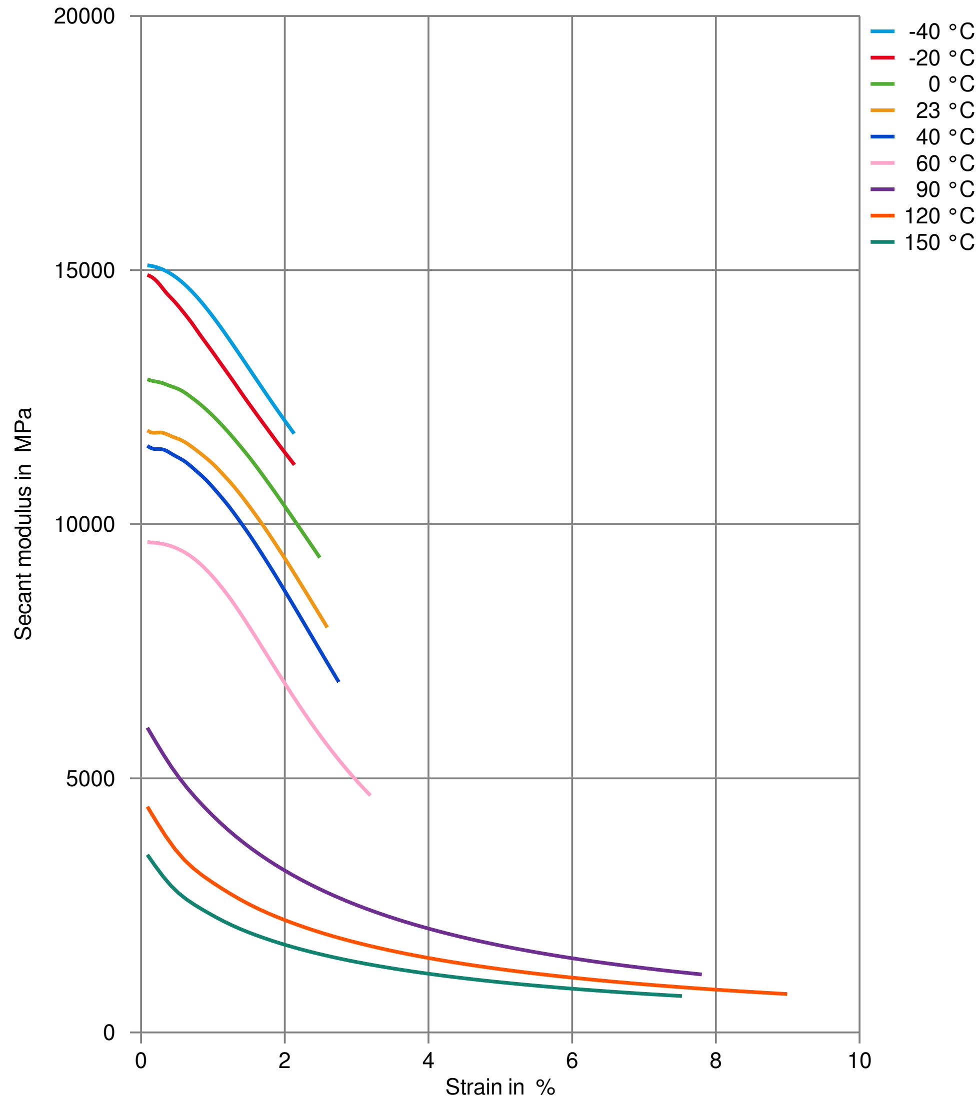
Secant modulus-strain (cond.)



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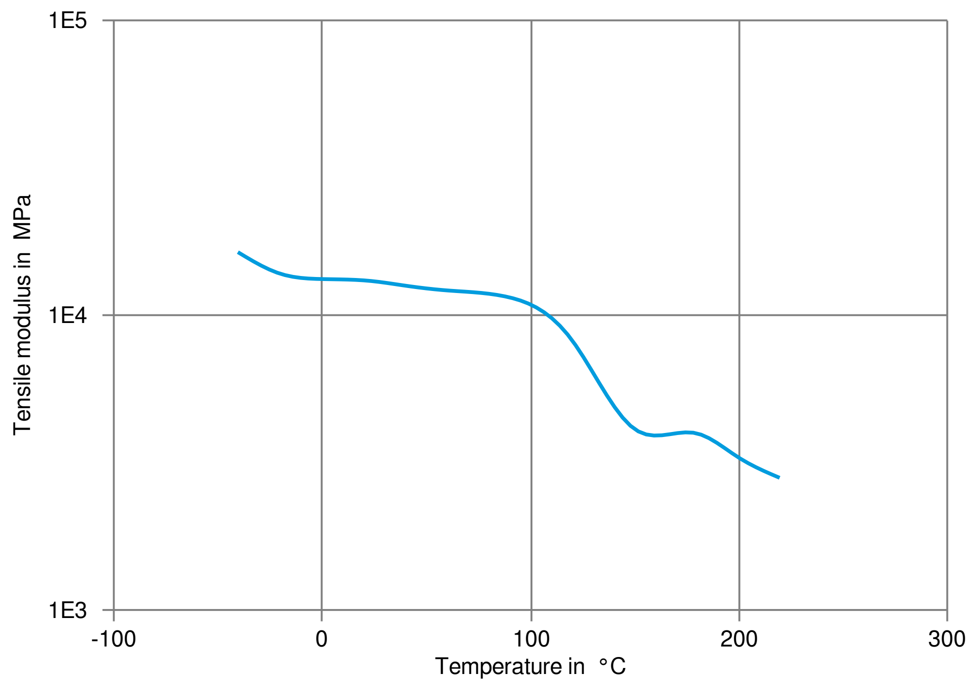
Tensile modulus-temperature (dry)



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Tensile modulus-temperature (cond.)