Zytel® HTN50G35HSL NC010 (PRELIMINARY)

HIGH PERFORMANCE POLYAMIDE RESIN

Zytel® HTN50G35HSL NC010 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	0.5 / -	%	ISO 294-4, 2577

Typical mechanical properties

	dry/cond.		
Tensile Modulus	13200 / -	MPa	ISO 527-1/-2
Stress at break, 5mm/min	240 / 220	MPa	ISO 527-1/-2
Strain at break, 5mm/min	2.5 / 2.3	%	ISO 527-1/-2
Flexural Modulus	- / 11800	MPa	ISO 178
Flexural Strength	- / 337	MPa	ISO 178
Charpy impact strength, 23 °C	86 / 76	kJ/m²	ISO 179/1eU
Charpy impact strength, -40 °C	71 / 60	kJ/m²	ISO 179/1eU
Charpy notched impact strength, 23 °C	13 / 12	kJ/m²	ISO 179/1eA
Charpy notched impact strength, -30 °C	12 / -	kJ/m²	ISO 179/1eA
Charpy notched impact strength, -40 °C	12 / 12	kJ/m²	ISO 179/1eA
Poisson's ratio	0.33 / -		

Thermal properties

	dry/cond.		
Melting temperature, 10 °C/min	302 / *	°C	ISO 11357-1/-3
Coeff. of linear therm. expansion, parallel, -40-23 °C	17 / *	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, parallel	18 / *	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, normal, -40-23 °C	53 / *	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, normal	57 / *	E-6/K	ISO 11359-1/-2

Flammability

FMVSS Class	SE		ISO 3795 (FMVSS 302)
Burning rate, Thickness 1 mm	2.2	mm/min	ISO 3795 (FMVSS 302)

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	31 / -	E-4	IEC 62631-2-1
Dissipation factor, 1MHz	149 / -	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	42 / 41	kV/mm	IEC 60243-1
Comparative tracking index	600 / -		IEC 60112

Other properties

	dry/cond.		
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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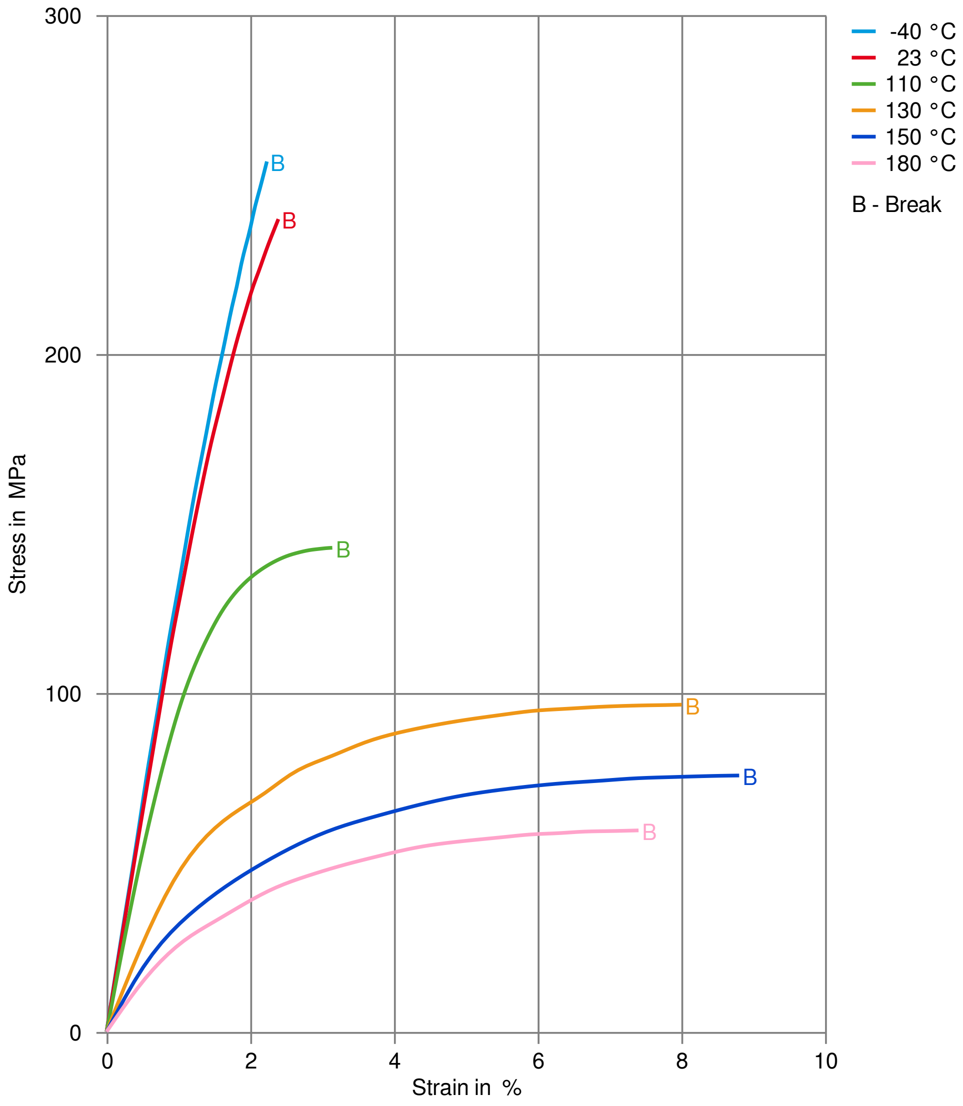
Stress-strain (dry)



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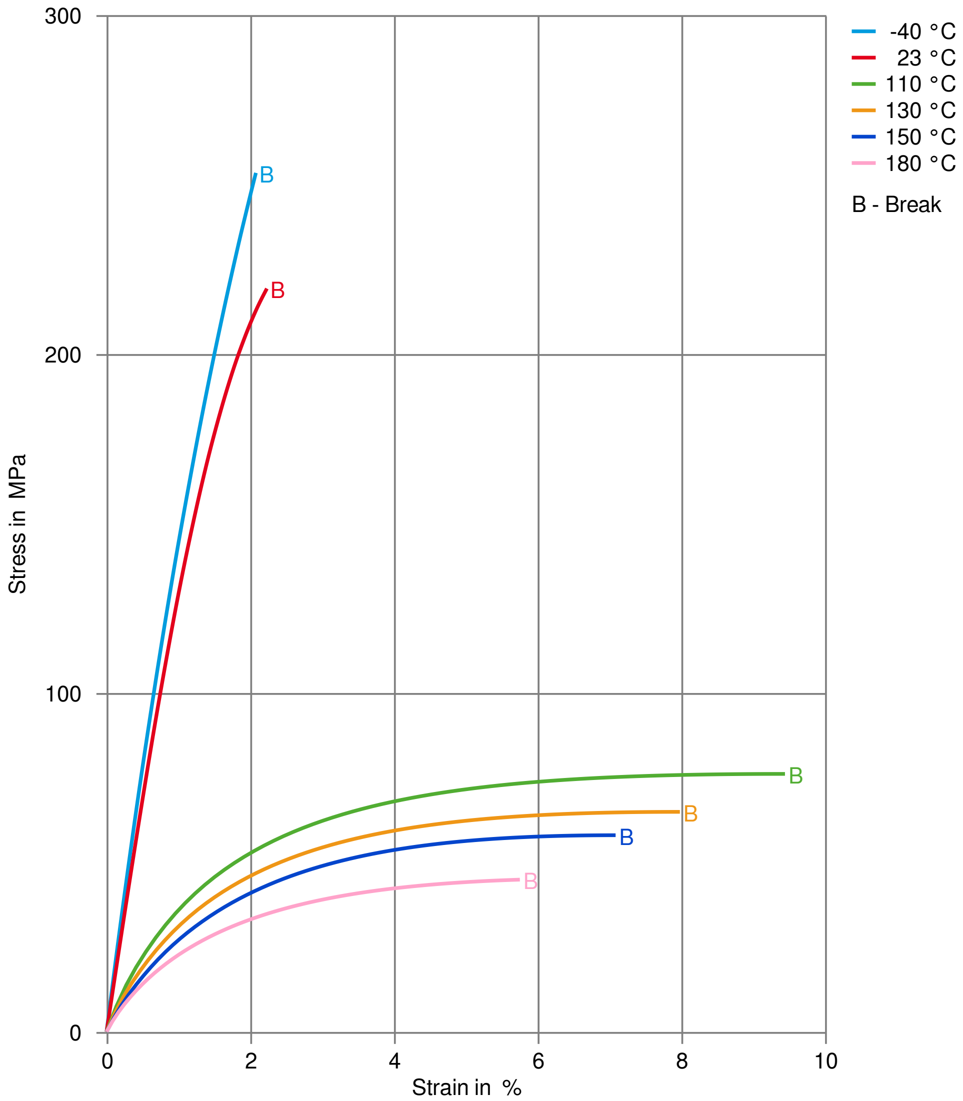
Stress-strain (cond.)



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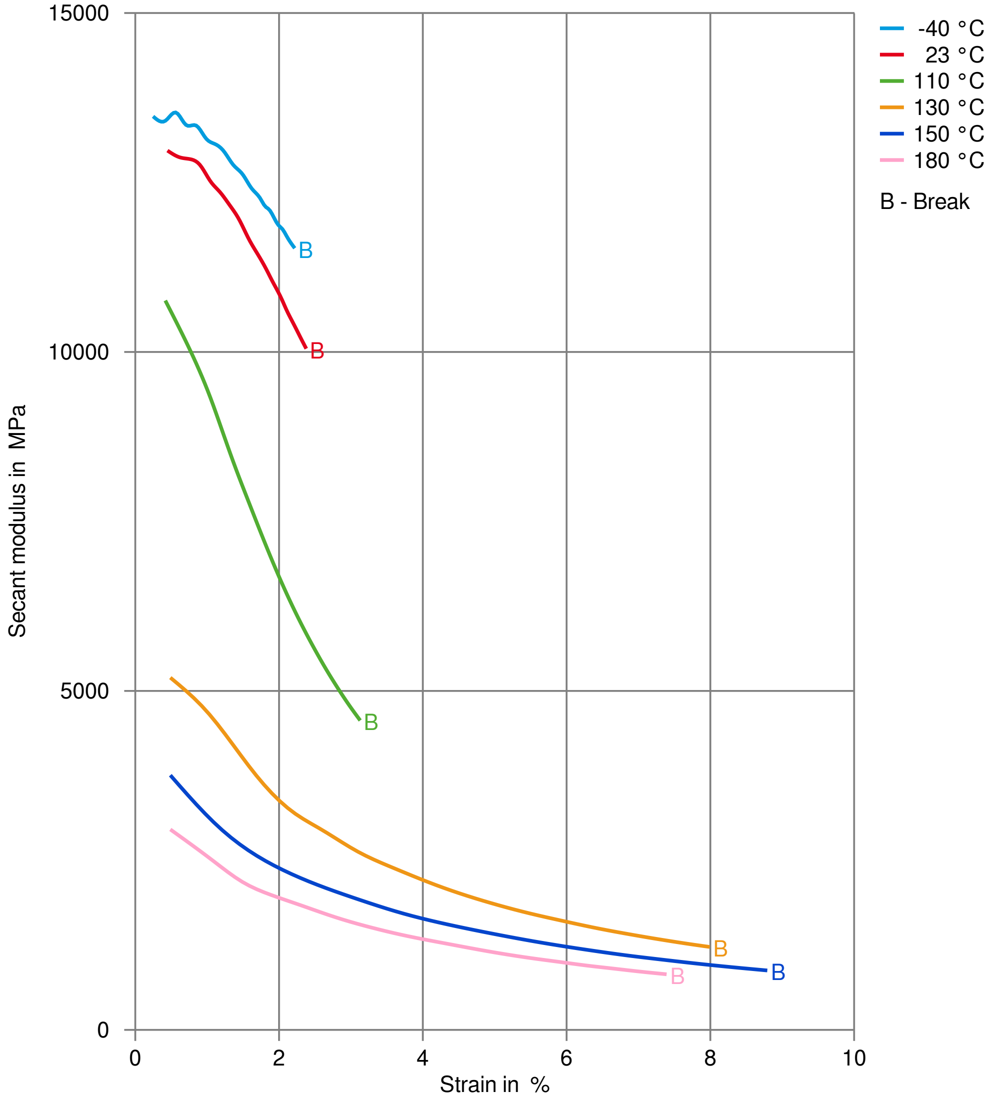
Secant modulus-strain (dry)



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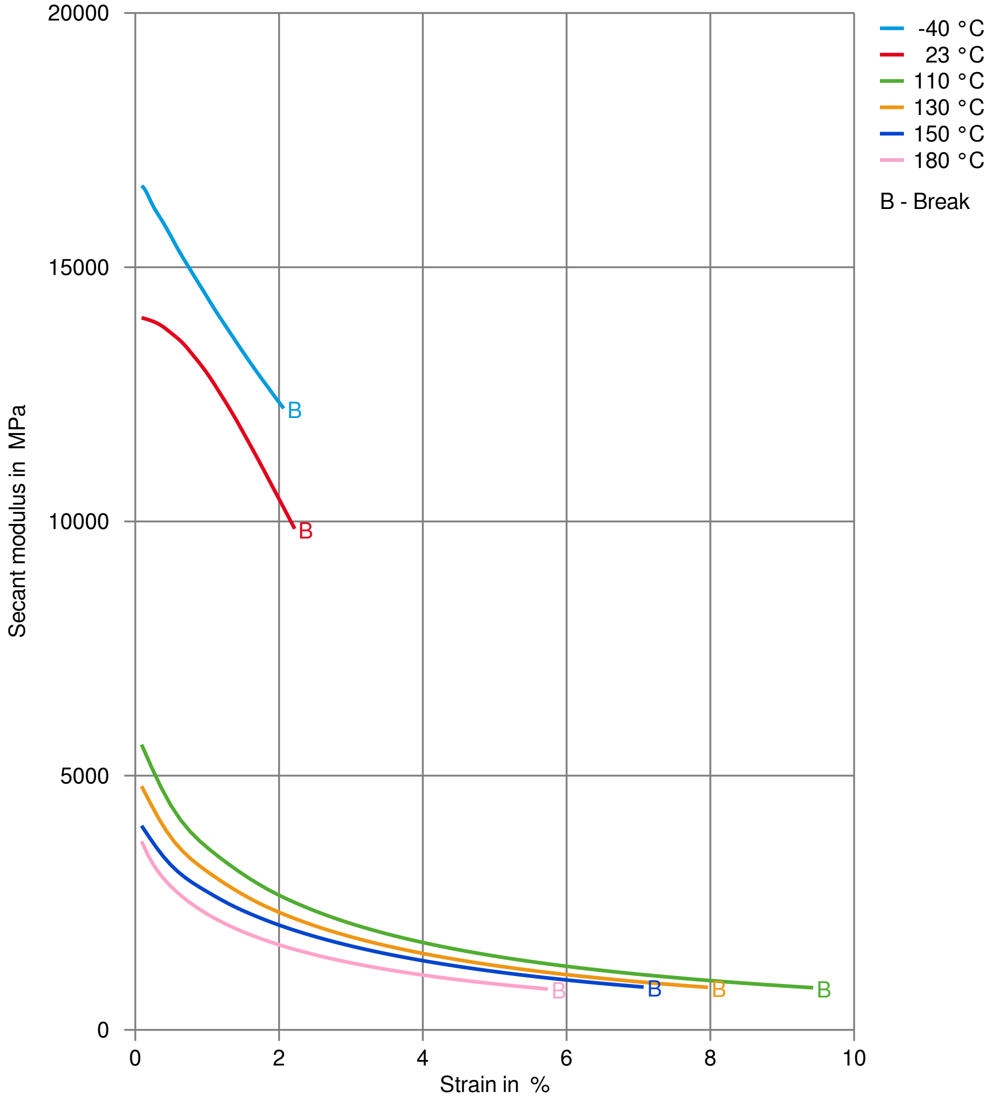
Secant modulus-strain (cond.)



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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).

✗ 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).