Celanese
The chemistry inside innovation™

Zytel® HTN330 NC010

HIGH PERFORMANCE POLYAMIDE RESIN

Zytel® HTN330 NC010 is an unreinforced, transparent high performance polyamide resin. It is also a PPA resin.

Product information

Resin Identification	PA	ISO 1043
Part Marking Code	>PA<	ISO 11469
ISO designation	ISO 16396-PA,,MG1NT,S10-030	

Rheological properties

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

Typical mechanical properties

	dry/cond.		
Tensile modulus	2800 / 3000	MPa	ISO 527-1/-2
Tensile stress at yield, 50mm/min	95 / 93	MPa	ISO 527-1/-2
Tensile strain at yield, 50mm/min	5 / 6	%	ISO 527-1/-2
Tensile strain at break, 50mm/min	30 / -	%	ISO 527-1/-2
Charpy impact strength, 23 °C	200 / N	kJ/m²	ISO 179/1eU
Charpy impact strength, -30 °C	180 / -	kJ/m²	ISO 179/1eU
Charpy notched impact strength, 23 °C	6 / 10	kJ/m²	ISO 179/1eA
Charpy notched impact strength, -30 °C	4.5 / -	kJ/m²	ISO 179/1eA
Puncture - maximum force, 23 °C	5000 / -	N	ISO 6603-2
Puncture energy, 23 °C	60 / -	J	ISO 6603-2
Poisson's ratio	0.37 / 0.37		

Tribological properties

	dry/cond.		
Coefficient of sliding friction, 1h against itself	0.1 / -		ASTM 1894

Thermal properties

	dry/cond.		
Glass transition temperature, 10 °C/min	130 / 100	°C	ISO 11357-1/-3
Temperature of deflection under load, 1.8 MPa	120 / *	°C	ISO 75-1/-2
Temperature of deflection under load, 0.45 MPa	125 / *	°C	ISO 75-1/-2
Coefficient of linear thermal expansion (CLTE), parallel	62 / *	E-6/K	ISO 11359-1/-2
Coefficient of linear thermal expansion (CLTE), normal	60 / *	E-6/K	ISO 11359-1/-2
Thermal conductivity of melt	0.22	W/(m K)	ISO 22007-2
Specific heat capacity of melt	2460	J/(kg K)	ISO 22007-4
RTI, electrical, 0.75mm	90	°C	UL 746B
RTI, electrical, 1.5mm	90	°C	UL 746B
RTI, electrical, 3.0mm	90	°C	UL 746B
RTI, impact, 0.75mm	65	°C	UL 746B
RTI, impact, 1.5mm	65	°C	UL 746B
RTI, impact, 3.0mm	65	°C	UL 746B
RTI, strength, 0.75mm	90	°C	UL 746B
RTI, strength, 1.5mm	90 / *	°C	UL 746B

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RTI, strength, 3.0mm	90	°C	UL 746B

Flammability

	dry/cond.		
Burning Behav. at 1.5mm nom. thickn.	HB / *	class	IEC 60695-11-10
UL recognition	yes / *		UL 94
Burning Behav. at thickness h	V-2 / *	class	IEC 60695-11-10
Thickness tested	0.86 / *	mm	IEC 60695-11-10
UL recognition	yes / *		UL 94
FMVSS Class	B		ISO 3795 (FMVSS 302)
Burning rate, Thickness 1 mm	<80	mm/min	ISO 3795 (FMVSS 302)

Electrical properties

	dry/cond.		
Relative permittivity, 1MHz	3.7 / 3.8		IEC 62631-2-1
Dissipation factor, 1MHz	200 / 200	E-4	IEC 62631-2-1
Volume resistivity	1E13 / 1E13	Ohm.m	IEC 62631-3-1
Electric strength	29 / 28	kV/mm	IEC 60243-1
Comparative tracking index	600 / -		IEC 60112

Physical/Other properties

	dry/cond.		
Humidity absorption, 2mm	4 / *	%	Sim. to ISO 62
Water absorption, 2mm	9.6 / *	%	Sim. to ISO 62
Density	1180 / -	kg/m³	ISO 1183
Luminous transmittance	88	%	ISO 13468-1, -2

Film Properties

	dry/cond.		
Gloss, 20°	110 / *		ISO 2813
Haze	0.9 / *		ISO 14782
WVTR, 23°C/85%r.h.	29 / *	g/(m²*d)	DIS 15106-1/-2
Oxygen transmission rate, 23°C/0%r.h.	45 / *	cm³/(m²*d*bar)	DIS 15105-1/-2
Oxygen transmission rate, 23°C/85%r.h.	20 / *	cm³/(m²*d*bar)	DIS 15105-1/-2
Carbon Dioxide transm. rate, 23°C/0%r.h.	230 / *	cm³/(m²*d*bar)	DIS 15105-1/-2
Carbon Dioxide transm. rate, 23°C/85%r.h.	170 / *	cm³/(m²*d*bar)	DIS 15105-1/-2

Injection

Drying Recommended	yes[1]	
Drying Temperature	80	°C
Drying Time, Dehumidified Dryer	6 - 10	h
Processing Moisture Content	≤0.1	%
Melt Temperature Optimum	300	°C
Min. melt temperature	280	°C
Max. melt temperature	320	°C
Mold Temperature Optimum	80	°C
Min. mould temperature	70	°C
Max. mould temperature	95	°C

[1]: dehumidified dryer, dew point -30°C

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Extrusion

Drying Temperature	≤80	°C
Drying Time, Dehumidified Dryer	6 - 10	h
Processing Moisture Content	≤0.1	%
Melt Temperature Optimum	260	°C
Melt Temperature Range	230 - 280	°C

Blow Molding

Drying Recommended	yes	
Drying Temperature	≤80	°C
Drying Time, Dehumidified Dryer	6 - 10	h
Processing Moisture Content	≤0.1	%
Melt Temperature Optimum	260	°C
Melt Temperature Range	230 - 280	°C

Characteristics

Processing	Injection Moulding, Extrusion, Blow Moulding
Delivery form	Pellets
Special characteristics	Transparent, Laser Weldable

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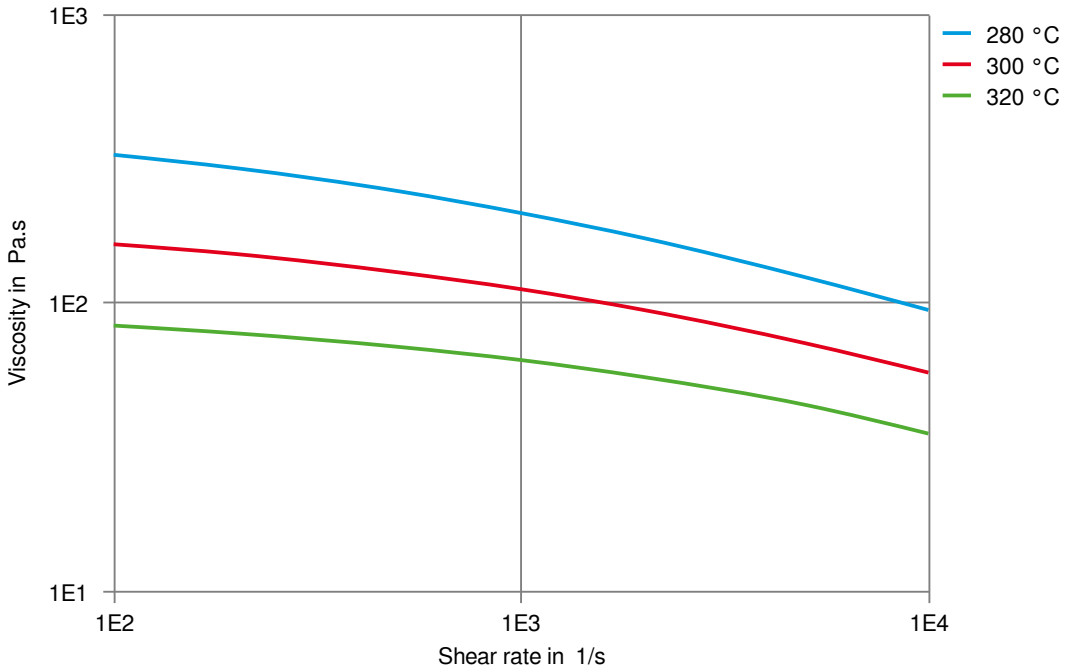
Viscosity-shear rate



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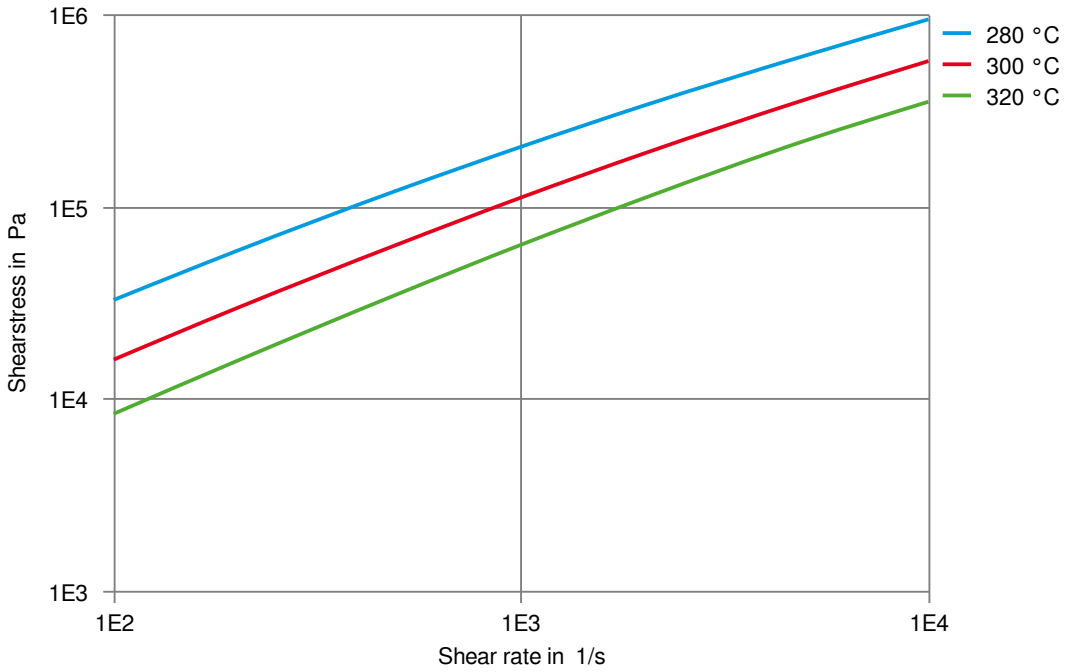
Shearstress-shear rate



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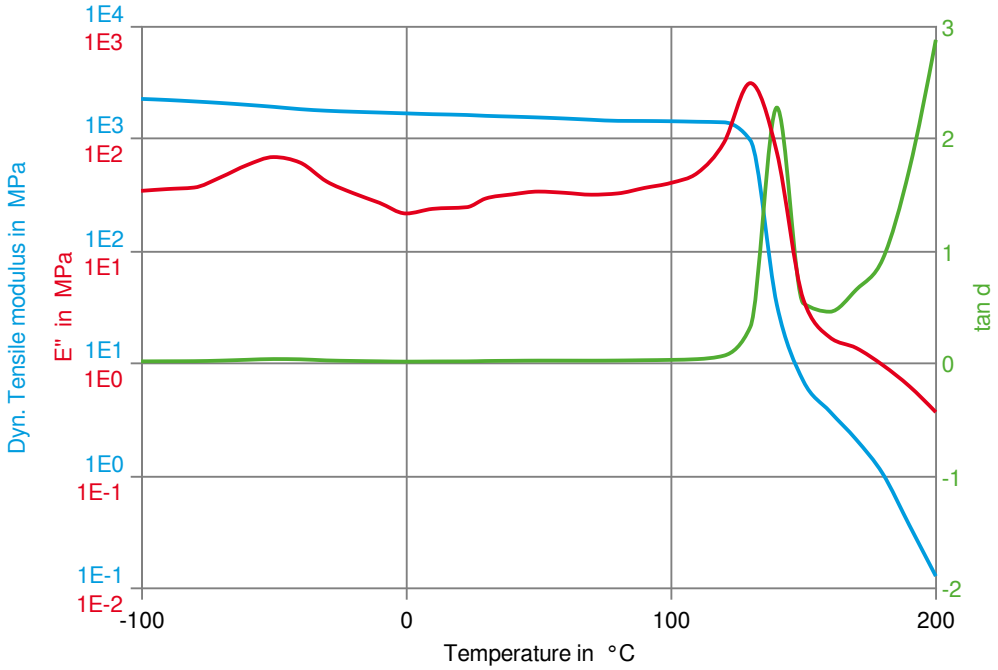
Dynamic Tensile modulus-temperature (dry)



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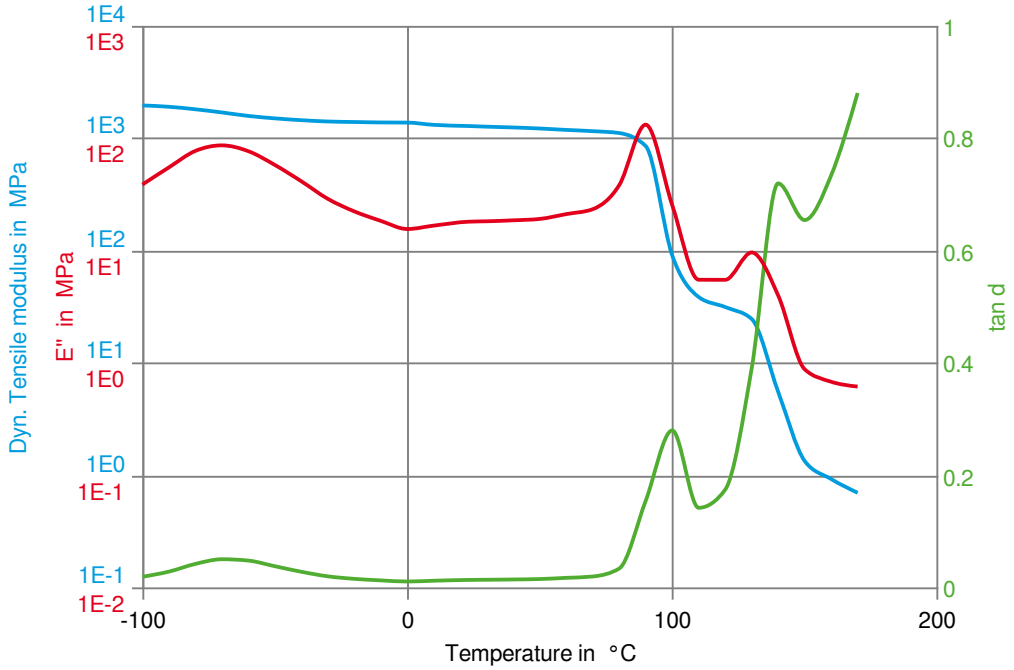
Dynamic Tensile modulus-temperature (cond.)



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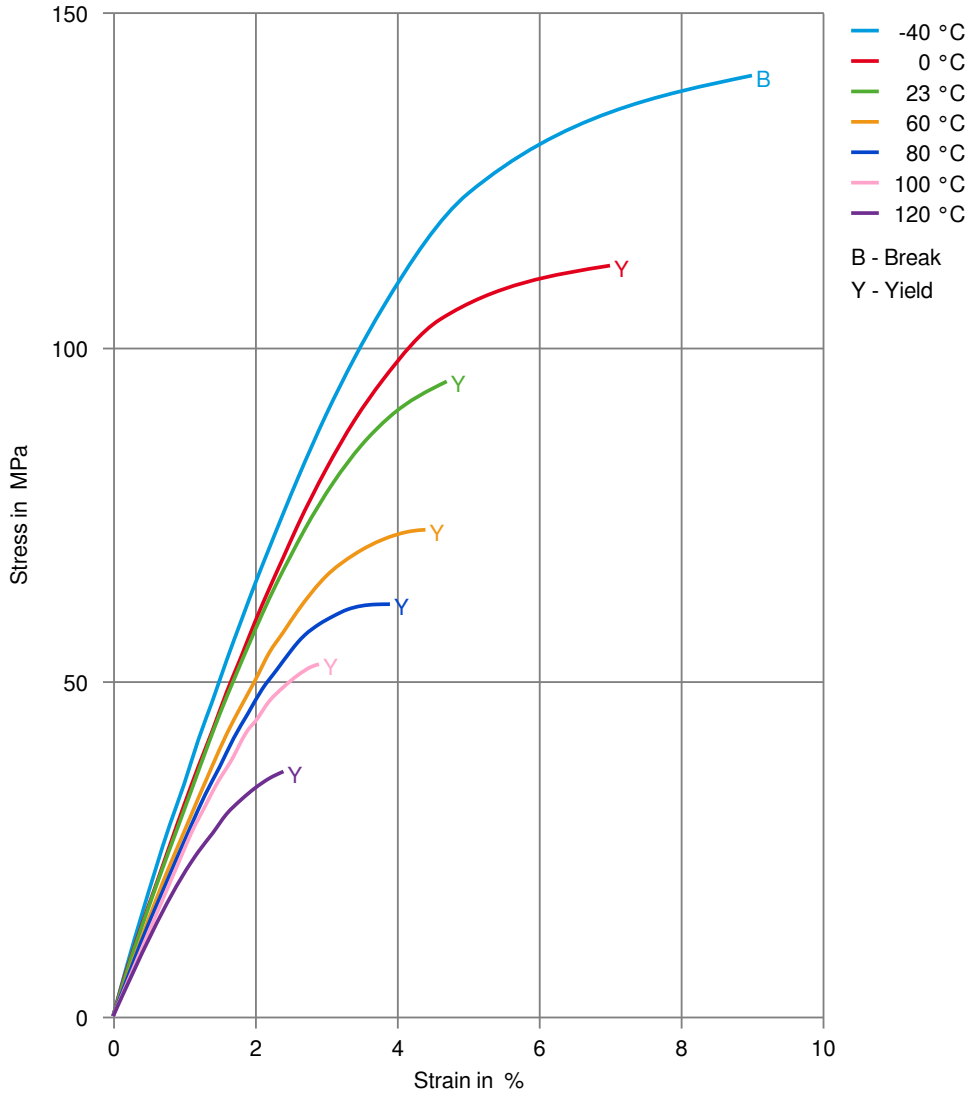
Stress-strain (dry)



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