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Zytel® HTN51G35EF BK083

HIGH PERFORMANCE POLYAMIDE RESIN

Zytel® HTN51G35EF BK083 is a 35% glass reinforced, heat stabilized, lubricated, hydrolysis resistant high performance polyamide resin developed for electrical and electronics applications. It is also a PPA resin.

Product information

Resin Identification	PA6T/XT-GF35	ISO 1043
Part Marking Code	>PA6T/XT-GF35<	ISO 11469
Part Marking Code	>PPA-GF35<	SAE J1344
ISO designation	ISO 16396-PA*, GF35,M1CGHR,S10-120	

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	12100 / 11100	MPa	ISO 527-1/-2
Tensile stress at break, 5mm/min	230 / 204	MPa	ISO 527-1/-2
Tensile strain at break, 5mm/min	2.4 / 2.2	%	ISO 527-1/-2
Flexural modulus	11200 / 11600	MPa	ISO 178
Flexural strength	300 / 280	MPa	ISO 178
Charpy impact strength, 23°C	57 / -	kJ/m²	ISO 179/1eU
Charpy notched impact strength, 23°C	10 / -	kJ/m²	ISO 179/1eA
Poisson's ratio	0.33 / 0.33		

Thermal properties

	dry/cond.		
Melting temperature, 10°C/min	300 / *	°C	ISO 11357-1/-3
Temperature of deflection under load, 1.8 MPa	264 / *	°C	ISO 75-1/-2
Coeff. of linear therm. expansion, parallel, -40-23°C	18 / *	E-6/K	ISO 11359-1/-2
Coefficient of linear thermal expansion (CLTE), parallel	18 / *	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	50 / *	E-6/K	ISO 11359-1/-2
Coefficient of linear thermal expansion (CLTE), normal	55 / *	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, normal, 55-160°C	80 / *	E-6/K	ISO 11359-1/-2
Specific heat capacity of melt	1820	J/(kg K)	ISO 22007-4
Specific heat capacity solid	610	J/(kg K)	ISO 22007-4
TGA curve	available		ISO 11359-1/-2

Flammability

	dry/cond.		
Burning Behav. at 1.5mm nom. thickn.	HB / *[DS]	class	IEC 60695-11-10
Thickness tested	1.5 / *[DS]	mm	IEC 60695-11-10
Burning Behav. at thickness h	HB / *[DS]	class	IEC 60695-11-10
Thickness tested	0.85 / *[DS]	mm	IEC 60695-11-10
Oxygen index	23 / *	%	ISO 4589-1/-2
Glow Wire Flammability Index, 1.0mm	750 / -	°C	IEC 60695-2-12
Glow Wire Ignition Temperature, 1.0mm	750 / -	°C	IEC 60695-2-13
Glow Wire Ignition Temperature, 3.0mm	800 / -	°C	IEC 60695-2-13

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FMVSS Class	B		ISO 3795 (FMVSS 302)
Burning rate, Thickness 1 mm	<80	mm/min	ISO 3795 (FMVSS 302)

[DS]: Derived from similar grade

Electrical properties

	dry/cond.		
Relative permittivity, 100Hz	4.4 / -		IEC 62631-2-1
Relative permittivity, 1MHz	4.3 / -		IEC 62631-2-1
Dissipation factor, 100Hz	160 / -	E-4	IEC 62631-2-1
Dissipation factor, 1MHz	190 / -	E-4	IEC 62631-2-1
Volume resistivity	>1E13 / >1E13	Ohm.m	IEC 62631-3-1
Electric strength	32 / 31	kV/mm	IEC 60243-1
Comparative tracking index	525 / -		IEC 60112

Physical/Other properties

	dry/cond.		
Humidity absorption, 2mm	1.4 / *	%	Sim. to ISO 62
Water absorption, 2mm	4 / *	%	Sim. to ISO 62
Water absorption, Immersion 24h	1 / *	%	Sim. to ISO 62
Density	1470 / -	kg/m³	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
Min. melt temperature	320	°C
Max. melt temperature	330	°C
Mold Temperature Optimum	150	°C
Min. mould temperature	140[1]	°C
Max. mould temperature	160	°C
Ejection temperature	262	°C

[1]: Higher temperature needed for thinner sections.

Characteristics

Processing	Injection Moulding
Special characteristics	Heat stabilised or stable to heat, Hydrolysis resistant, Laser Markable

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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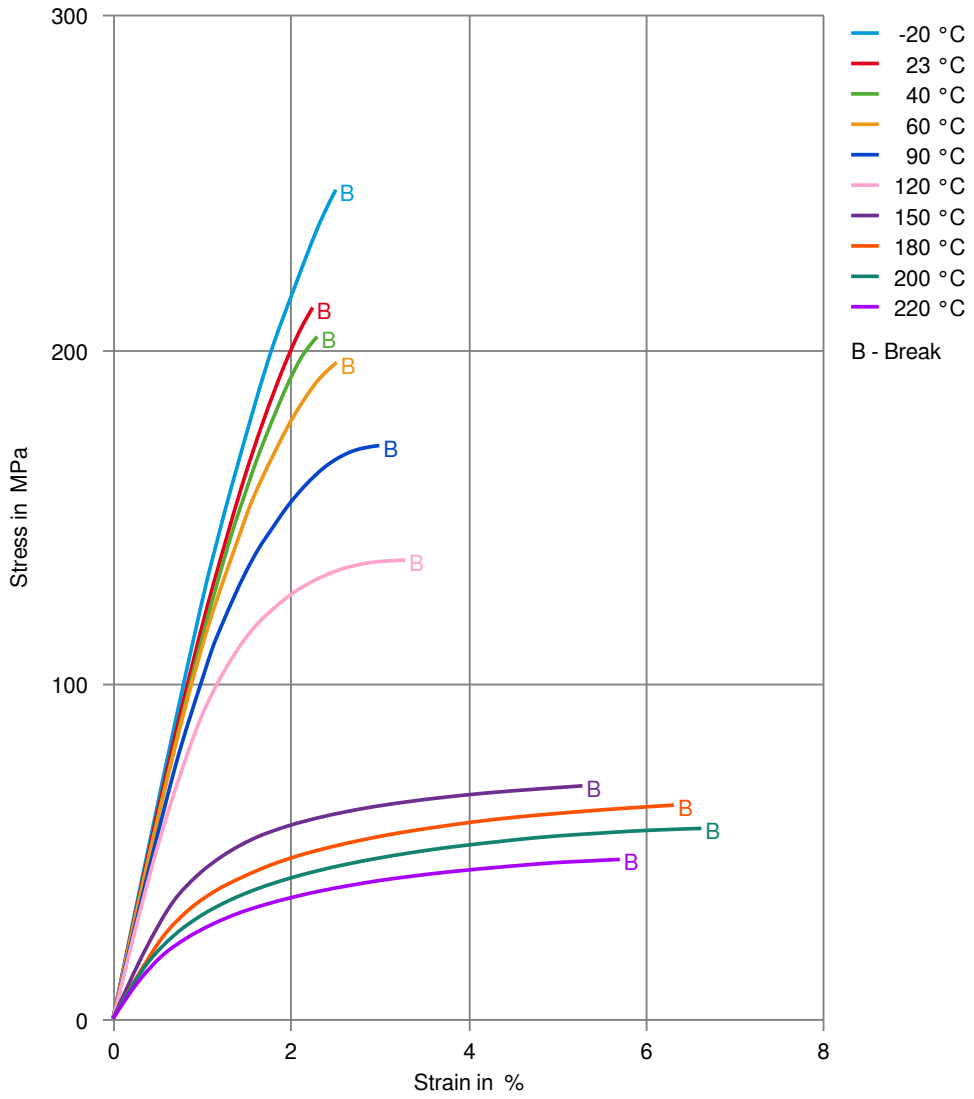
Automotive

OEM	STANDARD	ADDITIONAL INFORMATION
General Motors	Black; Part Specific Approval, Please Contact Your CE Representative For More Details.	
Hyundai	MS941-12 Type B	
Renault-Nissan	UB23, No Spec, Special Part Approval, See Your CE Account Manager.	
Stellantis	B62 0300 / 61/U4/AD1/225E/218M/H708(Adblue)/H412(Glysantin G48)/11/C2B/C5	01378_20_04244

Stress-strain (dry)



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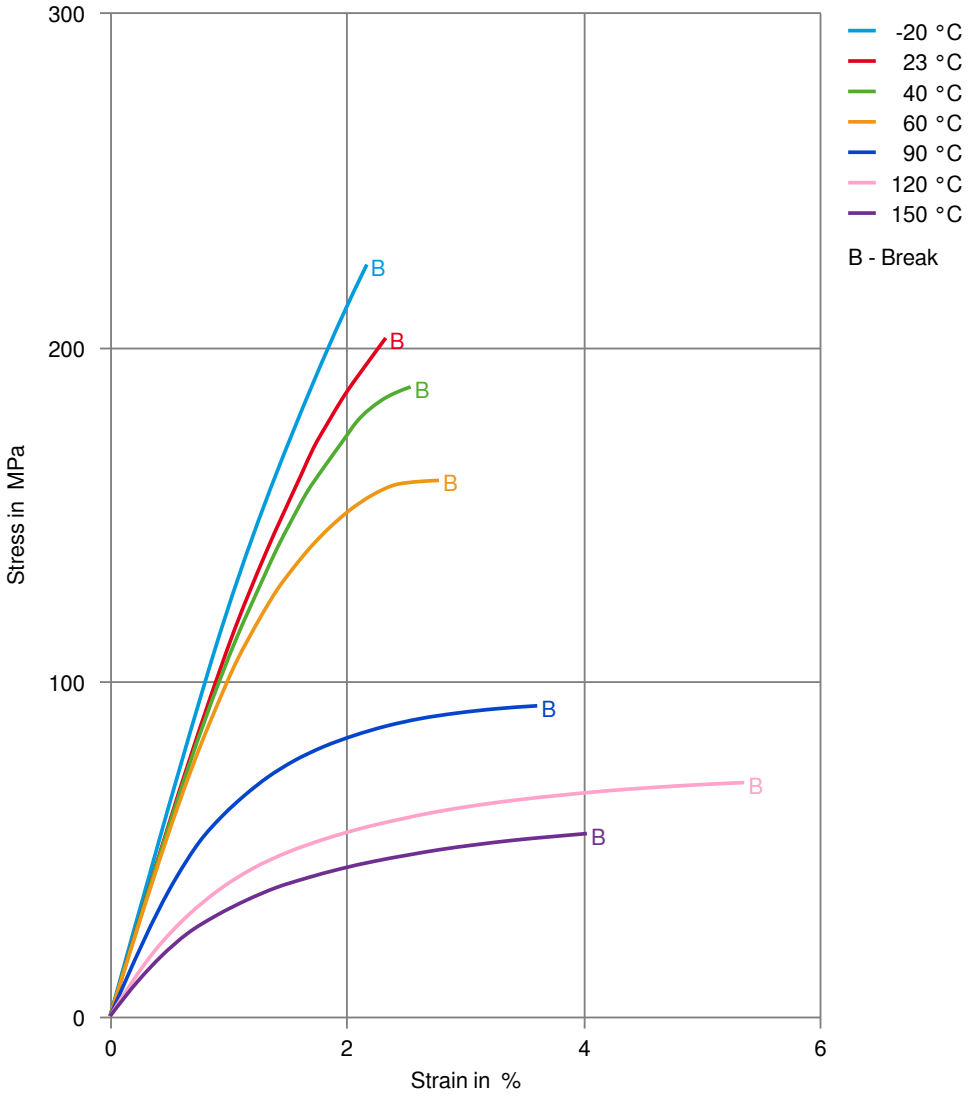
Stress-strain (cond.)



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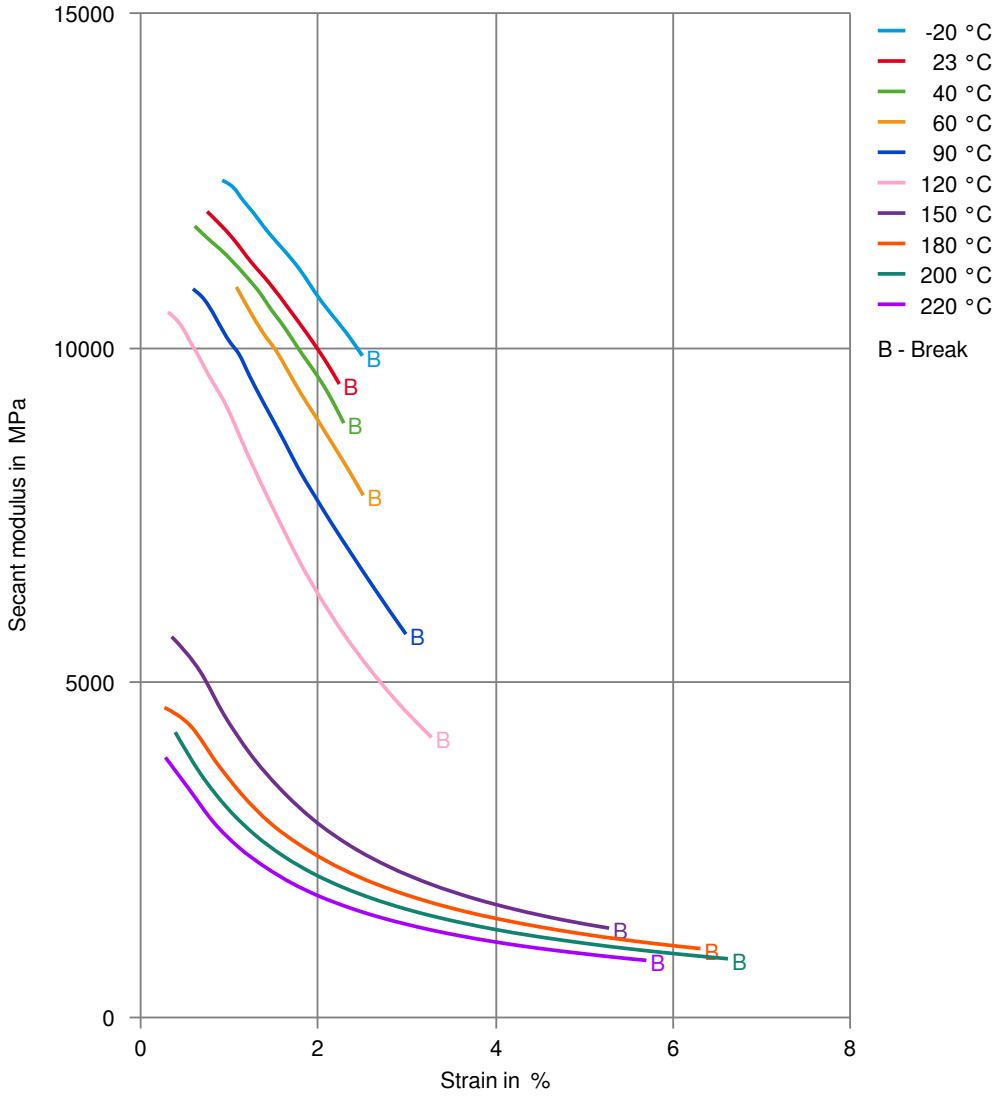
Secant modulus-strain (dry)



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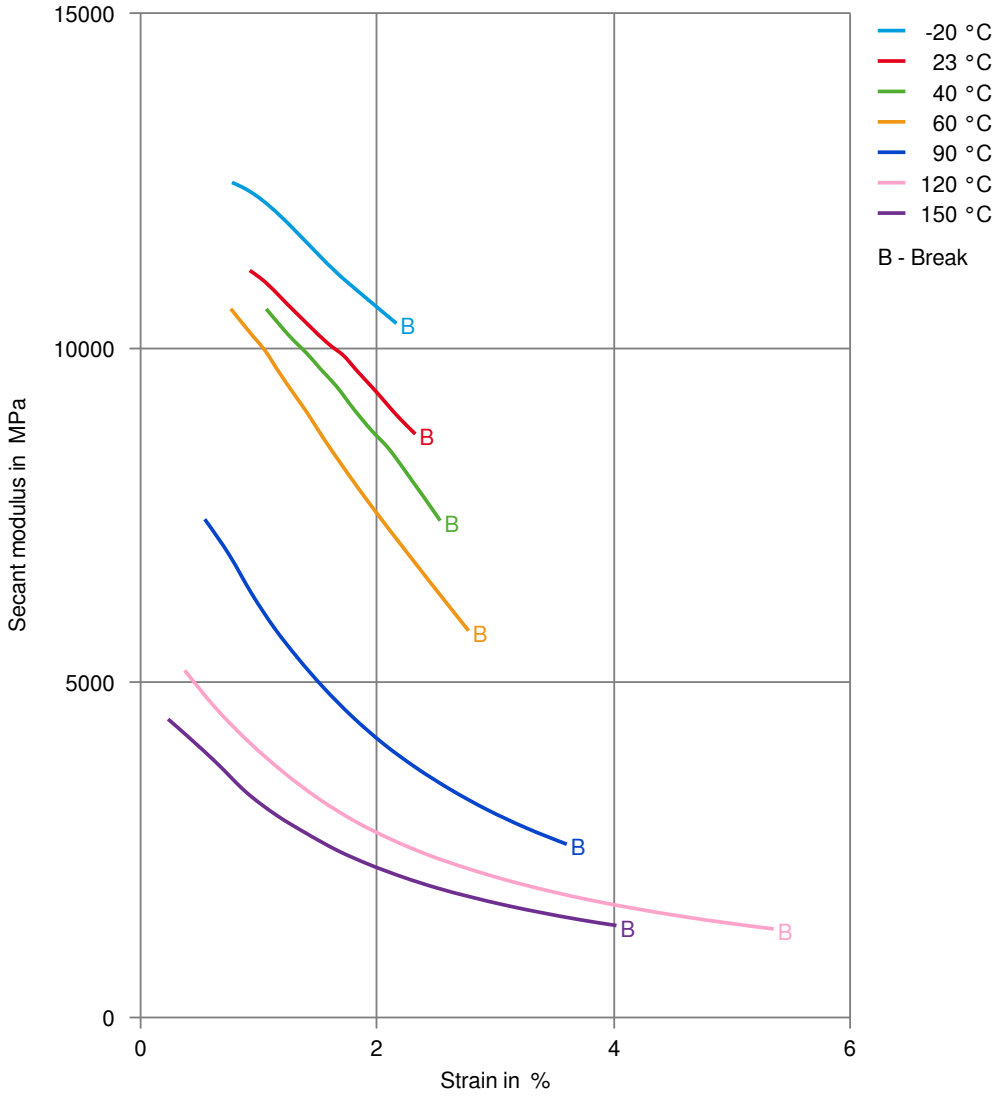
Secant modulus-strain (cond.)



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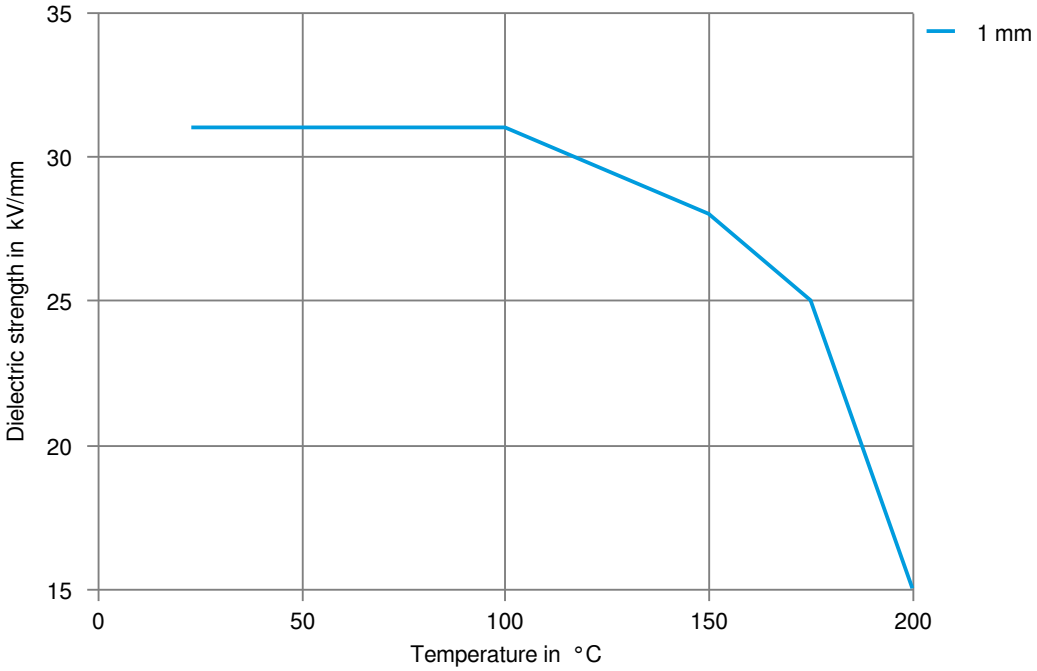
Dielectric strength - temperature (dry)



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Chemical Media Resistance

Acids

- ✔ Acetic Acid (5% by mass), 23°C
- ✔ Citric Acid solution (10% by mass), 23°C
- ✔ Lactic Acid (10% by mass), 23°C

Mineral oils

- ✔ SAE 10W40 multigrade motor oil, 23°C
- ✔ Insulating Oil, 23°C

Other

- ✔ Ethylene Glycol (50% by mass) in water, 108°C
- ✔ Water, 23°C
- ✔ Water, 90°C
- ✔ Coolant Glysantin G48, 1:1 in water, 125°C
- ✔ Urea solution (32.5% by mass), 23°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).

Revised: 2025-04-24 Source: Celanese Materials Database