

Zytel® HTN54G35EF BK420

HIGH PERFORMANCE POLYAMIDE RESIN

Zytel® HTN high performance polyamide resins feature high retention of properties upon exposure to elevated temperature, to high moisture, and to harsh chemical environments. Polymer families and grades of Zytel® HTN are tailored to optimize performance as well as processability.

Typical applications with Zytel® HTN include demanding applications in the automotive, electrical and electronics, domestic appliances, and construction industries.

Zytel® HTN54G35EF BK420 is a 35% glass reinforced, toughened, heat stabilised high performance polyamide resin, developed for electrical and electronics applications. It is also a PPA resin.

Product information

| | | |
|----------------------|------------------------------------|-----------|
| Resin Identification | PA-IGF35 | ISO 1043 |
| Part Marking Code | >PA-IGF35< | ISO 11469 |
| Part Marking Code | >PPA-IGF35< | SAE J1344 |
| ISO designation | ISO 16396-PA-I,GF35,M1CGHR,S12-110 | |

Rheological properties

| | dry/cond. | | |
|------------------------------|-----------|--------------------|-----------------|
| Viscosity number | 120 / * | cm ³ /g | ISO 307, 1628 |
| 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 | 11000 / - | MPa | ISO 527-1/-2 |
| Tensile stress at break, 5mm/min | 190 / - | MPa | ISO 527-1/-2 |
| Tensile strain at break, 5mm/min | 3 / - | % | ISO 527-1/-2 |
| Flexural modulus | 10000 / - | MPa | ISO 178 |
| Flexural strength | 270 / - | MPa | ISO 178 |
| Charpy impact strength, 23°C | 82 / - | kJ/m ² | ISO 179/1eU |
| Charpy notched impact strength, 23°C | 11 / - | kJ/m ² | ISO 179/1eA |
| Poisson's ratio | 0.34 / - | | |

Thermal properties

| | dry/cond. | | |
|--|-----------|-------|----------------|
| Melting temperature, 10°C/min | 304 / * | °C | ISO 11357-1/-3 |
| Glass transition temperature, 10°C/min | 120 / 65 | °C | ISO 11357-1/-3 |
| Temperature of deflection under load, 1.8 MPa | 262 / * | °C | ISO 75-1/-2 |
| Coeff. of linear therm. expansion, parallel, -40-23°C | 20 / * | E-6/K | ISO 11359-1/-2 |
| Coefficient of linear thermal expansion (CLTE), parallel | 20 / * | E-6/K | ISO 11359-1/-2 |
| Coeff. of linear therm. expansion, parallel, 55-160°C | 19 / * | E-6/K | ISO 11359-1/-2 |
| Coeff. of linear therm. expansion, normal, -40-23°C | 55 / * | E-6/K | ISO 11359-1/-2 |
| Coefficient of linear thermal expansion (CLTE), normal | 60 / * | E-6/K | ISO 11359-1/-2 |
| Coeff. of linear therm. expansion, normal, 55-160°C | 108 / * | E-6/K | ISO 11359-1/-2 |
| TGA curve | available | | ISO 11359-1/-2 |

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Flammability

| | dry/cond. | | |
|---------------------------------------|-----------|----|----------------------|
| Oxygen index | 23 / * | % | ISO 4589-1/-2 |
| Glow Wire Flammability Index, 3.0mm | 960 / - | °C | IEC 60695-2-12 |
| Glow Wire Ignition Temperature, 3.0mm | 800 / - | °C | IEC 60695-2-13 |
| FMVSS Class | SE | | ISO 3795 (FMVSS 302) |

Electrical properties

| | dry/cond. | | |
|------------------------------|-----------|-------|---------------|
| Relative permittivity, 100Hz | 4.3 / - | | IEC 62631-2-1 |
| Relative permittivity, 1MHz | 3.9 / - | | IEC 62631-2-1 |
| Dissipation factor, 100Hz | 50 / - | E-4 | IEC 62631-2-1 |
| Dissipation factor, 1MHz | 155 / - | E-4 | IEC 62631-2-1 |
| Volume resistivity | >1E13 / - | Ohm.m | IEC 62631-3-1 |
| Electric strength | 32 / 31 | kV/mm | IEC 60243-1 |
| Comparative tracking index | 600 / - | | IEC 60112 |

Physical/Other properties

| | dry/cond. | | |
|--------------------------|-----------|-------------------|----------------|
| Humidity absorption, 2mm | 1.8 / * | % | Sim. to ISO 62 |
| Density | 1420 / - | 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 |
| Min. melt temperature | 320 °C |
| Max. melt temperature | 330 °C |
| Mold Temperature Optimum | 110 °C |
| Min. mould temperature | 85 °C |
| Max. mould temperature | 135 °C |
| Ejection temperature | 261 °C |

Characteristics

| | |
|-------------------------|-----------------------------------|
| Processing | Injection Moulding |
| Special characteristics | Heat stabilised or stable to heat |

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. |
|-------------------|---|

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Automotive

OEM
Renault-Nissan

STANDARD
UB23, No Spec, Special Part Approval, See
Your CE Account Manager.

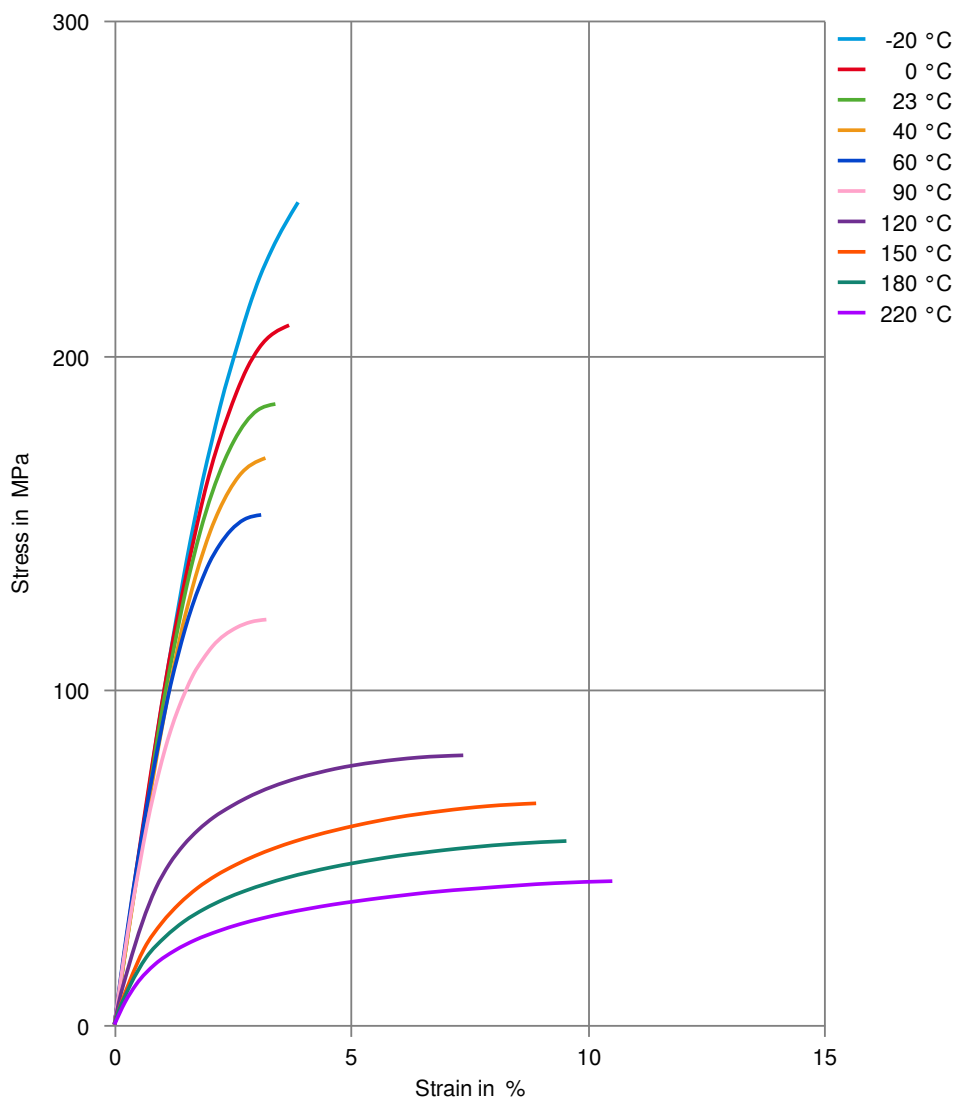
ADDITIONAL INFORMATION

Stellantis

B62 / 0300 / 61/223E-217M

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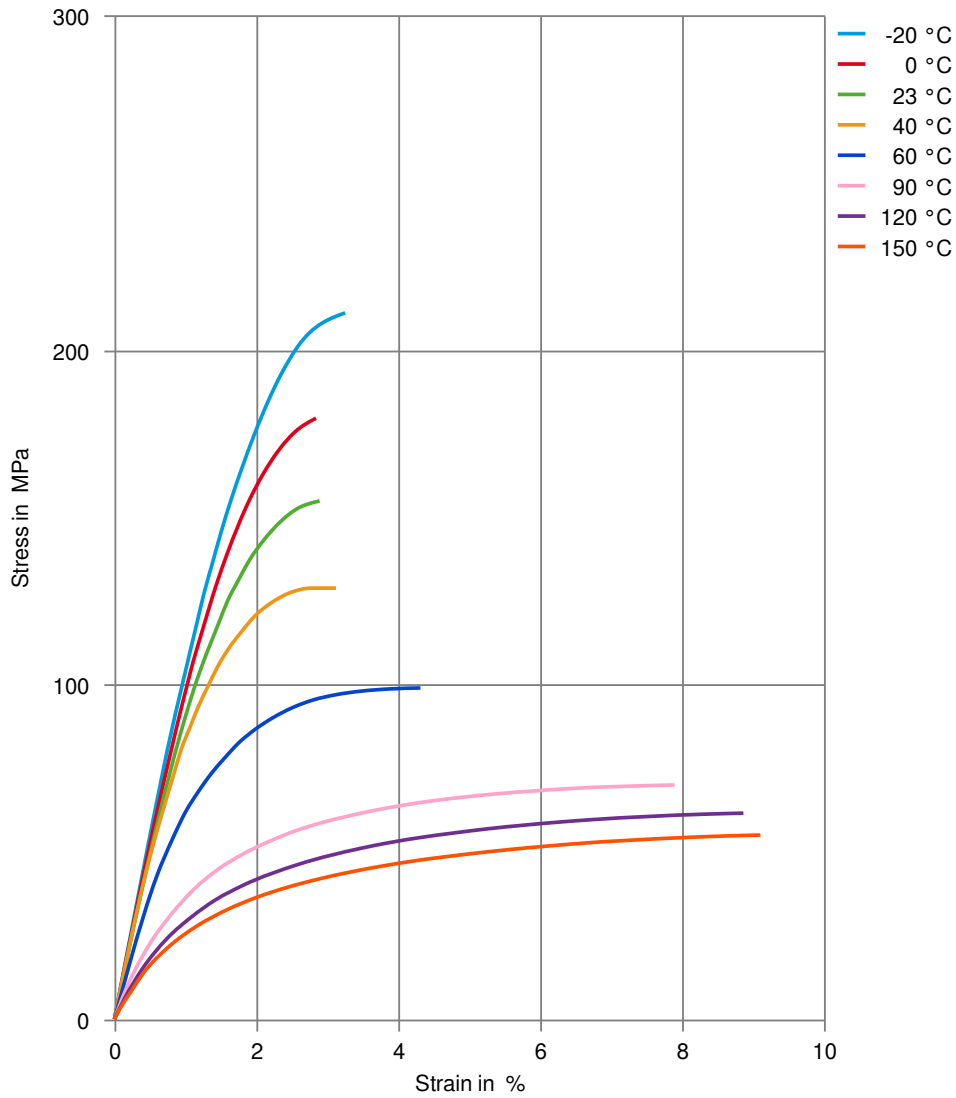
Stress-strain (dry)



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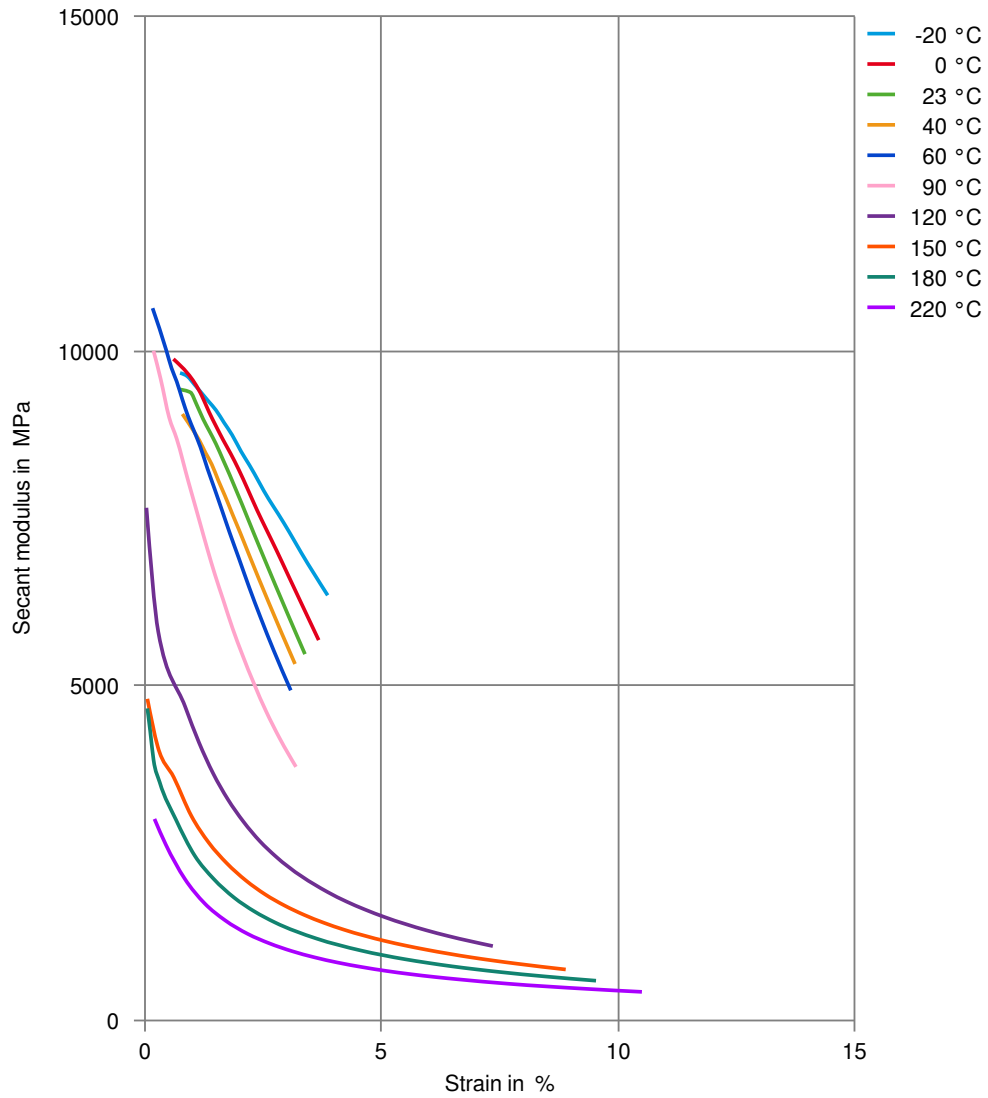
Stress-strain (cond.)



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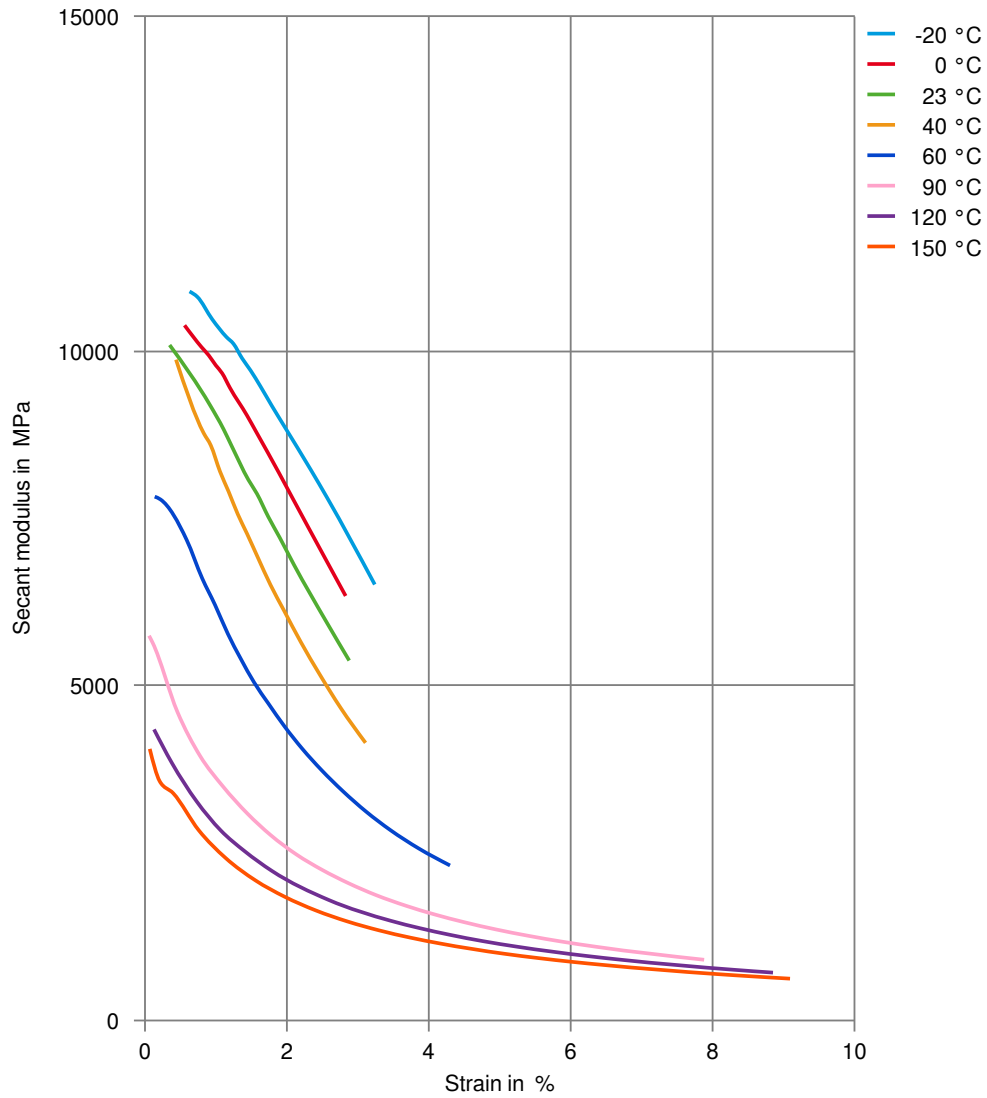
Secant modulus-strain (dry)



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Secant modulus-strain (cond.)



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Chemical Media Resistance

Other

- ✓ 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).