



Zytel® HTNFR52G30BL BK337

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® HTNFR52G30BL BK337 is a 30% glass reinforced, flame retardant, lubricated high performance polyamide resin that has been developed for connector applications.

Product information

| | | |
|----------------------|--|-----------|
| Resin Identification | PA6T/66-GF30FR(16+72) | ISO 1043 |
| Part Marking Code | >PA6T/66-GF30FR(16+72)< | ISO 11469 |
| Part Marking Code | >PPA-GF30FR< | SAE J1344 |
| ISO designation | ISO 16396-PA6T/66,GF30 FR(16+72),M1CF1GR,S10-120 | |

Rheological properties

| | dry/cond. | | |
|------------------------------|-----------|---|-----------------|
| Moulding shrinkage, parallel | 0.3/- | % | ISO 294-4, 2577 |
| Moulding shrinkage, normal | 0.8/- | % | ISO 294-4, 2577 |

Typical mechanical properties

| | dry/cond. | | |
|---------------------------------------|-----------|-------------------|--------------|
| Tensile Modulus | 11800/- | MPa | ISO 527-1/-2 |
| Stress at break | 160/- | MPa | ISO 527-1/-2 |
| Strain at break | 2/- | % | ISO 527-1/-2 |
| Flexural Modulus | 10000/- | MPa | ISO 178 |
| Flexural Strength | 240/210 | MPa | ISO 178 |
| Charpy impact strength, 23°C | 50/35 | kJ/m ² | ISO 179/1eU |
| Charpy impact strength, -30°C | 40/35 | kJ/m ² | ISO 179/1eU |
| Charpy notched impact strength, 23°C | 10/- | kJ/m ² | ISO 179/1eA |
| Charpy notched impact strength, -30°C | 10/- | kJ/m ² | ISO 179/1eA |
| Poisson's ratio | 0.33/- | - | |

Thermal properties

| | dry/cond. | | |
|---|-----------|-------|----------------|
| Melting temperature, first heat | 310/* | °C | ISO 11357-1/-3 |
| Temp. of deflection under load, 1.8 MPa | 282/* | °C | ISO 75-1/-2 |
| CLTE, Parallel, -40-23°C | 20/* | E-6/K | ISO 11359-1/-2 |
| Coeff. of linear therm. expansion, parallel | 20/* | E-6/K | ISO 11359-1/-2 |
| CLTE, Parallel, 55-160°C | 10/* | E-6/K | ISO 11359-1/-2 |
| CLTE, Normal, -40-23°C | 57/* | E-6/K | ISO 11359-1/-2 |
| Coeff. of linear therm. expansion, normal | 63/* | E-6/K | ISO 11359-1/-2 |
| Coeff. of linear therm. expansion, Normal, 55-160°C | 100/* | E-6/K | ISO 11359-1/-2 |
| RTI, electrical, 1.5mm | 140 | °C | UL 746B |



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|----------------------|-------|----|---------|
| RTI, electrical, 3mm | 140 | °C | UL 746B |
| RTI, impact, 1.5mm | 120 | °C | UL 746B |
| RTI, impact, 3mm | 120 | °C | UL 746B |
| RTI, strength, 1.5mm | 120/* | °C | UL 746B |
| RTI, strength, 3mm | 130 | °C | UL 746B |

Flammability

| | | | |
|--|-----------|-------|----------------------|
| | dry/cond. | | |
| Burning Behav. at 1.5mm nom. thickn. | V-0/* | class | IEC 60695-11-10 |
| Thickness tested | 1.5/* | mm | IEC 60695-11-10 |
| UL recognition | yes/* | - | UL 94 |
| Burning Behav. at thickness h | V-0/* | class | IEC 60695-11-10 |
| Thickness tested | 3/* | mm | IEC 60695-11-10 |
| UL recognition | yes/* | - | UL 94 |
| Burning Behav. 5V at thickness h | 5VA/* | class | IEC 60695-11-20 |
| Thickness tested | 1.5/* | mm | IEC 60695-11-20 |
| UL recognition | yes/* | - | UL 94 |
| Oxygen index | 42/* | % | ISO 4589-1/-2 |
| Glow Wire Flammability Index, 0.75mm | 960/- | °C | IEC 60695-2-12 |
| Glow Wire Flammability Index, 1.5mm | 960/- | °C | IEC 60695-2-12 |
| Glow Wire Flammability Index, 3mm | 960/- | °C | IEC 60695-2-12 |
| Glow Wire Ignition Temperature, 0.75mm | 925/- | °C | IEC 60695-2-13 |
| Glow Wire Ignition Temperature, 1.5mm | 925/- | °C | IEC 60695-2-13 |
| Glow Wire Ignition Temperature, 3mm | 960/- | °C | IEC 60695-2-13 |
| FMVSS Class | DNI | - | ISO 3795 (FMVSS 302) |

Electrical properties

| | | | |
|------------------------------|-----------|-------|---------------|
| | dry/cond. | | |
| Relative permittivity, 100Hz | 3.5/- | - | IEC 62631-2-1 |
| Relative permittivity, 1MHz | 3.3/- | - | IEC 62631-2-1 |
| Dissipation factor, 100Hz | 50/- | E-4 | IEC 62631-2-1 |
| Dissipation factor, 1MHz | 135/- | E-4 | IEC 62631-2-1 |
| Volume resistivity | >1E13/- | Ohm.m | IEC 62631-3-1 |

Other properties

| | | | |
|---------|-----------|-------------------|----------|
| | dry/cond. | | |
| Density | 1620/- | kg/m ³ | ISO 1183 |

VDA Properties

| | | | |
|-------------------------------|-----------|-------|----------|
| | dry/cond. | | |
| Emission of organic compounds | 35 | µgC/g | VDA 277 |
| Odour | 4.5 | class | VDA 270 |
| Fogging, F-value (refraction) | 95/* | % | ISO 6452 |



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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 |
| Min. mould temperature | 90 °C |
| Max. mould temperature | 110 °C |

Characteristics

| | |
|-----------|-----------------|
| Additives | Flame retardant |
|-----------|-----------------|

Additional Information

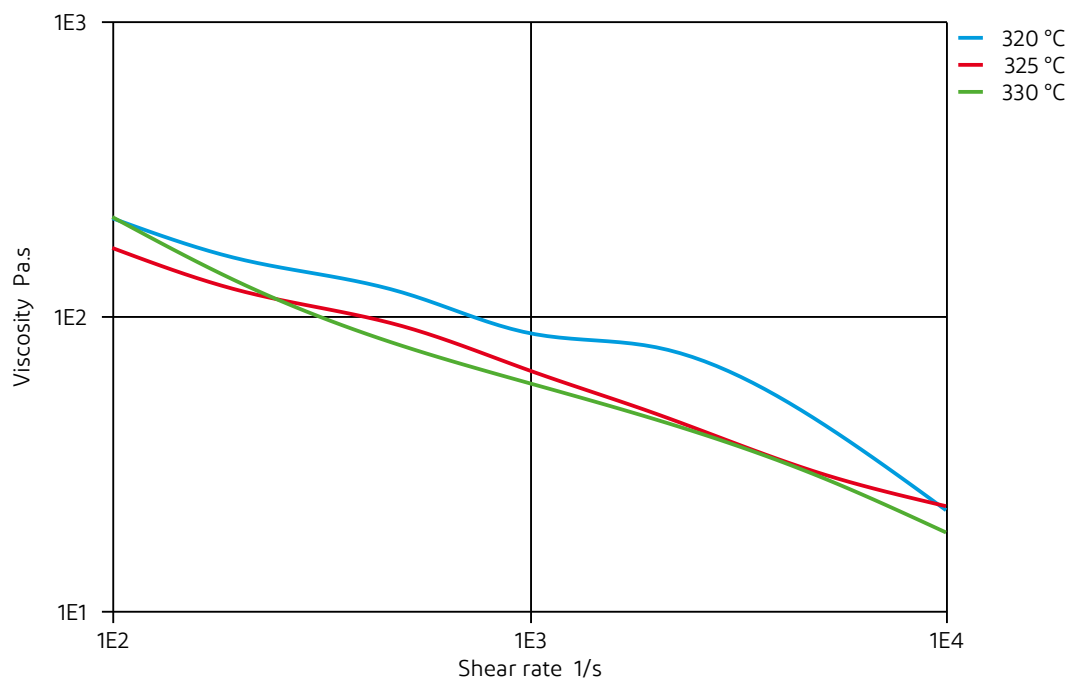
| | |
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| Injection molding | During molding, use proper protective equipment and adequate ventilation. Avoid exposure to fumes and limit the holdup time and temperature of the resin in the machine. Purge degraded resin carefully with HDPE. |
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Viscosity-shear rate

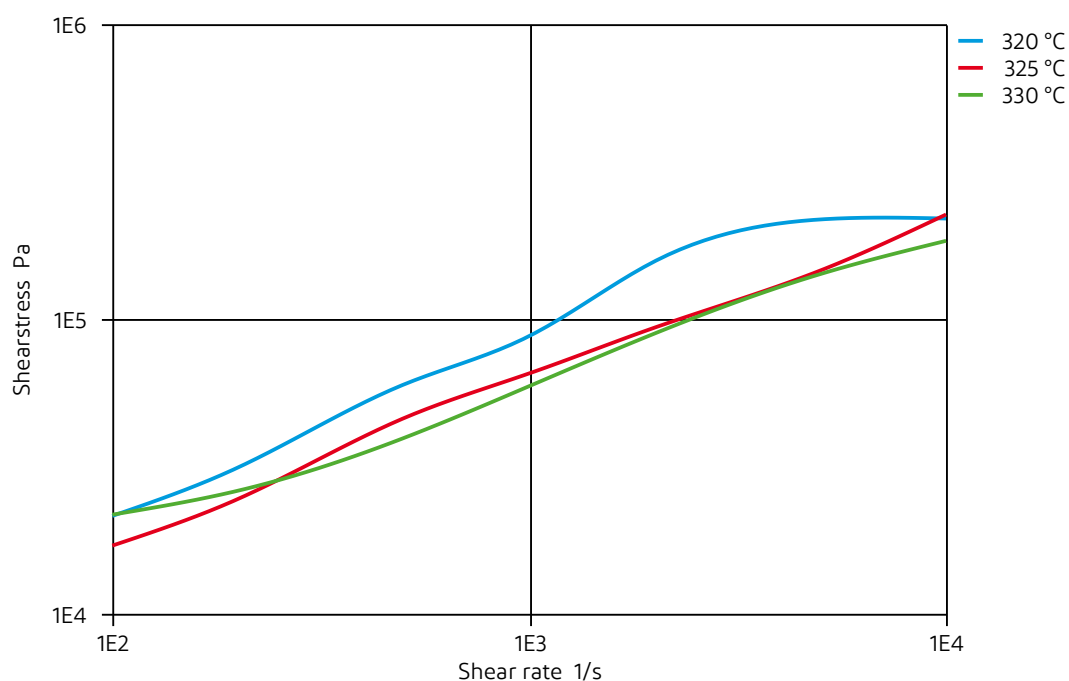




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Shearstress-shear rate



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