

# DuPont™ Zytel® HTN52G35HSL BK083

## HIGH PERFORMANCE POLYAMIDE RESIN

Product Information

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® HTN52G35HSL BK083 is a 35% glass reinforced, heat stabilized, lubricated high performance polyamide resin that can be molded in water heated molds. It is also a PPA resin.**

| General information                         | Value         | Unit              | Test Standard   |
|---|---------------|-------------------|-----------------|
| Resin Identification                        | PA6T/66-GF35  | -                 | ISO 1043        |
| Part Marking Code                           | PA6T/66-GF35  | -                 | ISO 11469       |
| Part Marking Code                           | >PPA-GF35<    | -                 | SAE J1344       |
| Rheological properties                      | dry / cond    | Unit              | Test Standard   |
| Molding shrinkage, parallel                 | 0.3 / -       | %                 | ISO 294-4, 2577 |
| Molding shrinkage, normal                   | 0.9 / -       | %                 | ISO 294-4, 2577 |
| Mechanical properties                       | dry / cond    | Unit              | Test Standard   |
| Tensile Modulus                             | 11600 / -     | MPa               | ISO 527-1/-2    |
| Stress at break                             | 187 / 180     | MPa               | ISO 527-1/-2    |
| Strain at break                             | 2.3 / 2.6     | %                 | ISO 527-1/-2    |
| Flexural Modulus                            | 10300 / 10300 | MPa               | ISO 178         |
| Poisson's ratio                             | 0.39 / -      | -                 | ISO 527-1/-2    |
| Charpy impact strength                      |               |                   | ISO 179/1eU     |
| 73°F  | 45 / -        | kJ/m <sup>2</sup> |                 |
| -22°F                                       | 40 / 35       | kJ/m <sup>2</sup> |                 |
| Charpy notched impact strength              |               |                   | ISO 179/1eA     |
| 73°F  | 9 / 9         | kJ/m <sup>2</sup> |                 |
| -22°F                                       | 7 / 6         | kJ/m <sup>2</sup> |                 |
| Thermal properties                          | dry / cond    | Unit              | Test Standard   |
| Melting temperature, first heat             | 310 / *       | °C                | ISO 11357-1/-3  |
| Temp. of deflection under load, 260 psi     | 285 / *       | °C                | ISO 75-1/-2     |
| Coeff. of linear therm. expansion, parallel | 21 / *        | E-6/K             | ISO 11359-1/-2  |
| Coeff. of linear therm. expansion           |               |                   | ISO 11359-1/-2  |
| normal                                      | 67 / *        | E-6/K             |                 |
| Normal, -40-23°C                            | 61 / *        | E-6/K             |                 |
| Normal, 55-160°C                            | 80 / *        | E-6/K             |                 |
| Parallel, -40-23°C                          | 21 / *        | E-6/K             |                 |
| RTI, electrical                             |               |                   | UL 746B         |
| 30mil                                       | 150 / *       | °C                |                 |
| 60mil                                       | 150 / *       | °C                |                 |
| 120mil                                      | 150           | °C                |                 |
| RTI, impact                                 |               |                   | UL 746B         |
| 30mil                                       | 125           | °C                |                 |
| 60mil                                       | 125 / *       | °C                |                 |
| 120mil                                      | 125           | °C                |                 |
| RTI, strength                               |               |                   | UL 746B         |
| 30mil                                       | 130           | °C                |                 |
| 60mil                                       | 125 / *       | °C                |                 |
| 120mil                                      | 150           | °C                |                 |
| Flammability                                | dry / cond    | Unit              | Test Standard   |
| Burning Behav. at 60mil nom. thickn.        | HB / *        | class             | IEC 60695-11-10 |
| Thickness tested                            | 1.5 / *       | mm                | IEC 60695-11-10 |

To find out more, visit [DuPont Performance Polymers](#) or contact nearest DuPont location.

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|                                 |                   |                   |                      |
|---------------------------------|-------------------|-------------------|----------------------|
| UL recognition                  | yes / *           | -                 | UL 94                |
| Burning Behav. at thickness h   | HB / *            | class             | IEC 60695-11-10      |
| Thickness tested                | 0.75 / *          | mm                | IEC 60695-11-10      |
| UL recognition                  | yes / *           | -                 | UL 94                |
| Glow Wire Flammability Index    |                   |                   | IEC 60695-2-1/2      |
| 30mil                           | 750 / -           | °C                |                      |
| 60mil                           | 700 / -           | °C                |                      |
| 120mil                          | 850 / -           | °C                |                      |
| Glow Wire Ignition Temperature  |                   |                   | IEC 60695-2-1/3      |
| 30mil                           | 775 / -           | °C                |                      |
| 60mil                           | 725 / -           | °C                |                      |
| 120mil                          | 775 / -           | °C                |                      |
| FMVSS Class                     | B                 | -                 | ISO 3795 (FMVSS 302) |
| Burning rate, Thickness 1 mm    | 44                | mm/min            | ISO 3795 (FMVSS 302) |
| <b>Electrical properties</b>    | <b>dry / cond</b> | <b>Unit</b>       | <b>Test Standard</b> |
| Volume resistivity              | 1E13 / -          | Ohm*m             | IEC 60093            |
| Electric strength               | 34 / 33           | kV/mm             | IEC 60243-1          |
| <b>Other properties</b>         | <b>dry / cond</b> | <b>Unit</b>       | <b>Test Standard</b> |
| Density                         | 1460 / -          | kg/m <sup>3</sup> | ISO 1183             |
| <b>Injection</b>                | <b>Value</b>      | <b>Unit</b>       | <b>Test Standard</b> |
| 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. mold temperature           | 90                | °C                | -                    |
| Max. mold temperature           | 110               | °C                | -                    |

### Characteristics

|                         |                                     |                             |                    |
|-------------------------|-------------------------------------|-----------------------------|--------------------|
| Processing              | • Injection Molding                 |                             |                    |
| Special characteristics | • Heat stabilized or stable to heat |                             |                    |
| Regional Availability   | • North America                     | • Asia Pacific              | • Near East/Africa |
|                         | • Europe                            | • South and Central America | • Global           |

### Processing Texts

#### 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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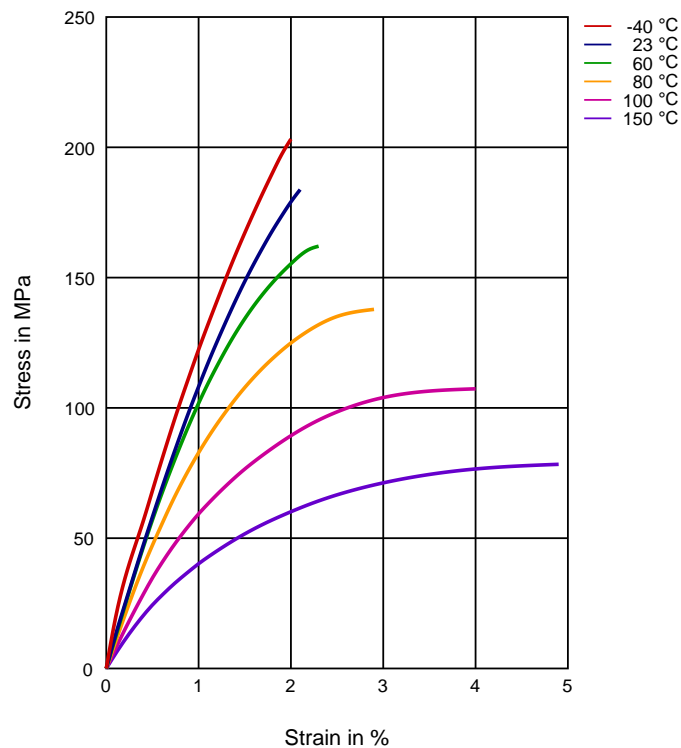


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## HIGH PERFORMANCE POLYAMIDE RESIN

Diagrams

Stress-strain (dry)



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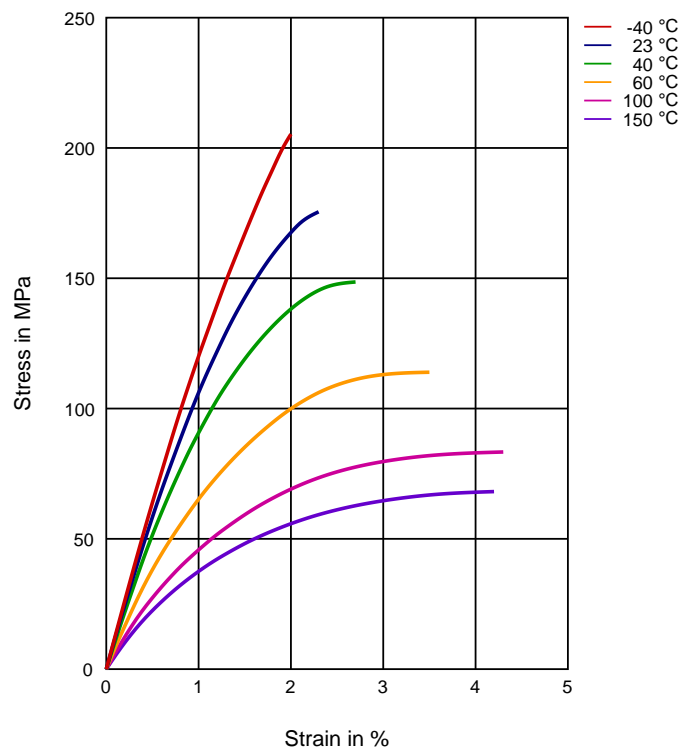
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## HIGH PERFORMANCE POLYAMIDE RESIN

Stress-strain (cond.)



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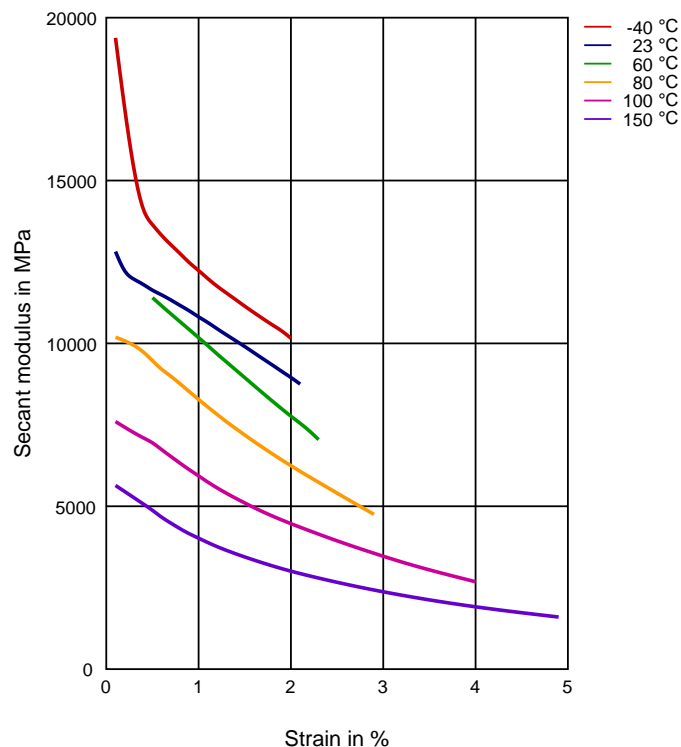


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## HIGH PERFORMANCE POLYAMIDE RESIN

Secant modulus-strain (dry)



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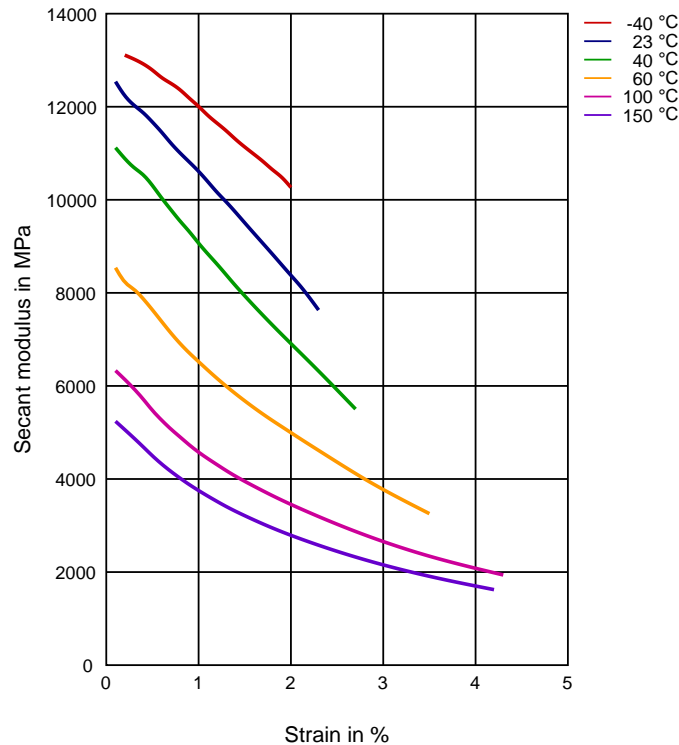
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## HIGH PERFORMANCE POLYAMIDE RESIN

Secant modulus-strain (cond.)



Contact DuPont for Material Safety Data Sheet, general guides and/or additional information about ventilation, handling, purging, drying, etc. ISO Mechanical properties measured at 160 mil (Hytrel® measured at 80 mil), IEC Electrical properties measured at 80 mil, all ASTM properties measured at 120 mil, and test temperatures are 73°F unless otherwise stated.

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