

# DuPont™ Zytel®

nylon resin

## Zytel® 70G13HS1L NC010

Zytel® 70G13HS1L NC010 is a 13% glass fiber reinforced, heat stabilized polyamide 66 resin for injection molding.

| Property                         | Test Method | Units             | Value       |            |
|----------------------------------|-------------|-------------------|-------------|------------|
|                                  |             |                   | DAM         | 50%RH      |
| <b>Identification</b>            |             |                   |             |            |
| Resin Identification             | ISO 1043    |                   | PA66-GF13   |            |
| Part Marking Code                | ISO 11469   |                   | >PA66-GF13< |            |
| <b>Mechanical</b>                |             |                   |             |            |
| Stress at Break                  | ISO 527     | MPa (kpsi)        | 120 (17.4)  | 75 (10.8)  |
| Strain at Break                  | ISO 527     | %                 | 3           | 13         |
| Tensile Modulus                  | ISO 527     | MPa (kpsi)        | 5500 (800)  | 3500 (508) |
| Flexural Modulus                 | ISO 178     | MPa (kpsi)        | 4900 (710)  | 2900 (420) |
| Flexural Strength                | ISO 178     | MPa (kpsi)        | 190 (27.6)  | 100 (14.5) |
| Notched Charpy Impact Strength   | ISO 179/1eA | kJ/m <sup>2</sup> |             |            |
| -40°C (-40°F)                    |             |                   | 4.5         |            |
| -30°C (-22°F)                    |             |                   |             | 4          |
| 23°C (73°F)                      |             |                   | 5           | 6          |
| Unnotched Charpy Impact Strength | ISO 179/1eU | kJ/m <sup>2</sup> |             |            |
| -30°C (-22°F)                    |             |                   | 30          | 30         |
| 23°C (73°F)                      |             |                   | 32          | 70         |

Contact DuPont for Material Safety Data Sheet, general guides and/or additional information about ventilation, handling, purging, drying, etc.

ISO Mechanical properties measured at 4.0mm, ISO Electrical properties measured at 2.0mm, and all ASTM properties measured at 3.2mm.

Test temperatures are 23°C unless otherwise stated.

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| Property                              | Test Method    | Units           | Value       |       |
|---------------------------------------|----------------|-----------------|-------------|-------|
|                                       |                |                 | DAM         | 50%RH |
| <b>Thermal</b>                        |                |                 |             |       |
| Deflection Temperature                | ISO 75f        | °C (°F)         |             |       |
| 0.45MPa                               |                |                 | 258 (496)   |       |
| 1.80MPa                               |                |                 | 238 (460)   |       |
| Melting Temperature                   | ISO 11357-1/-3 | °C (°F)         |             |       |
| 10°C/min                              |                |                 | 262 (504)   |       |
| CLTE, Normal                          | ISO 11359-1/-2 | E-4/C (E-4/F)   |             |       |
| -40 - 23°C (-40 - 73°F)               |                |                 | 0.77 (0.43) |       |
| 23 - 55°C (73 - 130°F)                |                |                 | 0.96 (0.53) |       |
| 55 - 160°C (130 - 320°F)              |                |                 | 1.58 (0.88) |       |
| CLTE, Parallel                        | ISO 11359-1/-2 | E-4/C (E-4/F)   |             |       |
| -40 - 23°C (-40 - 73°F)               |                |                 | 0.42 (0.23) |       |
| 23 - 55°C (73 - 130°F)                |                |                 | 0.40 (0.22) |       |
| 55 - 160°C (130 - 320°F)              |                |                 | 0.27 (0.15) |       |
| <b>Electrical</b>                     |                |                 |             |       |
| CTI                                   | UL 746A        | V               | >600        |       |
| <b>Flammability</b>                   |                |                 |             |       |
| Flammability Classification           | UL94           |                 | HB          |       |
| 0.71mm                                |                |                 |             |       |
| High Amperage Arc Ignition Resistance | UL 746A        | arcs            |             |       |
| 0.71mm                                |                |                 | >200        |       |
| High Voltage Arc Tracking Rate        | UL 746A        | mm/min (in/min) | 32.2 (1.27) |       |
| Hot Wire Ignition                     | UL 746A        | s               |             |       |
| 0.71mm                                |                |                 | 12          |       |
| 1.5mm                                 |                |                 | 7           |       |
| 3.0mm                                 |                |                 | 8           |       |
| <b>Temperature Index</b>              |                |                 |             |       |
| RTI, Electrical                       | UL 746B        | °C              |             |       |
| 0.71mm                                |                |                 | 140         |       |
| RTI, Impact                           | UL 746B        | °C              |             |       |
| 0.71mm                                |                |                 | 125         |       |
| RTI, Strength                         | UL 746B        | °C              |             |       |
| 0.71mm                                |                |                 | 140         |       |

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|---------------------------------|--------------------|----------------------------------------|-------------------|-------|
|                                 |                    |                                        | DAM               | 50%RH |
| Other                           |                    |                                        |                   |       |
| Density                         | ISO 1183           | kg/m <sup>3</sup> (g/cm <sup>3</sup> ) | 1230 (1.23)       |       |
| Water Absorption                | ISO 62, Similar to | %                                      |                   |       |
| Equilibrium 50%RH               |                    |                                        | 2.2               |       |
| Immersion 24h                   |                    |                                        | 1.7               |       |
| Saturation, immersed            |                    |                                        | 7.6               |       |
| Molding Shrinkage               | ISO 294-4          | %                                      |                   |       |
| Normal, 2.0mm                   |                    |                                        | 1.2               |       |
| Parallel, 2.0mm                 |                    |                                        | 0.7               |       |
| Mold Shrinkage                  |                    | %                                      |                   |       |
| Flow, 1.6mm (0.063in)           |                    |                                        | 0.6               |       |
| Flow, 3.2mm (0.126in)           |                    |                                        | 0.7               |       |
| Flow, 6.4mm (0.25in)            |                    |                                        | 0.9               |       |
| Transverse, 1.6mm (0.063in)     |                    |                                        | 1.2               |       |
| Transverse, 3.2mm (0.126in)     |                    |                                        | 1.4               |       |
| Transverse, 6.4mm (0.25in)      |                    |                                        | 1.7               |       |
| Processing                      |                    |                                        |                   |       |
| Melt Temperature Range          |                    | °C (°F)                                | 285-305 (545-580) |       |
| Melt Temperature Optimum        |                    | °C (°F)                                | 295 (565)         |       |
| Mold Temperature Range          |                    | °C (°F)                                | 70-120 (160-250)  |       |
| Mold Temperature Optimum        |                    | °C (°F)                                | 100 (210)         |       |
| Drying Time, Dehumidified Dryer |                    | h                                      | 2-4               |       |
| Drying Temperature              |                    | °C (°F)                                | 80 (175)          |       |
| Processing Moisture Content     |                    | %                                      | <0.20             |       |

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