# DuPont™ Zytel®

**nylon resin**

# Zytel® 135F NC010

Zytel® 135F NC010 is a nucleated polyamide 66 resin for injection molding. It was developed for fast cycles and high productivity.

| Property | Test Method | Units | Value | |
|---|---|---|---|---|
| | | | DAM | 50%RH |
| **Identification** | | | | |
| Resin Identification | ISO 1043 | | PA66 | |
| Part Marking Code | ISO 11469 | | >PA66< | |
| **Mechanical** | | | | |
| Yield Stress | ISO 527 | MPa (kpsi) | 96 (13.9) | 67 (9.7) |
| Strain at Break | ISO 527 | % | | |
| 50mm/min | | | 20 | >50 |
| Nominal Strain at Break | ISO 527 | % | 13 | 50 |
| Yield Strain | ISO 527 | % | 4.5 | 18 |
| Tensile Modulus | ISO 527 | MPa (kpsi) | 3600 (522) | 2000 (290) |
| Tensile Creep Modulus | ISO 899 | MPa (kpsi) | | |
| 1h | | | | 2000 (290) |
| 1000h | | | | 1280 (186) |
| Notched Charpy Impact Strength | ISO 179/1eA | $kJ/m^2$ | | |
| -30°C (-22°F) | | | 3 | 2.5 |
| 23°C (73°F) | | | 4 | 9 |
| Unnotched Charpy Impact Strength | ISO 179/1eU | $kJ/m^2$ | | |
| -30°C (-22°F) | | | NB | NB |
| 23°C (73°F) | | | NB | NB |

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 |
| **Thermal** | | | | |
| Deflection Temperature | ISO 75f | °C (°F) | | |
| 0.45MPa | | | 210 (410) | |
| 1.80MPa | | | 75 (167) | |
| Melting Temperature | ISO 11357-1/-3 | °C (°F) | | |
| 10°C/min | | | 263 (505) | |
| CLTE, Normal | ISO 11359-1/-2 | E-4/C (E-4/F) | | |
| 23 - 55°C (73 - 130°F) | | | 1.21 (0.68) | |
| CLTE, Parallel | ISO 11359-1/-2 | E-4/C (E-4/F) | | |
| 23 - 55°C (73 - 130°F) | | | 1.21 (0.68) | |
| Vicat Softening Temperature | ISO 306 | °C (°F) | | |
| 50N | | | 243 (469) | |
| **Electrical** | | | | |
| Relative Permittivity | IEC 60250 | | | |
| 1E2 Hz | | | 3.9 | 8.7 |
| 1E6 Hz | | | 3.8 | 3.9 |
| Dissipation Factor | IEC 60250 | E-4 | | |
| 1E2 Hz | | | 70 | 2400 |
| 1E6 Hz | | | 200 | 600 |
| CTI | IEC 60112 | V | 600 | |
| CTI | UL 746A | V | | |
| 3.0mm | | | >600 | |
| **Flammability** | | | | |
| Flammability Classification | IEC 60695-11-10 | | | |
| 0.71mm | | | V-2 | |
| Flammability Classification | UL94 | | | |
| 0.71mm | | | V-2 | |

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| | | | DAM | 50%RH |
| **Flammability** | | | | |
| Glow Wire Flammability Index | IEC 60695-2-12 | °C | | |
| 0.71mm | | | 960 | |
| 1.5mm | | | 960 | |
| 3.0mm | | | 960 | |
| Glow Wire Ignition Temperature | IEC 60695-2-13 | °C | | |
| 0.71mm | | | 725 | |
| 1.5mm | | | 750 | |
| 3.0mm | | | 800 | |
| **Temperature Index** | | | | |
| RTI, Electrical | UL 746B | °C | | |
| 0.71mm | | | 130 | |
| RTI, Impact | UL 746B | °C | | |
| 0.71mm | | | 75 | |
| RTI, Strength | UL 746B | °C | | |
| 0.71mm | | | 85 | |
| **Other** | | | | |
| Density | ISO 1183 | $kg/m^3$ $(g/cm^3)$ | 1140 (1.14) | |
| Hardness, Rockwell | ISO 2039/2 | | | |
| Scale M | | | 87 | 64 |
| Scale R | | | 123 | 116 |
| Water Absorption | ISO 62, Similar to | % | | |
| Equilibrium 50%RH | | | 2.7 | |
| Saturation, immersed | | | 8.5 | |
| Molding Shrinkage | ISO 294-4 | % | | |
| Parallel, 2.0mm | | | 0.7 | |

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| Property | Test Method | Units | Value | |
|---|---|---|---|---|
| | | | DAM | 50%RH |
| **Processing** | | | | |
| Melt Temperature Range | | °C (°F) | 280-300 (535-570) | |
| Melt Temperature Optimum | | °C (°F) | 290 (555) | |
| Mold Temperature Range | | °C (°F) | 50-90 (120-190) | |
| Mold Temperature Optimum | | °C (°F) | 70 (160) | |
| Drying Time, Dehumidified Dryer | | h | 2-4 | |
| Drying Temperature | | °C (°F) | 80 (175) | |
| Processing Moisture Content | | % | <0.20 | |

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