# DuPont Zytel®

nylon resin

# Zytel® MT409AHS BK010

Zytel® MT409AHS BK010 is a Medium Toughened, high performance, heat stabilized, black polyamide 66 resin having good stiffness and improved knit line strength with superior toughness and processability.

| Property | Test Method | Units | Value | |
|---|---|---|---|---|
| | | | DAM | 50%RH |
| **Identification** | | | | |
| Resin Identification | ISO 1043 | | PA66-I | |
| Part Marking Code | ISO 11469 | | >PA66-I< | |
| **Mechanical** | | | | |
| Yield Stress | ISO 527 | MPa (kpsi) | 60 (8.7) | 42 (6.1) |
| Yield Strain | ISO 527 | % | 6 | 27 |
| Nominal Strain at Break | ISO 527 | % | 29 | >50 |
| Tensile Modulus | ISO 527 | MPa (kpsi) | 2400 (348) | 1075 (156) |
| Tensile Stress @ 50% Strain | ISO 527 | MPa (kpsi) | 61 (8.8) | 43 (6.2) |
| Flexural Modulus | ISO 178 | MPa (kpsi) | 2200 (319) | 1075 (156) |
| Notched Charpy Impact Strength -40°C (-40°F) | ISO 179/1eA | kJ/m2 | 12 | |
| 23°C (73°F) | | | 19 | |

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 75-1/-2 | °C (°F) | | |
| 0.45MPa | | | 187 (369) | |
| 1.80MPa | | | 65 (149) | |
| Melting Temperature | ISO 11357-1/-3 | °C (°F) | | |
| 10°C/min | | | 262 (504) | |
| CLTE, Parallel | ISO 11359-1/-2 | E-4/C (E-4/F) | | |
| -40 - 23°C (-40 - 73°F) | | | 0.9 | |
| -30 - 30°C (-22 - 86°F) | | | (0.5) | |
| 23 - 55°C (73 - 130°F) | | | 0.9 | |
| 55 - 160°C (130 - 320°F) | | | (0.5) | |
| CLTE, Normal | ISO 11359-1/-2 | E-4/C (E-4/F) | 1.0 | |
| -40 - 23°C (-40 - 73°F) | | | (0.6) | |
| -30 - 30°C (-22 - 86°F) | | | 1.0 | |
| 23 - 55°C (73 - 130°F) | | | (0.6) | |
| 55 - 160°C (130 - 320°F) | | | 1.0 | |
| | | | (0.6) | |
| **Electrical** | | | | |
| Surface Resistivity | IEC 60093 | ohm | 3.6E15 | 4.7E11 |
| Volume Resistivity | IEC 60093 | ohm m | 1.4E13 | 9.7E9 |
| Electric Strength | IEC 60243-1 | kV/mm (V/mil) | 25 (635) | 22 (560) |
| Relative Permittivity | IEC 60250 | | | |
| 1E2 Hz | | | 3.9 | 9.8 |
| 1E6 Hz | | | 3.7 | 4.0 |
| Dissipation Factor | IEC 60250 | E-4 | | |
| 1E2 Hz | | | 60 | 435 |
| 1E6 Hz | | | 130 | 0 |
| CTI | IEC 60112 | V | 525 | 510 |
| CTI | UL 746A | V | 600 | 0 |

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| | | | DAM | 50%RH |
| **Flammability** | | | | |
| Flammability Classification | IEC 60695-11-10 | | | |
| 0.8mm | | | HB | |
| Flammability Classification | UL94 | | | |
| 0.8mm | | | HB | |
| High Amperage Arc Ignition Resistance | UL 746A | arcs | | |
| 0.8mm | | | 120 | |
| 1.5mm | | | 120 | |
| 3.0mm | | | 120 | |
| Hot Wire Ignition | UL 746A | s | | |
| 0.8mm | | | 7 | |
| 1.5mm | | | 7 | |
| 3.0mm | | | 7 | |
| **Temperature Index** | | | | |
| RTI, Electrical | UL 746B | °C | | |
| 0.8mm | | | 130 | |
| RTI, Impact | UL 746B | °C | | |
| 0.8mm | | | 65 | |
| 1.5mm | | | 105 | |
| RTI, Strength | UL 746B | °C | | |
| 0.8mm | | | 95 | |
| 1.5mm | | | 105 | |
| 3.0mm | | | 110 | |
| **Other** | | | | |
| Density | ISO 1183 | kg/m3 (g/cm3) | 1110 (1.11) | |
| Water Absorption | ISO 62, Similar to | % | | |
| Immersion 24h | | | 0.9 | |
| Molding Shrinkage | ISO 294-4 | % | | |
| Normal, 2.0mm | | | 1.7 | |
| Parallel, 2.0mm | | | 1.7 | |

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| | | | DAM | 50%RH |
| **Processing** | | | | |
| Melt Temperature Range | | °C (°F) | 270-300 (520-570) | |
| Melt Temperature Optimum | | °C (°F) | 280 (535) | |
| 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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