# Zytel® FR7026V0F BK001

NYLON RESIN

**Celanese Corporation**

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## Technical Data

| Product Description | | | |
|---|---|---|---|
| Unreinforced, Flame Retardant, Elemental phosphorous free,Heat Stabilized, Polyamide 66, Non-Chlorine & Non-Bromine Material | | | |
| **General** | | | |
| Material Status | • Commercial: Active | | |
| Literature [1] | • Technical Datasheet | | |
| UL Yellow Card [2] | • E41938-234499<br>• E41938-101927848 | | |
| Search for UL Yellow Card | • Celanese Corporation<br>• Zytel® | | |
| Availability | • Africa & Middle East<br>• Asia Pacific | • Europe<br>• Latin America | • North America |
| Additive | • Flame Retardant | • Flame Retardant | • Mold Release |
| Features | • Flame Retardant | • Halogen Free | • Low (to None) Phosphorus Content |
| RoHS Compliance | • Contact Manufacturer | | |
| Multi-Point Data | • Isothermal Stress vs. Strain (ISO 11403) | • Secant Modulus vs. Strain (ISO 11403) | • Specific Volume vs Temperature (ISO 11403) |
| Part Marking Code (ISO 11469) | • >PA66-FR(30)< | | |
| Resin ID (ISO 1043) | • PA66-FR(30) | | |
| ISO Designation | • ISO 16396-PA66,FR(30),M1CF1G1R,S14-040 | | |

| Physical | Dry | Conditioned | Unit | Test Method |
|---|---|---|---|---|
| Density | 1.16 | -- | g/cm³ | ISO 1183 |
| Molding Shrinkage | | | | ISO 294-4 |
| Across Flow | 1.0 | -- | % | |
| Flow | 0.90 | -- | % | |
| Water Absorption | | | | ISO 62 |
| 24 hr, 23°C, 2.00 mm | 1.8 | -- | % | |
| Saturation, 23°C, 2.00 mm | 8.0 | -- | % | |
| Equilibrium, 23°C, 2.00 mm, 50% RH | 2.5 | -- | % | |
| **Mechanical** | **Dry** | **Conditioned** | **Unit** | **Test Method** |
| Tensile Modulus | 3700 | 2000 | MPa | ISO 527-1 |
| Tensile Stress | | | | |
| Yield | -- | 55.0 | MPa | ISO 527-2/50 |
| Break | 80.0 | -- | MPa | ISO 527-2/5 |
| Tensile Strain | | | | |
| Yield | -- | 20 | % | ISO 527-2/50 |
| Break | 2.5 | -- | % | ISO 527-2/5 |
| Nominal Tensile Strain at Break | -- | 30 | % | ISO 527-2 |
| Poisson's Ratio | 0.36 | 0.40 | | |

| Impact | Dry | Conditioned | Unit | Test Method |
|---|---|---|---|---|
| Charpy Notched Impact Strength | | | | ISO 179/1eA |
| -30°C | 3.0 | 2.0 | kJ/m² | |
| 23°C | 3.2 | 7.0 | kJ/m² | |
| Charpy Unnotched Impact Strength (23°C) | 80 | 110 | kJ/m² | ISO 179/1eU |
| Notched Izod Impact Strength (23°C) | 4.4 | -- | kJ/m² | ISO 180/1A |
| **Hardness** | **Dry** | **Conditioned** | **Unit** | **Test Method** |
| Ball Indentation Hardness (H 358/30) | -- | 110 | MPa | ISO 2039-1 |
| **Thermal** | **Dry** | **Conditioned** | **Unit** | **Test Method** |
| Deflection Temperature Under Load | | | | |
| 0.45 MPa, Unannealed | 230 | -- | °C | ISO 75-2/B |
| 1.8 MPa, Unannealed | 80.0 | -- | °C | ISO 75-2/A |
| Glass Transition Temperature [4] | 80.0 | 20.0 | °C | ISO 11357-3 |
| Melting Temperature [4] | 260 | -- | °C | ISO 11357-3 |
| Ball Pressure Test [5] | 220 | -- | °C | |
| **Electrical** | **Dry** | **Conditioned** | **Unit** | **Test Method** |
| Surface Resistivity | -- | > 1.0E+15 | ohms | IEC 62631-3-2 |
| Electric Strength | 31 | 30 | kV/mm | IEC 60243-1 |
| Comparative Tracking Index (CTI) [6] | PLC 0 | -- | | UL 746A |
| Comparative Tracking Index | 600 | -- | V | IEC 60112 |
| **Flammability** | **Dry** | **Conditioned** | **Unit** | **Test Method** |
| Flame Rating | | | | UL 94 |
| 0.40 mm | V-0 | -- | | IEC 60695-11-10, -20 |
| 1.5 mm | V-0 | -- | | |
| Glow Wire Flammability Index | | | | IEC 60695-2-12 |
| 0.40 mm | 960 | -- | °C | |
| 0.75 mm | 960 | -- | °C | |
| 1.5 mm | 960 | -- | °C | |
| 3.0 mm | 960 | -- | °C | |
| Glow Wire Ignition Temperature | | | | IEC 60695-2-13 |
| 0.40 mm | 960 | -- | °C | |
| 0.75 mm | 960 | -- | °C | |
| 1.5 mm | 960 | -- | °C | |
| 3.0 mm | 960 | -- | °C | |
| Oxygen Index | 39 | -- | % | ISO 4589-2 |
| FMVSS Flammability [5] | DNI | -- | | FMVSS 302 |
| **Fill Analysis** | **Dry** | **Conditioned** | **Unit** | **Test Method** |
| Ejection Temperature | 210 | -- | °C | |
| Specific Heat Capacity of Melt | 2590 | -- | J/kg/°C | ISO 22007-4 |
| Thermal Conductivity of Melt | 0.17 | -- | W/m/K | ISO 22007-2 |

| Injection | Dry Unit |
|---|---|
| Drying Temperature | 80 °C |
| Drying Time - Desiccant Dryer | 2.0 to 4.0 hr |
| Suggested Max Moisture | < 0.20 % |
| Processing (Melt) Temp | 270 to 290 °C |



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| Injection | Dry Unit |
|---|---|
| Melt Temperature, Optimum | 280 °C |
| Mold Temperature | 50 to 90 °C |
| Mold Temperature, Optimum | 70 °C |
| Holding Pressure | 50.0 to 100 MPa |
| Drying Recommended | yes |
| Hold Pressure Time | 3.00 s/mm |
| Screw Tangential Speed | < 12 m/min |

## Notes

[1] These links provide you with access to supplier literature. We work hard to keep them up to date; however you may find the most current literature from the supplier.

[2] A UL Yellow Card contains UL-verified flammability and electrical characteristics. UL Prospector continually works to link Yellow Cards to individual plastic materials in Prospector, however this list may not include all of the appropriate links. It is important that you verify the association between these Yellow Cards and the plastic material found in Prospector. For a complete listing of Yellow Cards, visit the UL Yellow Card Search.

[3] Typical properties: these are not to be construed as specifications.

[4] 10°C/min

[5] Derived from Similar Grade

[6] 23°C



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