# Ascend Performance Materials VYDYNE® R533 Nylon, 33% Glass Reinforced

**Category :** Polymer , Thermoplastic , Nylon , Nylon 66 , Nylon 66, 30% Glass Fiber Filled

**Material Notes:**

Typical property data. VYDYNE is a registered trademark of Solutia Inc.

Order this product through the following link:
http://www.lookpolymers.com/polymer_Ascend-Performance-Materials-VYDYNE-R533-Nylon-33-Glass-Reinforced.php

| Physical Properties | Metric | English | Comments |
|---|---|---|---|
| Density | 1.40 g/cc | 0.0506 lb/in³ | ASTM D792 |
| Water Absorption | 0.70 % | 0.70 % | 24 hours; ASTM D570 |
| Moisture Absorption at Equilibrium | 1.6 % | 1.6 % | ASTM D570 |
| Water Absorption at Saturation | 5.4 % | 5.4 % | ASTM D570 |
| Linear Mold Shrinkage | 0.0030 - 0.0050 cm/cm | 0.0030 - 0.0050 in/in | ASTM D955 |

| Mechanical Properties | Metric | English | Comments |
|---|---|---|---|
| Hardness, Rockwell M | 95 | 95 | ASTM D785 |
| Tensile Strength, Ultimate | 193 MPa | 28000 psi | ASTM D638 |
| Elongation at Break | 5.0 % | 5.0 % | ASTM D638 |
| Flexural Yield Strength | 262 MPa | 38000 psi | ASTM D790 |
| Flexural Modulus | 9.30 GPa | 1350 ksi | ASTM D790 |
| Compressive Yield Strength | 241 MPa | 35000 psi | at 1% deformation; ASTM D695 |
| Shear Strength | 86.0 MPa | 12500 psi | ASTM D732 |
| Izod Impact, Notched | 1.10 J/cm<br>@Thickness 3.17 mm | 2.06 ft-lb/in<br>@Thickness 0.125 in | ASTM D256 |
| Taber Abrasion, mg/1000 Cycles | 20 | 20 | CS17 Wheel, 1 kg load; ASTM D1044 |

| Thermal Properties | Metric | English | Comments |
|---|---|---|---|
| CTE, linear | 23.0 µm/m-°C<br>@Temperature -40.0 - 82.0 °C | 12.8 µin/in-°F<br>@Temperature -40.0 - 180 °F | |
| Melting Point | 260 °C | 500 °F | ASTM D1525 |
| Deflection Temperature at 1.8 MPa | 249 °C | 480 °F | |

| Thermal Properties | Metric | English | Comments |
|---|---|---|---|
| (264 psi) | @Thickness 3.17 mm | @Thickness 0.125 in | Unannealed; ASTM D648 |
| Flammability, UL94 | HB | HB | |
| Oxygen Index | 28 % | 28 % | ASTM D2863 |

| Electrical Properties | Metric | English | Comments |
|---|---|---|---|
| Electrical Resistivity | 1.00e+15 ohm-cm | 1.00e+15 ohm-cm | ASTM D257 |
| Dielectric Constant | 4.5<br>@Frequency 1000 Hz | 4.5<br>@Frequency 1000 Hz | ASTM D150 |
| | 4.5<br>@Frequency 1e+6 Hz | 4.5<br>@Frequency 1e+6 Hz | ASTM D150 |
| Dielectric Strength | 17.3 kV/mm | 439 kV/in | step-by-step; ASTM D149 |
| Dissipation Factor | 0.20<br>@Frequency 1000 Hz | 0.20<br>@Frequency 1000 Hz | ASTM D150 |

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