

Ascend Performance Materials Vydyn[®] 41 Nylon 66, DAM

Category : Polymer , Thermoplastic , Nylon , Nylon 66

Material Notes:

Vydyn[®] 41 is a general-purpose, impact-modified PA66 resin. Available in natural, it is recognized for all the processing and property advantages inherent to PA66 with the addition of improved impact strength. This resin offers a well balanced combination of engineering properties characterized by high melt point, good surface lubricity, abrasion resistance and resistance to many chemicals, machine and motor oils, solvents and gasoline. Vydyn 41 is designed to meet the critical low-temperature impact requirements called out in many automotive specifications. Availability: Asia Pacific Europe North America Additive: Impact Modifier Features: Gasoline Resistance Good Abrasion Resistance Good Chemical Resistance Good Processability High Impact Resistance Impact Modified Low Temperature Impact Resistance Oil Resistant Solvent Resistant Uses: Appliances Automotive Applications Connectors Consumer Applications Electrical/Electronic Applications Fasteners Gears Industrial Applications Appearance: Natural Color Forms: Pellets Processing Method: Injection Molding Information provided by Ascend

Order this product through the following link:

http://www.lookpolymers.com/polymer_Ascend-Performance-Materials-Vydyn-41-Nylon-66-DAM.php

| Physical Properties | Metric | English | Comments |
|------------------------------------|-----------------------------------|-------------------------------------|----------------|
| Specific Gravity | 1.08 g/cc | 1.08 g/cc | ISO 1183 |
| Water Absorption | 1.0 % | 1.0 % | 24 hrs; ISO 62 |
| Moisture Absorption at Equilibrium | 2.1 % | 2.1 % | 50% RH; ISO 62 |
| Linear Mold Shrinkage | 0.018 cm/cm @Thickness 2.00 mm | 0.018 in/in @Thickness 0.0787 in | ISO 294-4 |
| Linear Mold Shrinkage, Transverse | 0.016 cm/cm @Thickness 2.00 mm | 0.016 in/in @Thickness 0.0787 in | ISO 294-4 |

| Mechanical Properties | Metric | English | Comments |
|----------------------------|---|---|-----------|
| Tensile Strength at Break | 43.0 MPa | 6240 psi | ISO 527-2 |
| Tensile Strength, Yield | 50.0 MPa | 7250 psi | ISO 527-2 |
| Elongation at Break | 50 % | 50 % | ISO 527-2 |
| Tensile Modulus | 1.86 GPa | 270 ksi | ISO 527-2 |
| Flexural Strength | 53.0 MPa | 7690 psi | ISO 178 |
| Flexural Modulus | 1.75 GPa | 254 ksi | ISO 178 |
| Izod Impact, Notched (ISO) | 22.0 kJ/m ² @Temperature -40.0 °C | 10.5 ft-lb/in ² @Temperature -40.0 °F | ISO 180 |

| Mechanical Properties | 40.0 kJ/m ² Metric | 19.0 ft-lb/in ² English | Comments |
|-------------------------|----------------------------------|---------------------------------------|----------|
| | @Temperature -30.0 °C | @Temperature -22.0 °F | |
| | 78.0 kJ/m ² | 37.1 ft-lb/in ² | ISO 180 |
| | @Temperature 23.0 °C | @Temperature 73.4 °F | |
| Charpy Impact Unnotched | NB | NB | ISO 179 |
| | @Temperature -30.0 °C | @Temperature -22.0 °F | |
| | NB | NB | ISO 179 |
| | @Temperature 23.0 °C | @Temperature 73.4 °F | |
| Charpy Impact, Notched | 2.00 J/cm ² | 9.52 ft-lb/in ² | ISO 179 |
| | @Temperature -40.0 °C | @Temperature -40.0 °F | |
| | 3.50 J/cm ² | 16.7 ft-lb/in ² | ISO 179 |
| | @Temperature -30.0 °C | @Temperature -22.0 °F | |
| | 7.60 J/cm ² | 36.2 ft-lb/in ² | ISO 179 |
| | @Temperature 23.0 °C | @Temperature 73.4 °F | |

| Thermal Properties | Metric | English | Comments |
|--|--|---|-------------|
| CTE, linear | 17.0 µm/m-°C | 9.44 µin/in-°F | ISO 11359-2 |
| | @Thickness 2.00 mm, Temperature 23.0 - 55.0 °C | @Thickness 0.0787 in, Temperature 73.4 - 131 °F | |
| CTE, linear, Transverse to Flow | 15.0 µm/m-°C | 8.33 µin/in-°F | ISO 11359-2 |
| | @Thickness 2.00 mm, Temperature 23.0 - 55.0 °C | @Thickness 0.0787 in, Temperature 73.4 - 131 °F | |
| Melting Point | 260 °C | 500 °F | ISO 11357-3 |
| Deflection Temperature at 0.46 MPa (66 psi) | 145 °C | 293 °F | ISO 75-2/B |
| Deflection Temperature at 1.8 MPa (264 psi) | 58.0 °C | 136 °F | ISO 75-2/B |
| UL RTI, Electrical | 125 °C | 257 °F | UL 746 |
| | @Thickness 0.750 mm | @Thickness 0.0295 in | |
| | 125 °C | 257 °F | UL 746 |
| | @Thickness 1.50 mm | @Thickness 0.0591 in | |
| | 125 °C | 257 °F | UL 746 |
| | @Thickness 3.00 mm | @Thickness 0.118 in | |

| Thermal Properties | Metric | English | Comments |
|-----------------------------------|---------------------|----------------------|--------------------------------------|
| UL RTI, Mechanical with Impact | @Thickness 0.750 mm | @Thickness 0.0295 in | UL 746 |
| | 75.0 °C | 167 °F | UL 746 |
| | @Thickness 1.50 mm | @Thickness 0.0591 in | |
| | 75.0 °C | 167 °F | UL 746 |
| | @Thickness 3.00 mm | @Thickness 0.118 in | |
| | 85.0 °C | 185 °F | UL 746 |
| UL RTI, Mechanical without Impact | @Thickness 0.750 mm | @Thickness 0.0295 in | UL 746 |
| | 85.0 °C | 185 °F | UL 746 |
| | @Thickness 1.50 mm | @Thickness 0.0591 in | |
| | 85.0 °C | 185 °F | UL 746 |
| | @Thickness 3.00 mm | @Thickness 0.118 in | |
| | HB | HB | |
| Flammability, UL94 | @Thickness 0.710 mm | @Thickness 0.0280 in | |
| | HB | HB | |
| | @Thickness 1.50 mm | @Thickness 0.0591 in | |
| | HB | HB | |
| | @Thickness 3.00 mm | @Thickness 0.118 in | |
| | 700 °C | 1290 °F | Flammability Index; IEC 60695-2-12 |
| Glow Wire Test | @Thickness 1.50 mm | @Thickness 0.0591 in | |
| | 700 °C | 1290 °F | Flammability Index; IEC 60695-2-12 |
| | @Thickness 3.00 mm | @Thickness 0.118 in | |
| | 725 °C | 1340 °F | Ignition Temperature; IEC 60695-2-13 |
| | @Thickness 1.50 mm | @Thickness 0.0591 in | |
| | 725 °C | 1340 °F | Ignition Temperature; IEC 60695-2-13 |
| | @Thickness 3.00 mm | @Thickness 0.118 in | |
| | 750 °C | 1380 °F | Flammability Index; IEC 60695-2-12 |
| | @Thickness 0.750 mm | @Thickness 0.0295 in | |
| | 775 °C | 1430 °F | Ignition Temperature; IEC 60695-2-13 |
| | @Thickness 0.750 mm | @Thickness 0.0295 in | |

| Electrical Properties | Metric | English | Comments |
|--------------------------------------|---------------------|----------------------|-----------|
| Volume Resistivity | 1.00e+11 ohm-cm | 1.00e+11 ohm-cm | IEC 60093 |
| | @Thickness 0.750 mm | @Thickness 0.0295 in | |
| Dielectric Strength | 26.0 kV/mm | 660 kV/in | IEC 60243 |
| | @Thickness 1.00 mm | @Thickness 0.0394 in | |
| Arc Resistance | 120 - 179 sec | 120 - 179 sec | ASTM D495 |
| | @Thickness 3.00 mm | @Thickness 0.118 in | |
| Comparative Tracking Index | 600 V | 600 V | IEC 60112 |
| | @Thickness 3.00 mm | @Thickness 0.118 in | |
| Hot Wire Ignition, HWI | 7.0 - 14 sec | 7.0 - 14 sec | UL 746 |
| | @Thickness 0.750 mm | @Thickness 0.0295 in | |
| | 15 - 29 sec | 15 - 29 sec | UL 746 |
| | @Thickness 1.50 mm | @Thickness 0.0591 in | |
| | 15 - 29 sec | 15 - 29 sec | UL 746 |
| | @Thickness 3.00 mm | @Thickness 0.118 in | |
| High Amp Arc Ignition, HAI | >= 120 arcs | >= 120 arcs | UL 746 |
| | @Thickness 0.750 mm | @Thickness 0.0295 in | |
| | >= 120 arcs | >= 120 arcs | UL 746 |
| | @Thickness 1.50 mm | @Thickness 0.0591 in | |
| | >= 120 arcs | >= 120 arcs | UL 746 |
| | @Thickness 3.00 mm | @Thickness 0.118 in | |
| High Voltage Arc-Tracking Rate, HVTR | 0.000 - 10.0 mm/min | 0.000 - 0.394 in/min | UL 746 |

| Processing Properties | Metric | English | Comments |
|---------------------------|----------------|--------------|----------|
| Processing Temperature | 285 - 305 °C | 545 - 581 °F | |
| Rear Barrel Temperature | 280 - 310 °C | 536 - 590 °F | |
| Middle Barrel Temperature | 280 - 310 °C | 536 - 590 °F | |
| Front Barrel Temperature | 280 - 310 °C | 536 - 590 °F | |
| Nozzle Temperature | 280 - 310 °C | 536 - 590 °F | |
| Mold Temperature | 65.0 - 95.0 °C | 149 - 203 °F | |

| <small>Drying Temperature</small> Processing Properties | <small>80.0 °C</small> Metric | <small>176 °F</small> English | Comments |
|--|----------------------------------|----------------------------------|----------|
| Dry Time | 4.00 hour | 4.00 hour | |

| Descriptive Properties | Value | Comments |
|------------------------|-------|----------|
| Suggested Max Regrind | 25% | |

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