

## Ascend Performance Materials Vydyn<sup>®</sup> 20NSP1 Nylon 66, DAM

Category : Polymer , Thermoplastic , Nylon , Nylon 66 , Nylon 66, Unreinforced

### Material Notes:

Availability:Asia PacificEuropeNorth AmericaFiller/Reinforcement:Glass Fiber, 43% Filler by Weight Additive:Nucleating AgentLubricant

Features:Fast Molding CycleGeneral PurposeGood Mold Release Good StiffnessHigh Rigidity

LubricatedNucleatedUses:BearingsCamsConnectorsFastenersGeneral PurposeHousings Industrial ApplicationsAppearance: BlackForms:

PelletsProcessing Method: Injection MoldingInformation provided by Ascend Performance Materials.

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_Ascend-Performance-Materials-Vydyn-20NSP1-Nylon-66-DAM.php](http://www.lookpolymers.com/polymer_Ascend-Performance-Materials-Vydyn-20NSP1-Nylon-66-DAM.php)

| Physical Properties                | Metric                           | English                            | Comments       |
|------------------------------------|----------------------------------|------------------------------------|----------------|
| Density                            | 1.14 g/cc                        | 0.0412 lb/in <sup>3</sup>          | ISO 1183       |
| Water Absorption                   | 1.2 %<br>@Time 86400 sec         | 1.2 %<br>@Time 24.0 hour           | ISO 62         |
| Moisture Absorption at Equilibrium | 2.4 %                            | 2.4 %                              | 50% RH; ISO 62 |
| Linear Mold Shrinkage, Flow        | 0.014 cm/cm<br>@Diameter 2.00 mm | 0.014 in/in<br>@Diameter 0.0787 in | ISO 294-4      |
| Linear Mold Shrinkage, Transverse  | 0.016 cm/cm<br>@Diameter 2.00 mm | 0.016 in/in<br>@Diameter 0.0787 in | ISO 294-4      |

| Mechanical Properties      | Metric  | English   | Comments  |
|----------------------------|---|---|-----------|
| Tensile Strength at Break  | 75.0 MPa  | 10900 psi   | ISO 527-2 |
| Tensile Strength, Yield    | 95.0 MPa  | 13800 psi   | ISO 527-2 |
| Elongation at Break        | 13 %  | 13 %  | ISO 527-2 |
| Elongation at Yield        | 5.0 %   | 5.0 %   | ISO 527-2 |
| Tensile Modulus            | 3.80 GPa  | 551 ksi   | ISO 527-2 |
| Flexural Strength          | 100 MPa   | 14500 psi   | ISO 178   |
| Flexural Modulus           | 3.20 GPa  | 464 ksi   | ISO 178   |
| Poissons Ratio             | 0.40  | 0.40  | ISO 527-2 |
| Izod Impact, Notched (ISO) | 5.00 kJ/m <sup>2</sup><br>@Temperature -30.0 °C | 2.38 ft-lb/in <sup>2</sup><br>@Temperature -22.0 °F | ISO 180   |
|                            | 6.00 kJ/m <sup>2</sup>                          | 2.86 ft-lb/in <sup>2</sup>                          |           |

| Mechanical Properties   | Metric<br>@ Temperature 23.0 °C | English<br>@ Temperature 73.4 °F | ISO 180<br>Comments |
|-------------------------|---------------------------------|----------------------------------|---------------------|
| Charpy Impact Unnotched | NB                              | NB                               | ISO 179/1eU         |
|                         | @Temperature -30.0 °C           | @Temperature -22.0 °F            |                     |
|                         | NB                              | NB                               | ISO 179/1eU         |
|                         | @Temperature 23.0 °C            | @Temperature 73.4 °F             |                     |
| Charpy Impact, Notched  | 0.500 J/cm <sup>2</sup>         | 2.38 ft-lb/in <sup>2</sup>       | ISO 179/1eA         |
|                         | @Temperature -30.0 °C           | @Temperature -22.0 °F            |                     |
|                         | 0.600 J/cm <sup>2</sup>         | 2.86 ft-lb/in <sup>2</sup>       | ISO 179/1eA         |
|                         | @Temperature 23.0 °C            | @Temperature 73.4 °F             |                     |

| Thermal Properties                          | Metric   | English   | Comments               |
|---|--|---|------------------------|
| CTE, linear, Parallel to Flow               | 10.0 µm/m-°C                                   | 5.56 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             | 10.0 µm/m-°C                                   | 5.56 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) | 230 °C   | 446 °F  | Unannealed; ISO 75-2/B |
| Deflection Temperature at 1.8 MPa (264 psi) | 90.0 °C  | 194 °F  | Unannealed; ISO 75-2/A |
| UL RTI, Electrical                          | 130 °C   | 266 °F  | UL 746                 |
|   | @Thickness 0.710 mm                            | @Thickness 0.0280 in                            |                        |
|   | 130 °C   | 266 °F  |                        |
|   | @Thickness 1.50 mm                             | @Thickness 0.0591 in                            | UL 746                 |
|   | 130 °C   | 266 °F  | UL 746                 |
|   | @Thickness 3.00 mm                             | @Thickness 0.118 in                             | UL 746                 |
|   | 75.0 °C  | 167 °F  | UL 746                 |
| UL RTI, Mechanical with Impact              | @Thickness 0.710 mm                            | @Thickness 0.0280 in                            | UL 746                 |
|   | 75.0 °C  | 167 °F  | UL 746                 |
|   | @Thickness 1.50 mm                             | @Thickness 0.0591 in                            | UL 746                 |

| Thermal Properties                | 75.0 °C<br>Metric   | 167 °F<br>English    | Comments                             |
|-----------------------------------|---------------------|----------------------|--------------------------------------|
|                                   | @Thickness 3.00 mm  | @Thickness 0.118 in  |                                      |
| UL RTI, Mechanical without Impact | 85.0 °C             | 185 °F               | UL 746                               |
|                                   | @Thickness 0.710 mm | @Thickness 0.0280 in |                                      |
|                                   | 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  |                                      |
| Flammability, UL94                | V-2                 | V-2                  |                                      |
|                                   | @Thickness 0.710 mm | @Thickness 0.0280 in |                                      |
|                                   | V-2                 | V-2                  |                                      |
|                                   | @Thickness 1.50 mm  | @Thickness 0.0591 in |                                      |
|                                   | V-2                 | V-2                  |                                      |
|                                   | @Thickness 3.00 mm  | @Thickness 0.118 in  |                                      |
| Oxygen Index                      | 26 %                | 26 %                 | ISO 4589-2                           |
| Glow Wire Test                    | 700 °C              | 1290 °F              | Ignition Temperature; IEC 60695-2-13 |
|                                   | @Thickness 0.710 mm | @Thickness 0.0280 in |                                      |
|                                   | 700 °C              | 1290 °F              | Ignition Temperature; IEC 60695-2-13 |
|                                   | @Thickness 1.50 mm  | @Thickness 0.0591 in |                                      |
|                                   | 700 °C              | 1290 °F              | Ignition Temperature; IEC 60695-2-13 |
|                                   | @Thickness 3.00 mm  | @Thickness 0.118 in  |                                      |
|                                   | 800 °C              | 1470 °F              | Flammability Index; IEC 60695-2-12   |
|                                   | @Thickness 0.710 mm | @Thickness 0.0280 in |                                      |
|                                   | 800 °C              | 1470 °F              | Flammability Index; IEC 60695-2-12   |
|                                   | @Thickness 1.50 mm  | @Thickness 0.0591 in |                                      |
|                                   | 930 °C              | 1710 °F              | Flammability Index; IEC 60695-2-12   |
|                                   | @Thickness 3.00 mm  | @Thickness 0.118 in  |                                      |

| Electrical Properties | Metric             | English              | Comments  |
|-----------------------|--------------------|----------------------|-----------|
| Dielectric Strength   | 26.0 kV/mm         | 660 kV/in            | IEC 60243 |
|                       | @Thickness 1.00 mm | @Thickness 0.0394 in |           |

| Electrical Properties                | 120 - 179 sec<br>Metric             | 120 - 179 sec<br>English             | Comments  |
|--------------------------------------|-------------------------------------|--------------------------------------|-----------|
|                                      | @Thickness 3.00 mm                  | @Thickness 0.118 in                  |           |
| Comparative Tracking Index           | 600 V<br>@Thickness 3.00 mm         | 600 V<br>@Thickness 0.118 in         | IEC 60112 |
| Hot Wire Ignition, HWI               | 7.0 - 14 sec<br>@Thickness 0.710 mm | 7.0 - 14 sec<br>@Thickness 0.0280 in | UL 746    |
|                                      | 15 - 29 sec<br>@Thickness 1.50 mm   | 15 - 29 sec<br>@Thickness 0.0591 in  | UL 746    |
|                                      | 15 - 29 sec<br>@Thickness 3.00 mm   | 15 - 29 sec<br>@Thickness 0.118 in   | UL 746    |
| High Amp Arc Ignition, HAI           | >= 120 arcs<br>@Thickness 0.710 mm  | >= 120 arcs<br>@Thickness 0.0280 in  | UL 746    |
|                                      | >= 120 arcs<br>@Thickness 1.50 mm   | >= 120 arcs<br>@Thickness 0.0591 in  | UL 746    |
|                                      | >= 120 arcs<br>@Thickness 3.00 mm   | >= 120 arcs<br>@Thickness 0.118 in   | UL 746    |
| 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 |
|---------------------------|------------------|------------------|----------|
| Rear Barrel Temperature   | 260 - 280 °C     | 500 - 536 °F     |          |
| Middle Barrel Temperature | 270 - 285 °C     | 518 - 545 °F     |          |
| Front Barrel Temperature  | 280 - 290 °C     | 536 - 554 °F     |          |
| Nozzle Temperature        | 280 - 300 °C     | 536 - 572 °F     |          |
| Melt Temperature          | 285 - 300 °C     | 545 - 572 °F     |          |
| Mold Temperature          | 65.0 - 95.0 °C   | 149 - 203 °F     |          |
| Drying Temperature        | <= 70.0 °C       | <= 158 °F        |          |
| Dry Time                  | 1.00 - 3.00 hour | 1.00 - 3.00 hour |          |

| Descriptive Properties | Value | Comments |
|------------------------|-------|----------|
| Suggested Max Regrind  | 50 %  |          |

## **Contact Songhan Plastic Technology Co.,Ltd.**

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