

# Vydyne® 66Z

Polyamide 66

Ascend Performance Materials Operations LLC

## Message:

Vydyne 66Z is a high-viscosity PA66 resin suitable for injection-molding and extrusion applications. It is available in natural color only. Vydyne 66Z resin offers high strength, rigidity and toughness over a broad range of demanding applications and good fluid resistance to a wide variety of chemicals, solvents and oils.

Typical Applications/End Uses:

Typical uses include packaging films, monofilaments, bristles, rods, tubing, sheet and extruded profiles.

| General Information |                                                                                                                                                                           |
|---------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Features            | Rigidity, high<br>High strength<br>Solvent resistance<br>Good melt strength<br>Good chemical resistance<br>Oil resistance<br>Good toughness<br>General<br>Viscosity, High |
| Uses                | Bar<br>Films<br>monofilament<br>Industrial application<br>Pipe fittings<br>cast film<br>Sheet<br>Food packaging                                                           |
| Agency Ratings      | ASTM D 4066 PA0114<br>ASTM D 6779 PA0114                                                                                                                                  |
| RoHS Compliance     | RoHS compliance                                                                                                                                                           |
| Appearance          | Natural color                                                                                                                                                             |
| Forms               | Particle                                                                                                                                                                  |
| Processing Method   | Extrusion<br>Injection molding                                                                                                                                            |

| Physical | Dry  | Conditioned | Unit              | Test Method |
|----------|------|-------------|-------------------|-------------|
| Density  | 1.14 | --          | g/cm <sup>3</sup> | ISO 1183    |

|                                           |          |             |                   |             |
|-------------------------------------------|----------|-------------|-------------------|-------------|
| Molding Shrinkage                         |          |             |                   | ISO 294-4   |
| Vertical flow direction:<br>23°C, 2.00mm  | 2.1      | --          | %                 | ISO 294-4   |
| Flow direction: 23°C,<br>2.00mm           | 2.2      | --          | %                 | ISO 294-4   |
| Water Absorption                          |          |             |                   | ISO 62      |
| Saturated, 23°C                           | 8.5      | --          | %                 | ISO 62      |
| Equilibrium, 23°C, 50%<br>RH              | 2.5      | --          | %                 | ISO 62      |
| Mechanical                                | Dry      | Conditioned | Unit              | Test Method |
| Tensile Modulus (23°C)                    | 2850     | 1900        | MPa               | ISO 527-2   |
| Tensile Stress                            |          |             |                   | ISO 527-2   |
| Yield, 23°C                               | 85.0     | 55.0        | MPa               | ISO 527-2   |
| Fracture, 23°C                            | 55.0     | 70.0        | MPa               | ISO 527-2   |
| Tensile Strain (Yield, 23°C)              | 5.0      | 20          | %                 | ISO 527-2   |
| Nominal Tensile Strain at<br>Break (23°C) | 40       | 250         | %                 | ISO 527-2   |
| Flexural Modulus (23°C)                   | 2400     | 750         | MPa               | ISO 178     |
| Flexural Strength (23°C)                  | 80.0     | 20.0        | MPa               | ISO 178     |
| Poisson's Ratio                           | 0.40     | --          |                   | ISO 527-2   |
| Impact                                    | Dry      | Conditioned | Unit              | Test Method |
| Charpy Notched Impact<br>Strength         |          |             |                   | ISO 179/1eA |
| -30°C                                     | 6.0      | 6.0         | kJ/m <sup>2</sup> | ISO 179/1eA |
| 23°C                                      | 7.0      | 30          | kJ/m <sup>2</sup> | ISO 179/1eA |
| Charpy Unnotched Impact<br>Strength       |          |             |                   | ISO 179/1eU |
| -30°C                                     | No Break | No Break    |                   | ISO 179/1eU |
| 23°C                                      | No Break | No Break    |                   | ISO 179/1eU |
| Notched Izod Impact                       |          |             |                   | ISO 180     |
| -30°C                                     | 6.0      | 6.0         | kJ/m <sup>2</sup> | ISO 180     |
| 23°C                                      | 7.0      | 30          | kJ/m <sup>2</sup> | ISO 180     |
| Thermal                                   | Dry      | Conditioned | Unit              | Test Method |
| Heat Deflection<br>Temperature            |          |             |                   |             |
| 0.45 MPa, not annealed                    | 200      | --          | °C                | ISO 75-2/B  |
| 1.8 MPa, not annealed                     | 65.0     | --          | °C                | ISO 75-2/A  |
| Melting Temperature                       | 260      | --          | °C                | ISO 11357-3 |
| Linear thermal expansion<br>coefficient   |          |             |                   | ISO 11359-2 |
| Flow: 23 to 55°C,<br>2.00mm               | 1.0E-4   | --          | cm/cm/°C          | ISO 11359-2 |
| Lateral: 23 to 55°C,<br>2.00mm            | 1.0E-4   | --          | cm/cm/°C          | ISO 11359-2 |
| Extrusion                                 | Dry      | Unit        |                   |             |

|                       |           |    |
|-----------------------|-----------|----|
| Cylinder Zone 1 Temp. | 250 - 295 | °C |
| Cylinder Zone 2 Temp. | 250 - 295 | °C |
| Cylinder Zone 3 Temp. | 250 - 295 | °C |
| Cylinder Zone 4 Temp. | 250 - 295 | °C |
| Cylinder Zone 5 Temp. | 250 - 295 | °C |
| Melt Temperature      | 270 - 295 | °C |
| Die Temperature       | 270 - 295 | °C |

#### Extrusion instructions

Recommended Extrusion Conditions: Melt Point: 260°C Melt Pressure: 3 to 17 MPa Blow Film Bath Temperature: 20°C to 80°C Chill Roll Temperature (Cast Film): 20°C to 80°C Screw Design: General Purpose or Barrier

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