

# Vydyne® R530H BK02

Polyamide 66

Ascend Performance Materials Operations LLC

## Message:

Vydyne R530H BK02 is high-flow, heat-stabilized, 30% glass-fiber reinforced PA66 resin. Available in black, it is specifically designed to maximize the retention of physical properties when exposed to anti-freeze solutions at elevated temperatures. This product is also lubricated for improved machine feed and flow.

Glass-reinforced Vydyne resins provide higher heat distortion temperature, resistance to creep and better dimensional stability when compared with unreinforced PA66. These products have good chemical resistance to a broad range of chemicals including gasoline, hydraulic fluids and most solvents. Vydyne R530H BK02 is heat-stabilized to minimize oxidative degradation of the polymer when exposed to elevated temperatures in service. This product provides improved retention of physical properties under exposure to long-term heat. Also, Vydyne R530H BK02 has excellent knit-line strength and fatigue resistance, which is essential for cycle testing with anti-freeze solutions.

Typical Applications/End Uses:  
To come

| General Information         |      |                                  |                   |             |
|-----------------------------|------|----------------------------------|-------------------|-------------|
| UL YellowCard               |      | E70062-249083                    |                   |             |
| Filler / Reinforcement      |      | Glass Fiber,30% Filler by Weight |                   |             |
| Additive                    |      | Heat Stabilizer                  |                   |             |
|                             |      | Lubricant                        |                   |             |
| Features                    |      | Antifreeze Resistant             |                   |             |
|                             |      | Fatigue Resistant                |                   |             |
|                             |      | Gasoline Resistance              |                   |             |
|                             |      | Good Chemical Resistance         |                   |             |
|                             |      | Heat Stabilized                  |                   |             |
|                             |      | High Flow                        |                   |             |
|                             |      | Lubricated                       |                   |             |
|                             |      | Solvent Resistant                |                   |             |
| Uses                        |      | Automotive Under the Hood        |                   |             |
| Agency Ratings              |      | ASTM D 4066 PA0121G30            |                   |             |
|                             |      | ASTM D 6779 PA0121G30            |                   |             |
| UL File Number              |      | E70062                           |                   |             |
| Appearance                  |      | Black                            |                   |             |
| Forms                       |      | Pellets                          |                   |             |
| Processing Method           |      | Injection Molding                |                   |             |
| Physical                    | Dry  | Conditioned                      | Unit              | Test Method |
| Density                     | 1.37 | --                               | g/cm <sup>3</sup> | ISO 1183    |
| Molding Shrinkage           |      |                                  |                   | ISO 294-4   |
| Across Flow : 23°C, 2.00 mm | 0.90 | --                               | %                 |             |

|                                  |        |             |                   |             |
|----------------------------------|--------|-------------|-------------------|-------------|
| Flow : 23°C, 2.00 mm             | 0.40   | --          | %                 |             |
| Water Absorption                 |        |             |                   | ISO 62      |
| 23°C, 24 hr                      | 0.90   | --          | %                 |             |
| Equilibrium, 50% RH              | 1.9    | --          | %                 |             |
| Mechanical                       | Dry    | Conditioned | Unit              | Test Method |
| Tensile Modulus (23°C)           | 10000  | 7400        | MPa               | ISO 527-2   |
| Tensile Stress (Break, 23°C)     | 195    | 135         | MPa               | ISO 527-2   |
| Tensile Strain (Break, 23°C)     | 3.0    | 5.0         | %                 | ISO 527-2   |
| Flexural Modulus (23°C)          | 9600   | 6000        | MPa               | ISO 178     |
| Flexural Stress (23°C)           | 270    | 190         | MPa               | ISO 178     |
| Poisson's Ratio (23°C)           | 0.40   | --          |                   | ISO 527     |
| Impact                           | Dry    | Conditioned | Unit              | Test Method |
| Charpy Notched Impact Strength   |        |             |                   | ISO 179     |
| -30°C                            | 10     | 11          | kJ/m <sup>2</sup> |             |
| 23°C                             | 11     | 13          | kJ/m <sup>2</sup> |             |
| Charpy Unnotched Impact Strength |        |             |                   | ISO 179     |
| -30°C                            | 65     | 80          | kJ/m <sup>2</sup> |             |
| 23°C                             | 75     | 85          | kJ/m <sup>2</sup> |             |
| Notched Izod Impact Strength     |        |             |                   | ISO 180     |
| -30°C                            | 10     | 11          | kJ/m <sup>2</sup> |             |
| 23°C                             | 12     | 13          | kJ/m <sup>2</sup> |             |
| Thermal                          | Dry    | Conditioned | Unit              | Test Method |
| Heat Deflection Temperature      |        |             |                   |             |
| 0.45 MPa, Unannealed             | 260    | --          | °C                | ISO 75-2/B  |
| 1.8 MPa, Unannealed              | 250    | --          | °C                | ISO 75-2/A  |
| Melting Temperature              | 260    | --          | °C                | ISO 11357-3 |
| CLTE                             |        |             |                   | ISO 11359-2 |
| Flow : 23 to 55°C, 2.00 mm       | 2.2E-5 | --          | cm/cm/°C          |             |
| Transverse : 23 to 55°C, 2.00 mm | 1.1E-4 | --          | cm/cm/°C          |             |
| RTI Elec                         |        |             |                   | UL 746      |
| 0.750 mm                         | 140    | --          | °C                |             |
| 1.50 mm                          | 140    | --          | °C                |             |
| 3.00 mm                          | 140    | --          | °C                |             |
| RTI Imp                          |        |             |                   | UL 746      |
| 0.750 mm                         | 120    | --          | °C                |             |
| 1.50 mm                          | 120    | --          | °C                |             |
| 3.00 mm                          | 120    | --          | °C                |             |
| RTI Str                          |        |             |                   | UL 746      |

|                                       |            |             |         |                |
|---------------------------------------|------------|-------------|---------|----------------|
| 0.750 mm                              | 125        | --          | °C      |                |
| 1.50 mm                               | 140        | --          | °C      |                |
| 3.00 mm                               | 140        | --          | °C      |                |
| Electrical                            | Dry        | Conditioned | Unit    | Test Method    |
| Volume Resistivity (3.00 mm)          | 1.0E+13    | --          | ohms·cm | IEC 60093      |
| Dielectric Strength (1.00 mm)         | 20         | --          | kV/mm   | IEC 60243      |
| Arc Resistance (3.00 mm)              | PLC 6      | --          |         | ASTM D495      |
| Comparative Tracking Index (3.00 mm)  | 250 to 399 | --          | V       | IEC 60112      |
| High Amp Arc Ignition (HAI)           |            |             |         | UL 746         |
| 0.750 mm                              | PLC 0      | --          |         |                |
| 1.50 mm                               | PLC 0      | --          |         |                |
| 3.00 mm                               | PLC 0      | --          |         |                |
| High Voltage Arc Tracking Rate (HVTR) | PLC 1      | --          |         | UL 746         |
| Hot-wire Ignition (HWI)               |            |             |         | UL 746         |
| 0.750 mm                              | PLC 4      | --          |         |                |
| 1.50 mm                               | PLC 3      | --          |         |                |
| 3.00 mm                               | PLC 4      | --          |         |                |
| Flammability                          | Dry        | Conditioned | Unit    | Test Method    |
| Flame Rating                          |            |             |         | UL 94          |
| 0.750 mm                              | HB         | --          |         |                |
| 1.50 mm                               | HB         | --          |         |                |
| 3.00 mm                               | HB         | --          |         |                |
| Glow Wire Flammability Index          |            |             |         | IEC 60695-2-12 |
| 0.750 mm                              | 675        | --          | °C      |                |
| 1.50 mm                               | 675        | --          | °C      |                |
| 3.00 mm                               | 675        | --          | °C      |                |
| Glow Wire Ignition Temperature        |            |             |         | IEC 60695-2-13 |
| 0.750 mm                              | 700        | --          | °C      |                |
| 1.50 mm                               | 700        | --          | °C      |                |
| 3.00 mm                               | 700        | --          | °C      |                |
| Injection                             | Dry        | Unit        |         |                |
| Drying Temperature                    | 80.0       |             | °C      |                |
| Drying Time                           | 4.0        |             | hr      |                |
| Suggested Max Regrind                 | 25         |             | %       |                |
| Rear Temperature                      | 280 to 310 |             | °C      |                |
| Middle Temperature                    | 280 to 310 |             | °C      |                |
| Front Temperature                     | 280 to 310 |             | °C      |                |

|                        |              |    |
|------------------------|--------------|----|
| Nozzle Temperature     | 280 to 310   | °C |
| Processing (Melt) Temp | 285 to 305   | °C |
| Mold Temperature       | 65.0 to 95.0 | °C |

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