

Vydyne R550H BK02 is a general purpose, 50% glass-filled, heat-stabilized PA66 based resin designed for injection molding applications. R550H BK02 offers improved flow with a black surface finish and maintains the excellent resistance typical of PA66 in chemicals, machine and motor oils, solvents, and gasoline.

## General

|                           |                                                                                                    |                                                            |                                                       |
|---------------------------|----------------------------------------------------------------------------------------------------|------------------------------------------------------------|-------------------------------------------------------|
| Additive                  | • Heat Stabilizer                                                                                  | • Lubricant                                                |                                                       |
| Features                  | • Fatigue Resistant<br>• High Flow<br>• Hydrolysis Resistant                                       | • Good Mold Release<br>• High Rigidity<br>• Lubricated     | • Heat Stabilized<br>• High Strength                  |
| Agency Rating             | • ASTM, D6779 PA012G50                                                                             | • RoHS Compliant                                           | • SAE, J1639 PA1116                                   |
| Automotive Specifications | • GM GMW3038P-PA66-GF50H<br>• Renault AS25a<br><br>• Toyota TSM5603G, Class 2C, Rev 5 (compliance) | • GM GMW3038P-PA66-GF50J<br>• Stellantis MS-DB-41 CPN 4967 | • Li Auto QLiA53100058<br>• Tesla TM-1006 v3 - 201150 |
| UL File Number            | • E70062                                                                                           |                                                            |                                                       |
| Appearance                | • Black                                                                                            |                                                            |                                                       |
| Forms                     | • Pellets                                                                                          |                                                            |                                                       |
| Processing Method         | • Injection Molding                                                                                |                                                            |                                                       |

## Physical

|                             | dry  | cond. | Unit              | Test Standard |
|-----------------------------|------|-------|-------------------|---------------|
| Density                     | 1.58 | -     | g/cm <sup>3</sup> | ISO 1183      |
| Molding Shrinkage           |      |       |                   | ISO 294-4     |
| Across Flow : 23°C, 2.00 mm | 0.8  | *     | %                 |               |
| Flow : 23°C, 2.00 mm        | 0.3  | *     | %                 |               |
| Water Absorption            |      |       |                   | ISO 62        |
| 23°C, 24 hr                 | 0.5  | *     | %                 |               |
| Equilibrium, 23°C, 50% RH   | 1.2  | *     | %                 |               |

## Mechanical

|                              | dry   | cond. | Unit | Test Standard |
|------------------------------|-------|-------|------|---------------|
| Tensile Modulus (23°C)       | 17100 | 13200 | MPa  | ISO 527-2     |
| Tensile Stress (Break, 23°C) | 240   | 173   | MPa  | ISO 527-2     |
| Tensile Strain (Break, 23°C) | 2.6   | 3.7   | %    | ISO 527-2     |
| Flexural Modulus (23°C)      | 16000 | 11200 | MPa  | ISO 178       |
| Flexural Strength (23°C)     | 350   | 270   | MPa  | ISO 178       |
| Poisson's Ratio (23°C)       | 0.4   |       |      | ISO 527-2     |

| Impact                           | dry | cond. | Unit              | Test Standard |
|----------------------------------|-----|-------|-------------------|---------------|
| Charpy Notched Impact Strength   |     |       |                   | ISO 179/1eA   |
| +23°C                            | 15  | 21    | kJ/m <sup>2</sup> |               |
| -30°C                            | 14  | 15    | kJ/m <sup>2</sup> |               |
| Charpy Unnotched Impact Strength |     |       |                   | ISO 179/1eU   |
| +23°C                            | 95  | 110   | kJ/m <sup>2</sup> |               |
| -30°C                            | 91  | 95    | kJ/m <sup>2</sup> |               |
| Notched Izod Impact Strength     |     |       |                   | ISO 180/1A    |
| +23°C                            | 17  | 21    | kJ/m <sup>2</sup> |               |
| -30°C                            | 16  | 18    | kJ/m <sup>2</sup> |               |

| Thermal                          | dry | cond. | Unit  | Test Standard |
|----------------------------------|-----|-------|-------|---------------|
| Heat Deflection Temperature      |     |       |       | ISO 75-2/A    |
| 1.80 MPa, Unannealed             | 255 | -     | °C    |               |
| 0.45 MPa, Unannealed             | 260 | -     | °C    |               |
| Melting Temperature              | 260 | *     | °C    | ISO 11357-3   |
| CLTE                             |     |       |       | ISO 11359-2   |
| Flow : 23 to 55°C, 2.00 mm       | 12  | *     | E-6/K |               |
| Transverse : 23 to 55°C, 2.00 mm | 100 | *     | E-6/K |               |
| 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                         | 130 |       | °C    |               |
| 1.50mm                           | 130 |       | °C    |               |
| 3.00 mm                          | 130 |       | °C    |               |
| RTI Str                          |     |       |       | UL 746        |
| 0.750 mm                         | 140 |       | °C    |               |
| 1.50 mm                          | 140 |       | °C    |               |
| 3.00 mm                          | 140 |       | °C    |               |

| Electrical                           | dry       | cond. | Unit  | Test Standard |
|--------------------------------------|-----------|-------|-------|---------------|
| Volume Resistivity (1.00 mm)         | 1E10      | -     | Ohm*m | IEC 60093     |
| Dielectric Strength (1.00 mm)        | 28        | 20    | kV/mm | IEC 60243     |
| Arc Resistance (3.00 mm)             | 5         |       |       | ASTM D 495    |
| Comparative Tracking Index (3.00 mm) | 400 - 599 |       | V     | IEC 60112     |
| High Amp Arc Ignition (HAI)          |           |       |       | UL 746        |

# Vydyne® R550H BK02

polyamide 66



|                                                |       |        |
|------------------------------------------------|-------|--------|
| 0.750 mm                                       | PLC 0 |        |
| 1.50 mm                                        | PLC 0 |        |
| 3.00 mm                                        | PLC 0 |        |
| High Voltage Arc Tracking Rate (HVTR), 3.00 mm | 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                   | Value | Unit   | Test Standard  |
|--------------------------------|-------|--------|----------------|
| Burning Rate, 2.00 mm          |       | mm/min | ISO 3795       |
| Flammability                   |       |        | 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                        | 960   | °C     |                |
| Glow Wire Ignition Temperature |       |        | IEC 60695-2-13 |
| 0.750 mm                       | 700   | °C     |                |
| 1.50 mm                        | 700   | °C     |                |
| 3.00 mm                        | 750   | °C     |                |

| Injection                     | Value     | Unit |
|-------------------------------|-----------|------|
| Drying Temperature            | 80        | °C   |
| Drying Time                   | 4         | h    |
| Rear Temperature              | 280 - 310 | °C   |
| Middle Temperature            | 280 - 310 | °C   |
| Front Temperature             | 280 - 310 | °C   |
| Nozzle temperature            | 280 - 310 | °C   |
| Processing (Melt) Temperature | 285 - 305 | °C   |
| Mold Temperature              | 65 - 95   | °C   |



**North America**  
+1 888 927 2363

**Europe**  
+32 10 608 600

**Asia**  
+86 21 2315 0888

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