# Vydyne® R413H BK07

## polyamide 66

Vydyne R413H BK07 is general-purpose, heat-stabilized, impact-modified, 15% glass-fiber reinforced PA66 resin. Available in black, It is specifically designed to maximize toughness, while retaining physical properties. This product is also lubricated for improved flow and offers superior surface appearance.

## General

| | | | |
|---|---|---|---|
| Additive | • Heat Stabilizer | • Lubricant | |
| Features | • Chemical Resistant | • Creep Resistant | • Gasoline Resistant |
| | • Good Dimensional Stability | • Good Flow | • Good Impact Strength |
| | • Good Mold Release | • Grease Resistant | • High Rigidity |
| | • High Strength | • High Tensile Strength | • Lubricated |
| | • Oil Resistant | • Solvent Resistant | |
| Agency Rating | • ASTM, D4066 PA016G15 | • ASTM, D6779 PA016G15 | |
| Automotive Specifications | • Aptiv M2279V | • Stellantis MS-DB-41 CPN 3152 | • VW VW 50133 (compliance) |
| UL File Number | • E70062 | | |
| Appearance | • Black | | |
| Forms | • Pellets | | |
| Processing Method | • Injection Molding | | |

| Physical | dry | cond. | Unit | Test Standard |
|---|---|---|---|---|
| Density | 1.21 | - | g/cm³ | ISO 1183 |
| Molding Shrinkage | | | | ISO 294-4 |
| Across Flow : 23°C, 2.00 mm | 0.8 | * | % | |
| Flow : 23°C, 2.00 mm | 0.7 | * | % | |
| Water Absorption | | | | ISO 62 |
| 23°C, 24 hr | 1 | * | % | |
| Equilibrium, 23°C, 50% RH | 1.9 | * | % | |

| Mechanical | dry | cond. | Unit | Test Standard |
|---|---|---|---|---|
| Tensile Modulus (23°C) | 5500 | 4100 | MPa | ISO 527-2 |
| Tensile Stress (Break, 23°C) | 110 | 80 | MPa | ISO 527-2 |
| Tensile Strain (Break, 23°C) | 5 | 13 | % | ISO 527-2 |
| Flexural Modulus (23°C) | 4800 | 2800 | MPa | ISO 178 |
| Flexural Strength (23°C) | 140 | 73 | MPa | ISO 178 |
| Poisson's Ratio (23°C) | 0.4 | | | ISO 527-2 |

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| Impact | dry | cond. | Unit | Test Standard |
|---|---|---|---|---|
| Charpy Notched Impact Strength | | | | ISO 179/1eA |
| +23°C | 12 | 18 | kJ/m² | |
| -30°C | 6 | 10 | kJ/m² | |
| -40°C | 5 | 5 | kJ/m² | |
| Charpy Unnotched Impact Strength | | | | ISO 179/1eU |
| +23°C | 80 | 76 | kJ/m² | |
| -30°C | 75 | 70 | kJ/m² | |
| Notched Izod Impact Strength | | | | ISO 180/1A |
| +23°C | 12 | 21 | kJ/m² | |
| -30°C | 10 | 10 | kJ/m² | |
| -40°C | 9 | 9 | kJ/m² | |

| Thermal | dry | cond. | Unit | Test Standard |
|---|---|---|---|---|
| Heat Deflection Temperature | | | | ISO 75-2/A |
| 1.80 MPa, Unannealed | 235 | - | °C | |
| 0.45 MPa, Unannealed | 258 | - | °C | |
| Melting Temperature | 260 | * | °C | ISO 11357-3 |
| CLTE | | | | ISO 11359-2 |
| Flow : 23 to 55°C, 2.00 mm | 30 | * | E-6/K | |
| Transverse : 23 to 55°C, 2.00 mm | 110 | * | E-6/K | |
| RTI Elec | | | | UL 746 |
| 0.400 mm | 120 | | °C | |
| 0.750 mm | 130 | | °C | |
| 1.50 mm | 130 | | °C | |
| 3.00 mm | 130 | | °C | |
| RTI Imp | | | | UL 746 |
| 0.400 mm | 85 | | °C | |
| 0.750 mm | 85 | | °C | |
| 1.50mm | 85 | | °C | |
| 3.00 mm | 85 | | °C | |
| RTI Str | | | | UL 746 |
| 0.400 mm | 125 | | °C | |
| 0.750 mm | 125 | | °C | |
| 1.50 mm | 125 | | °C | |
| 3.00 mm | 125 | | °C | |

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| Electrical | dry | cond. | Unit | Test Standard |
|---|---|---|---|---|
| Volume Resistivity (1.00 mm) | 1E9 | - | Ohm*m | IEC 60093 |
| Dielectric Strength (1.00 mm) | 3 | - | kV/mm | IEC 60243 |
| Arc Resistance (3.00 mm) | 6 | | | ASTM D 495 |
| Comparative Tracking Index (3.00 mm) | 400 - 599 | | V | IEC 60112 |
| High Amp Arc Ignition (HAI) | | | | UL 746 |
| 0.400 mm | PLC 1 | | | |
| 0.750 mm | PLC 1 | | | |
| 1.50 mm | PLC 1 | | | |
| 3.00 mm | PLC 1 | | | |
| High Voltage Arc Tracking Rate (HVTR), 3.00 mm | PLC 3 | | | UL 746 |
| Hot-wire Ignition (HWI) | | | | UL 746 |
| 0.400 mm | PLC 4 | | | |
| 0.750 mm | PLC 4 | | | |
| 1.50 mm | PLC 4 | | | |
| 3.00 mm | PLC 4 | | | |

| Flammability | Value | Test Standard |
|---|---|---|
| Flammability | | UL 94 |
| 0.750 mm | HB | |
| 1.50 mm | HB | |
| 3.00 mm | HB | |

| 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 |

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