

# Vydyne® R535HT BK653

polyamide 66



Vydyne R535HT BK653 is a 35% glass-filled, heat-stabilized PA66+PA6 based resin designed for injection molding applications. It was specifically developed to withstand long term exposure to elevated temperatures up to 190°C. R535HT BK653 offers improved flow with an improved black surface finish and maintains the excellent resistance typical of PA66 in chemicals, machine and motor oils, solvents, and gasoline.

## General

|                           |                                                                |                                                                  |                                    |
|---------------------------|----------------------------------------------------------------|------------------------------------------------------------------|------------------------------------|
| Regional Availability     | • North America                                                | • Europe                                                         | • Asia Pacific                     |
| Additive                  | • Heat Stabilizer                                              | • Lubricant                                                      |                                    |
| Features                  | • Antifreeze Resistant<br>• Gasoline Resistant<br>• Lubricated | • Chemical Resistant<br>• Heat Stabilized<br>• Solvent Resistant | • Fatigue Resistant<br>• High Flow |
| Agency Rating             | • ASTM, D4066 PA114G35                                         | • ASTM, D6779 PA084G35                                           |                                    |
| Automotive Specifications | • Renault AS23a                                                | • Renault UB02d                                                  |                                    |

|                      |                     |           |
|----------------------|---------------------|-----------|
| Resin Identification | PA66+PA6-GF35       | ISO 1043  |
| Part Marking Code    | >PA66+PA6-GF35      | ISO 11469 |
| UL File Number       | • E70062            |           |
| Appearance           | • Black             |           |
| Forms                | • Pellets           |           |
| Processing Method    | • Injection Molding |           |

| Physical                    | dry  | cond. | Unit              | Test Standard |
|-----------------------------|------|-------|-------------------|---------------|
| Density                     | 1.42 | -     | g/cm <sup>3</sup> | ISO 1183      |
| Molding Shrinkage           |      |       |                   | ISO 294-4     |
| Across Flow : 23°C, 2.00 mm | 0.9  | *     | %                 |               |
| Flow : 23°C, 2.00 mm        | 0.4  | *     | %                 |               |
| Water Absorption            |      |       |                   | ISO 62        |
| 23°C, 24 hr                 | 0.8  | *     | %                 |               |
| Equilibrium, 23°C, 50% RH   | 1.6  | *     | %                 |               |

| Mechanical                   | dry   | cond. | Unit | Test Standard |
|------------------------------|-------|-------|------|---------------|
| Tensile Modulus (23°C)       | 10900 | 7200  | MPa  | ISO 527-2     |
| Tensile Stress (Break, 23°C) | 205   | 125   | MPa  | ISO 527-2     |
| Tensile Strain (Break, 23°C) | 3.1   | 7.6   | %    | ISO 527-2     |
| Flexural Modulus (23°C)      | 10200 | 6300  | MPa  | ISO 178       |
| Flexural Strength (23°C)     | 280   | 145   | 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                            | 11  | 12    | kJ/m² |               |
| Charpy Unnotched Impact Strength |     |       |       | ISO 179/1eU   |
| +23°C                            | 75  | 85    | kJ/m² |               |
| -30°C                            | 65  | 75    | kJ/m² |               |
| Notched Izod Impact Strength     |     |       |       | ISO 180/1A    |
| +23°C                            | 14  | 18    | kJ/m² |               |
| -30°C                            | 13  | 13    | kJ/m² |               |

| Thermal                          | dry  | cond. | Unit  | Test Standard |
|----------------------------------|------|-------|-------|---------------|
| Heat Deflection Temperature      |      |       |       | ISO 75-2/A    |
| 1.80 MPa, Unannealed             | 240  | -     | °C    |               |
| 0.45 MPa, Unannealed             | 256  | -     | °C    |               |
| Melting Temperature              | 260  | *     | °C    | ISO 11357-3   |
| CLTE                             |      |       |       | ISO 11359-2   |
| Flow : 23 to 55°C, 2.00 mm       | 19   | *     | E-6/K |               |
| Transverse : 23 to 55°C, 2.00 mm | 81.4 | *     | E-6/K |               |

| Flammability          | Value | Unit   | Test Standard |
|-----------------------|-------|--------|---------------|
| Burning Rate, 2.00 mm |       | mm/min | ISO 3795      |

| 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   |

