

# Vydyne® R633H05

copolyamide 66/6



Vydyne R633H05 is 33% glass-fiber reinforced PA66/6 copolymer resin for superior surface appearance. Available in black, this injection-molding grade resin is lubricated for machine feed and mold release.

## General

|                       |                                                  |                                                |                                       |
|-----------------------|--------------------------------------------------|------------------------------------------------|---------------------------------------|
| Regional Availability | • North America                                  | • Europe                                       | • Asia Pacific                        |
| Additive              | • Heat Stabilizer                                | • Lubricant                                    |                                       |
| Features              | • Copolymer<br>• Heat Stabilized                 | • Good Mold Release<br>• High Tensile Strength | • Good Surface Finish<br>• Lubricated |
| Agency Rating         | • ASTM, D4066 PA112G35<br>• SAE, J1639 PA1816 Z6 | • ASTM, D6779 PA082G35                         | • FED, L-P-410A                       |
| UL File Number        | • E70062                                         |                                                |                                       |
| Appearance            | • Black                                          |                                                |                                       |
| Forms                 | • Pellets                                        |                                                |                                       |
| Processing Method     | • Injection Molding                              |                                                |                                       |

## Physical

|                             | dry  | cond. | Unit              | Test Standard |
|-----------------------------|------|-------|-------------------|---------------|
| Density                     | 1.39 | -     | 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                 | 1.3  | *     | %                 |               |
| Equilibrium, 23°C, 50% RH   | 2.3  | *     | %                 |               |

## Mechanical

|                              | dry   | cond. | Unit | Test Standard |
|------------------------------|-------|-------|------|---------------|
| Tensile Modulus (23°C)       | 10800 | 8000  | MPa  | ISO 527-2     |
| Tensile Stress (Break, 23°C) | 184   | 130   | MPa  | ISO 527-2     |
| Tensile Strain (Break, 23°C) | 4     | 6     | %    | ISO 527-2     |
| Flexural Modulus (23°C)      | 8800  | 6800  | MPa  | ISO 178       |
| Flexural Strength (23°C)     | 255   | 195   | 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                            | 12  | 25    | kJ/m <sup>2</sup> |               |
| -30°C                            | 11  | 15    | kJ/m <sup>2</sup> |               |
| Charpy Unnotched Impact Strength |     |       |                   | ISO 179/1eU   |
| +23°C                            | 51  | 92    | kJ/m <sup>2</sup> |               |

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|                              |    |    |       |            |
|------------------------------|----|----|-------|------------|
| -30°C                        | 44 | 91 | kJ/m² |            |
| Notched Izod Impact Strength |    |    |       | ISO 180/1A |
| +23°C                        | 13 | 22 | kJ/m² |            |
| -30°C                        | 12 | 19 | kJ/m² |            |

| Thermal                          | dry | cond. | Unit  | Test Standard |
|----------------------------------|-----|-------|-------|---------------|
| Heat Deflection Temperature      |     |       |       | ISO 75-2/A    |
| 1.80 MPa, Unannealed             | 220 | -     | °C    |               |
| 0.45 MPa, Unannealed             | 230 | -     | °C    |               |
| Melting Temperature              | 233 | *     | °C    | ISO 11357-3   |
| CLTE                             |     |       |       | ISO 11359-2   |
| Flow : 23 to 55°C, 2.00 mm       | 15  | *     | E-6/K |               |
| Transverse : 23 to 55°C, 2.00 mm | 100 | *     | E-6/K |               |

| Electrical                                     | Value     | Unit | Test Standard |
|------------------------------------------------|-----------|------|---------------|
| Arc Resistance (3.00 mm)                       | 5         | -    | ASTM D 495    |
| Comparative Tracking Index (3.00 mm)           | 250 - 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), 3.00 mm | PLC 2     | -    | UL 746        |
| Hot-wire Ignition (HWI)                        |           |      | UL 746        |
| 0.750 mm                                       | PLC 4     | -    |               |
| 1.50 mm                                        | PLC 4     | -    |               |
| 3.00 mm                                        | PLC 3     | -    |               |

| 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   |

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|                               |           |    |
|-------------------------------|-----------|----|
| Front Temperature             | 280 - 310 | °C |
| Nozzle temperature            | 280 - 310 | °C |
| Processing (Melt) Temperature | 285 - 305 | °C |
| Mold Temperature              | 65 - 95   | °C |

