

## Vydyne® R633H05

Ascend Performance Materials Operations LLC - *Polyamide 66/6 Copolymer*

### General Information

#### Product Description

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

|                           |                                                                                                                 |
|---------------------------|-----------------------------------------------------------------------------------------------------------------|
| Material Status           | • Commercial: Active                                                                                            |
| Availability              | • Asia Pacific • Europe • North America                                                                         |
| Filler / Reinforcement    | • Glass Fiber, 33% Filler by Weight                                                                             |
| Additive                  | • Heat Stabilizer • Lubricant                                                                                   |
| Features                  | • Copolymer • Good Surface Finish • High Tensile Strength<br>• Good Mold Release • Heat Stabilized • Lubricated |
| Agency Ratings            | • ASTM D4066 PA112G35 • FED L-P-410A<br>• ASTM D6779 PA082G35 • SAE J1639 PA1816 Z6                             |
| Automotive Specifications | • STELLANTIS MS-DB-41 CPN4005                                                                                   |
| UL File Number            | • E70062                                                                                                        |
| Appearance                | • Black                                                                                                         |
| Forms                     | • Pellets                                                                                                       |
| Processing Method         | • Injection Molding                                                                                             |
| Resin ID                  | • PA66/6-GF33                                                                                                   |

### Properties <sup>1</sup>

| Physical                                                | Dry     | Conditioned | Unit                  | Test Method |
|---------------------------------------------------------|---------|-------------|-----------------------|-------------|
| Density                                                 | 1.39    | --          | g/cm <sup>3</sup>     | ISO 1183    |
| Molding Shrinkage                                       |         |             |                       | ISO 294-4   |
| Across Flow : 73°F, 0.0787 in                           | 0.90    | --          | %                     |             |
| Flow : 73°F, 0.0787 in                                  | 0.40    | --          | %                     |             |
| Water Absorption (24 hr, 73°F)                          | 1.3     | --          | %                     | ISO 62      |
| Water Absorption (Equilibrium, 73°F, 50% RH)            | 2.3     | --          | %                     | ISO 62      |
| Mechanical                                              | Dry     | Conditioned | Unit                  | Test Method |
| Tensile Modulus (73°F)                                  | 1.57E+6 | 1.16E+6     | psi                   | ISO 527-1   |
| Tensile Stress (Break, 73°F)                            | 26700   | 18900       | psi                   | ISO 527-2   |
| Tensile Strain (Break, 73°F)                            | 4.0     | 6.0         | %                     | ISO 527-2   |
| Flexural Modulus (73°F)                                 | 1.28E+6 | 986000      | psi                   | ISO 178     |
| Flexural Stress (73°F)                                  | 37000   | 28300       | psi                   | ISO 178     |
| Poisson's Ratio (73°F)                                  | 0.40    | --          |                       | ISO 527-2   |
| Impact                                                  | Dry     | Conditioned | Unit                  | Test Method |
| Charpy Notched Impact Strength                          |         |             |                       | ISO 179/1eA |
| -22°F                                                   | 5.2     | 7.1         | ft·lb/in <sup>2</sup> |             |
| 73°F                                                    | 5.7     | 12          | ft·lb/in <sup>2</sup> |             |
| Charpy Unnotched Impact Strength                        |         |             |                       | ISO 179/1eU |
| -22°F                                                   | 21      | 43          | ft·lb/in <sup>2</sup> |             |
| 73°F                                                    | 24      | 44          | ft·lb/in <sup>2</sup> |             |
| Notched Izod Impact Strength                            |         |             |                       | ISO 180/1A  |
| -22°F                                                   | 5.7     | 9.0         | ft·lb/in <sup>2</sup> |             |
| 73°F                                                    | 6.2     | 10          | ft·lb/in <sup>2</sup> |             |
| Thermal                                                 | Dry     | Conditioned | Unit                  | Test Method |
| Deflection Temperature Under Load (66 psi, Unannealed)  | 446     | --          | °F                    | ISO 75-2/B  |
| Deflection Temperature Under Load (264 psi, Unannealed) | 428     | --          | °F                    | ISO 75-2/A  |
| Melting Temperature                                     | 451     | --          | °F                    | ISO 11357-3 |



|                                                  |            |                    |             |                    |
|--------------------------------------------------|------------|--------------------|-------------|--------------------|
| CLTE - Flow (73 to 131°F, 0.0787 in)             | 8.3E-6     | --                 | in/in/°F    | ISO 11359-2        |
| CLTE - Transverse (73 to 131°F, 0.0787 in)       | 5.6E-5     | --                 | in/in/°F    | ISO 11359-2        |
| <b>Electrical</b>                                | <b>Dry</b> | <b>Conditioned</b> | <b>Unit</b> | <b>Test Method</b> |
| Arc Resistance (0.118 in)                        | PLC 5      | --                 |             | ASTM D495          |
| Comparative Tracking Index (0.118 in)            | 250 to 399 | --                 | V           | IEC 60112          |
| High Amp Arc Ignition (HAI)                      |            |                    |             | UL 746A            |
| 0.030 in                                         | PLC 0      | --                 |             |                    |
| 0.06 in                                          | PLC 0      | --                 |             |                    |
| 0.12 in                                          | PLC 0      | --                 |             |                    |
| High Voltage Arc Tracking Rate (HVTR) (0.118 in) | PLC 2      | --                 |             | UL 746A            |
| Hot-wire Ignition (HWI)                          |            |                    |             | UL 746A            |
| 0.030 in                                         | PLC 4      | --                 |             |                    |
| 0.06 in                                          | PLC 4      | --                 |             |                    |
| 0.12 in                                          | PLC 3      | --                 |             |                    |
| <b>Flammability</b>                              | <b>Dry</b> | <b>Conditioned</b> | <b>Unit</b> | <b>Test Method</b> |
| Flame Rating                                     |            |                    |             | UL 94              |
| 0.030 in                                         | HB         | --                 |             |                    |
| 0.06 in                                          | HB         | --                 |             |                    |
| 0.12 in                                          | HB         | --                 |             |                    |

### Processing Information

|                        |                 |
|------------------------|-----------------|
| <b>Injection</b>       | <b>Dry Unit</b> |
| Drying Temperature     | 176 °F          |
| Drying Time            | 4.0 hr          |
| Rear Temperature       | 536 to 590 °F   |
| Middle Temperature     | 536 to 590 °F   |
| Front Temperature      | 536 to 590 °F   |
| Nozzle Temperature     | 536 to 590 °F   |
| Processing (Melt) Temp | 545 to 581 °F   |
| Mold Temperature       | 149 to 203 °F   |

### Notes

<sup>1</sup> Typical properties: these are not to be construed as specifications.

