

## Vydyne® R550

Ascend Performance Materials Operations LLC - *Polyamide 66*

### General Information

#### Product Description

Vydyne R550 is a general purpose, 50% glass-filled, high viscosity PA66 based resin designed for injection molding applications. R550 offers standard flow with a natural surface finish and maintains the excellent resistance typical of PA66 in chemicals, machine and motor oils, solvents, and gasoline.

#### General

|                        |                                                                                                              |
|------------------------|--------------------------------------------------------------------------------------------------------------|
| Material Status        | • Commercial: Active                                                                                         |
| Availability           | • Asia Pacific • Europe • North America                                                                      |
| Filler / Reinforcement | • Glass Fiber, 50% Filler by Weight                                                                          |
| Additive               | • Lubricant                                                                                                  |
| Features               | • Good Flow • Good Mold Release • High Rigidity • High Strength • Lubricated                                 |
| Agency Ratings         | • ASTM D6779 PA011G50 • EU 10/2011 • FDA 21 CFR 177.1500<br>• EC 1935/2004 • EU 2023/2006 • SAE J1639 PA1116 |
| UL File Number         | • E70062                                                                                                     |
| Appearance             | • Natural Color                                                                                              |
| Forms                  | • Pellets                                                                                                    |
| Processing Method      | • Injection Molding                                                                                          |
| Resin ID               | • PA66-GF50                                                                                                  |

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

| Physical                                                | Dry     | Conditioned | Unit                  | Test Method |
|---------------------------------------------------------|---------|-------------|-----------------------|-------------|
| Density                                                 | 1.58    | --          | g/cm <sup>3</sup>     | ISO 1183    |
| Molding Shrinkage                                       |         |             |                       | ISO 294-4   |
| Across Flow : 73°F, 0.0787 in                           | 0.80    | --          | %                     |             |
| Flow : 73°F, 0.0787 in                                  | 0.30    | --          | %                     |             |
| Water Absorption (24 hr, 73°F)                          | 0.50    | --          | %                     | ISO 62      |
| Water Absorption (Equilibrium, 73°F, 50% RH)            | 1.2     | --          | %                     | ISO 62      |
| Mechanical                                              | Dry     | Conditioned | Unit                  | Test Method |
| Tensile Modulus (73°F)                                  | 2.44E+6 | 1.83E+6     | psi                   | ISO 527-1   |
| Tensile Stress (Break, 73°F)                            | 34800   | 26100       | psi                   | ISO 527-2   |
| Tensile Strain (Break, 73°F)                            | 2.5     | 3.5         | %                     | ISO 527-2   |
| Flexural Modulus (73°F)                                 | 2.32E+6 | 1.62E+6     | psi                   | ISO 178     |
| Flexural Stress (73°F)                                  | 50800   | 39200       | 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                                                   | 6.7     | 7.1         | ft·lb/in <sup>2</sup> |             |
| 73°F                                                    | 7.1     | 10          | ft·lb/in <sup>2</sup> |             |
| Charpy Unnotched Impact Strength                        |         |             |                       | ISO 179/1eU |
| -22°F                                                   | 43      | 45          | ft·lb/in <sup>2</sup> |             |
| 73°F                                                    | 45      | 52          | ft·lb/in <sup>2</sup> |             |
| Notched Izod Impact Strength                            |         |             |                       | ISO 180/1A  |
| -22°F                                                   | 7.6     | 8.6         | ft·lb/in <sup>2</sup> |             |
| 73°F                                                    | 8.1     | 10          | ft·lb/in <sup>2</sup> |             |
| Thermal                                                 | Dry     | Conditioned | Unit                  | Test Method |
| Deflection Temperature Under Load (66 psi, Unannealed)  | 500     | --          | °F                    | ISO 75-2/B  |
| Deflection Temperature Under Load (264 psi, Unannealed) | 491     | --          | °F                    | ISO 75-2/A  |
| Melting Temperature                                     | 500     | --          | °F                    | ISO 11357-3 |



|                                                  |            |                    |             |                    |
|--------------------------------------------------|------------|--------------------|-------------|--------------------|
| CLTE - Flow (73 to 131°F, 0.0787 in)             | 6.7E-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        |
| RTI Elec                                         |            |                    |             | UL 746B            |
| 0.030 in                                         | 257        | --                 | °F          |                    |
| 0.06 in                                          | 257        | --                 | °F          |                    |
| 0.12 in                                          | 257        | --                 | °F          |                    |
| RTI Imp                                          |            |                    |             | UL 746B            |
| 0.030 in                                         | 230        | --                 | °F          |                    |
| 0.06 in                                          | 230        | --                 | °F          |                    |
| 0.12 in                                          | 230        | --                 | °F          |                    |
| RTI Str                                          |            |                    |             | UL 746B            |
| 0.030 in                                         | 266        | --                 | °F          |                    |
| 0.06 in                                          | 266        | --                 | °F          |                    |
| 0.12 in                                          | 266        | --                 | °F          |                    |
| <b>Electrical</b>                                | <b>Dry</b> | <b>Conditioned</b> | <b>Unit</b> | <b>Test Method</b> |
| Volume Resistivity (0.0394 in)                   | 1.0E+13    | --                 | ohms·cm     | IEC 60093          |
| Electric Strength (0.0394 in)                    | 560        | --                 | V/mil       | IEC 60243-1        |
| Arc Resistance (0.118 in)                        | PLC 5      | --                 |             | ASTM D495          |
| Comparative Tracking Index (0.118 in)            | 600        | --                 | 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 1      | --                 |             | UL 746A            |
| Hot-wire Ignition (HWI)                          |            |                    |             | UL 746A            |
| 0.030 in                                         | PLC 4      | --                 |             |                    |
| 0.06 in                                          | PLC 4      | --                 |             |                    |
| 0.12 in                                          | PLC 4      | --                 |             |                    |
| <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         | --                 |             |                    |
| <b>Processing Information</b>                    |            |                    |             |                    |
| <b>Injection</b>                                 |            |                    | <b>Dry</b>  | <b>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                 |

