

# Vydyne® R860 BK02

## polyamide 66



Vydyne R860 BK02 is general-purpose, glass-fiber and mineral-reinforced PA66 resin. Available in black, this product is also lubricated for improved flow and offers superior surface appearance.

Glass fiber and mineral-reinforced Vydyne resins provide higher heat distortion temperature, resistance to creep and better dimensional stability when compared with unreinforced PA66. These products have good chemical resistance to a broad range

of chemicals including gasoline, hydraulic fluids and most solvents.

### Typical Applications/End Uses:

Vydyne R860 BK02 can be successfully used in a wide range of injection-molding engineering applications. Typical parts include automotive clips, radiator shrouds, fans and mirror brackets; electrical connectors, housings and bobbins; and industrial applications such as gears, bearing shells, covers and housings.

| General                                      |  |  |  |             |
|--|--|--|--|-------------|
| Material Status                              | • Commercial: Active                   |  |  |             |
| Availability                                 | • Asia Pacific                         | • Europe                                   | • North America                              |             |
| Filler / Reinforcement                       | • Glass Fiber                          | • Mineral                                  |  |             |
| Additive                                     | • Lubricant                            |  |  |             |
| Features                                     | • Good Mold Release<br>• High Rigidity | • High Strength<br>• High Tensile Strength | • Lubricated<br>• Outstanding Surface Finish |             |
| Uses   | • Automotive Under the Hood<br>• Gears | • Housings<br>• Lawn and Garden Equipment  | • Metal Replacement<br>• Power/Other Tools   |             |
| Agency Ratings                               | • ASTM D 4066 PA012R40                 | • ASTM D 6779 PA012R40                     |  |             |
| UL File Number                               | • E70062                               |  |  |             |
| Appearance                                   | • Black                                |  |  |             |
| Forms  | • Pellets                              |  |  |             |
| Processing Method                            | • Injection Molding                    |  |  |             |
| Physical                                     | Dry                                    | Conditioned                                | Unit   | Test Method |
| Density                                      | 1.47                                   | --   | 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                       | 0.25                                   | --   | %  |             |
| Water Absorption (73°F, 24 hr)               | 0.60                                   | --   | %  | ISO 62      |
| Water Absorption (Equilibrium, 73°F, 50% RH) | 2.0                                    | --   | %  | ISO 62      |
| Mechanical                                   | Dry                                    | Conditioned                                | Unit   | Test Method |
| Tensile Modulus (73°F)                       | 1.45E+6                                | 856000                                     | psi  | ISO 527-2   |
| Tensile Stress (Break, 73°F)                 | 17400                                  | 13100                                      | psi  | ISO 527-2   |
| Tensile Strain (Break, 73°F)                 | 2.5                                    | 2.8  | %  | ISO 527-2   |
| Flexural Modulus (73°F)                      | 1.31E+6                                | 653000                                     | psi  | ISO 178     |
| Flexural Stress (73°F)                       | 27600                                  | 14100                                      | psi  | ISO 178     |
| Poisson's Ratio                              | 0.40                                   | --   |  | ISO 527-2   |

| Impact                                     | Dry           | Conditioned | Unit                  | Test Method |
|--|---------------|-------------|-----------------------|-------------|
| Charpy Notched Impact Strength             |               |             |                       | ISO 179     |
| -22°F                                      | 1.8           | 2.9         | ft·lb/in <sup>2</sup> |             |
| 73°F                                       | 2.1           | 4.8         | ft·lb/in <sup>2</sup> |             |
| Charpy Unnotched Impact Strength           |               |             |                       | ISO 179     |
| -22°F                                      | 20            | 29          | ft·lb/in <sup>2</sup> |             |
| 73°F                                       | 23            | 27          | ft·lb/in <sup>2</sup> |             |
| Notched Izod Impact Strength               |               |             |                       | ISO 180     |
| -22°F                                      | 2.2           | 3.1         | ft·lb/in <sup>2</sup> |             |
| 73°F                                       | 2.7           | 4.8         | ft·lb/in <sup>2</sup> |             |
| Thermal                                    | Dry           | Conditioned | Unit                  | Test Method |
| Heat Deflection Temperature                |               |             |                       | ISO 75-2/B  |
| 66 psi, Unannealed                         | 446           | --          | °F                    |             |
| Heat Deflection Temperature                |               |             |                       | ISO 75-2/A  |
| 264 psi, Unannealed                        | 419           | --          | °F                    |             |
| Melting Temperature                        | 491           | --          | °F                    | ISO 11357-3 |
| CLTE - Flow (73 to 131°F, 0.0787 in)       | 1.3E-4        | --          | in/in/°F              | ISO 11359-2 |
| CLTE - Transverse (73 to 131°F, 0.0787 in) | 3.8E-4        | --          | in/in/°F              | ISO 11359-2 |
| Injection                                  | Dry Unit      |             |                       |             |
| Drying Temperature                         | 176 °F        |             |                       |             |
| Drying Time                                | 4.0 hr        |             |                       |             |
| Suggested Max Regrind                      | 25 %          |             |                       |             |
| 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

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